Academic Year 2013-2014

A Critical Evaluation of Power Quality Features Using Hybrid Multi-Filter Conditioner Topology

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Abstract— **With a sprit use of non conventional energy generating sources, photovoltaic (PV) array installations are constitute increasingly engaged in so many applications, like distributed energy generation and stand-alone systems, grid connected systems to improve the power quality features. A specific and simple control method is suggested for compensating and improving power quality problems. This paper take part the energy utilizing phenomena occurring in linear power system network differentiate the unbalanced load condition, mitigation of harmonics, and compensating the reactive power. The control strategy is based on the vectorial dual formulation of instantaneous power theory, so that the voltage waveform injected by the active filter is able to compensate the reactive power and the load current harmonics and to balance asymmetrical loads, regulate the voltage profile when disturbances coming from the grid and achieving load condition. The proposed algorithm also improves the bear of the passive filter and also auto tune up the series active power filter maintains to get THD substantially within IEEE-519 standards. The proposed method is enormously evaluated with improved dynamic behavior of HMFC Topology using MATLAB/SIMULINK Platform.**

Keywords— ***Active Power Filter; Dual Instantaneous Power Theory; DEG (Distributed Energy Generation); HMFC (Hybrid Multi-Filter Conditioner) Topology; Harmonic Mitigation.***

I. INTRODUCTION

Latterly, relieve of the electricity trade has opened a revolutionary and enchanting opportunity for decentralized energy resources to compete a significant role in optimized performance of the overall electric power system network. Additionally decentralized technologies, such as Distributed Energy Generation (DEG) can succeed required electricity demand and implement to generate neaten on-site energy that will increase the infallible of the entire system, increase the price adaptable of demand for centralized power and degrade system losses [1]. Furthermore, since most of the DG implementations are sustainable; such as photovoltaic, wind, hydroelectric or geothermal, or persuasive energy sources such as cogeneration or biomass, fuel cells, expressive environmental amenity can be acquired.

Integration of Renewable energy source (RES) at distribution level is termed as Distributed Energy Generation (DEG). The utility is apprehensive due to the acute perception level of occasional RES in distribution level as it may act a part of threat to network in terms of stability criteria, voltage regulation and improved power-quality (PQ) issues. Therefore, the DEG systems are required to abide by with strict regulatory and technical framework to ascertain reliable and safe effectual operation of overall system[2]. With the furtherance in power electronics and energy generation technologies, the DEG systems can now be vivaciously controlled to amend the system performance with improved PQ at PCC.

Harmonic current starved from a source by the nonlinear load, due to very high usage of semiconductor devices may results in the distortion of source voltage at the point of common coupling (PCC) due to the source side impedance. Both distorted current and voltage may affect the end-user equipment to mis-operate, conductors go to overheat and may reduce the life expectancy and efficiency of the equipment connected at the PCC. Formally, a passive type LC power filters are preferred to eradicate current harmonics when it is connected in shunt with the load. This compensation equipment has some disadvantages, the source impedance is very high compared to filter impedance in order to eliminate source side harmonics, they are not applicable for variable load conditions, and it cannot furnish the complete solution for these problems [3][4].

The Hybrid Multi Filter Conditioner (HMFC) technology is now formulate for providing complete solution for compensating the harmonics, reactive power, and/or neutral current in ac networks. HMF's are also used to eliminate voltage harmonics, to regulate terminal voltage, nothing but moderate the voltage flicker, and bring to perfection of balancing the voltage in three-phase power system network. This comprehensive range of objectives is achieved either combinational or independent, depending upon the provision and control strategy configuration has selected appropriately. The HM filter in this configuration exhibit a PWM waveform which is add or subtract, on an instantaneous support , to or from the supply voltage to maintain a pure sinusoidal voltage waveform across the PCC.

The voltage source inverter (VSI) is a key role of a DEG system as it coupled the renewable energy source to the macro grid and supports the generated power. The RES may be an AC source such as wind energy generation or a DC source such as PV array & fuel cell with high rated converter coupled

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Improvement of Power Quality by Using Hybrid Fuzzy Controlled based IPQC at Various Load Conditions

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***Abstract*- Dis-similar traditionalistic passive type harmonic power filters, modern active type harmonic power filters have the favorable multiple functions: harmonic filtering, damping, reactive-power control for power factor correction and voltage regulation, load balancing, voltage-flicker reduction etc., This paper presents a hybrid fuzzy logic controlled based improved power quality conditioner used to counterbalance for harmonic distortion in three-phase system. The IPQC employs a very simplest methodology for the calculation of the reference compensation current based on FFT Analysis. The presented improved power quality conditioner is able to operate in different load conditions (balanced, unbalanced, variable). Classical filters may not have adequate performance in fast varying conditions. But auto tuned active power filter gives outperform results for harmonic minimization, reactive power compensation and power factor improvement. The proposed auto tuned shunt active filter maintains the THD well within IEEE-519 standards. The proposed methodology is extensively tested for wide range of different Loads with Improved dynamic behavior of IPQC using hybrid fuzzy logic controller.**

***Keywords* - Active power filter, Hybrid fuzzy controller, IPQC (Improved Power Quality Conditioner), Power Quality Improvement.**

I. INTRODUCTION

Power quality is a growing concern for a wide range of customers. Most of the essential international standards define power quality as the super natural characteristics of the utility electrical supply provided under normal operating conditions, which does not disrupt or disturb the customer's processes. However, it is most valuable to notice that the quality of power supply implies basically voltage quality and supply reliability, uninterrupted flow of energy at such as un-notched sinusoidal voltage at the fundamental magnitude level and frequency. Usually the term power quality refers to maintaining a sinusoidal waveform of bus voltages at rated voltage and frequency [1]. The waveform of electric power at generation stage is purely sinusoidal and free from any distortion. Many of the Power conversion and consumption equipment are also designed to function under pure sinusoidal voltage waveforms. However, there are many devices that misshape or distort the waveform.

Harmonic interference problems render by bulge solid state converters become progressively serious as they are widely used in industrial applications and transmission/distribution systems. Nonlinear loads drawing misshape sinusoidal

Currents from three-phase sinusoidal voltages from power generating stations. High-power diode or thyristor rectifiers, cyclo-converters, and arc furnaces are typically characterized as harmonic-producing loads, because electric power utilities the individual nonlinear loads installed by high-power consumers on power distribution systems in many cases. Each of these loads produces a high amount of harmonic current. The utilities can determine the point of common coupling (PCC) of high-rated consumers who place their own harmonic-producing loads on power distribution systems.

One of the eliciting proposals to compensate the power quality problems. Modern active harmonic power filters are outstanding in filtering performance, smaller in physical size, and more adaptable in application, compared to handed-down passive harmonic filters using capacitors, inductors, and/or resistors. However, the active filters are slightly humble in cost and operating loss, compared to the passive filters, even at present. Active power filters conscious for power conditioning are also referred to as "active power line conditioners," "active power quality conditioners," "improved power quality conditioners (IPQCs)," etc.

Academic Year 2014-2015

Optimal PWM Strategy for 11-Level Series Connected Multilevel Converter Using Hybrid PV/FC/BESS Source

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Abstract— **Most of the Multilevel converters are operated under the switching strategy based on fundamental frequency (each switch goes to turn on and off per output cycle, with the equivalent of pulses), with respective switching angles achieves the low value of output THD and it is nothing but optimal THD minimization strategy. Here we preferred H-bridge multilevel converter topology based on a cascaded connection of a high-voltage converter is interfaced for pv/fuel cell based grid connected/standalone AC power system applications. This paper evaluates a new breed of multi carrier modulation scheme is known as wave shift (hybrid) multi carrier modulation, is used to valuation of proposed cascade multilevel converter (CMC). By using the proposed optimal switching scheme provides low amount of total harmonic distortion (THD) in output voltage compared to conventional switching schemes such as phase shift (PSHM) and level shift (LSHM) modulation scheme and simulation circuit of nine and seven levels for proposed multilevel converter is designed. A Simulation study & comparative analysis has been carried out to present high performance of the proposed scheme to approach a very low total harmonic distortion of voltage which leads to the possible elimination of the output filter using Matlab/Simulink Platform.**

Keywords— **Hybrid Generation Systems (HGS), Cascaded Multilevel Converter (CMC), Modulation Schemes, Total Harmonic Distortion (THD).**

I. INTRODUCTION

Conventional methods that incorporate to different power generation system to form a hybrid sources can be classified into ac/dc coupled systems. Nevertheless, the main imperfections of these formal integrating techniques are very complex structures, high amount of switching devices, high switching losses, very expensive. Nowadays different power conversion techniques are used in classical hybrid systems are substituted by multi input conversion systems, which aggregate the various power generating systems in a single structure and have accepted more attention in many industrial applications by reason of attaining simple structure, controlling part as centralized, bidirectional power flow , more reliable, and low size and installation cost [1]. A Novel efficient advancement of various multi-input system is introduced, in this proposed concept used pv source as well as fuel cell and battery source combinations comes under hybridize for attaining unified structure.

Moreover, the Distribution Generation (DG) executions are very sustainable; like wind energy, photovoltaic arrays, geothermal as well as impressive energy sources are fuel cells, cogeneration systems are acquired very attractive environmental vantages. Hybrid Generation Systems (HGS) are becoming more popular and pervasive in grid connected systems and distribution generation systems. A classical hybrid source is centralized series combination of various panels to obtain dc-link voltage, by using these power electronics applications convert dc link voltage to high value of ac with the help of high step up DC/DC converters and DC/AC such as conventional two level converters and proposed multilevel converters. Two-level converters are not preferred for transformer less generating systems reason of high amount of leakage currents generating because of formal modulation schemes (PWM).

Contemporary evaluation of power semiconductor switches devices such as insulated-gate bipolar transistors (IGBTs) and MOSFETs are used in high-power converters, like multilevel voltage source converters (VSIs) and current source converters (CSIs), z-source converters (ZSI). Multilevel converters have high expertise to produce high output voltages and high power range applications with the decrement of low dv/dt or low di/dt values and also less distorted output and it results in reduction of noise and electromagnetic interference (EMI), output filter size. The comprehensive arrangement of MLI is to synthesize a nearby sinusoidal voltage by different levels of voltages based on switching actions, normally obtained from dc sources and capacitor voltage sources [2]. Mostly there are three types of multilevel converter topologies as follows:

- Cascaded Multilevel Converters (CMC)
- Flying-Capacitor Multilevel Converter (FCMC).
- Diode-Clamped Multilevel Converter (DCMC).

Equivalence of FCMC and DCMC converters, a proposed CMC have better features because of easy to design and assemble and uniform structure of the converter and modular circuit and also easily packaged possibility in proposed CMC topology with respective increased levels, and there is no provision of extra voltage balancing capacitors and clamping diodes, mostly required in the FCMC and DCMC. Increased

THD Optimization of Sequential Switching Technique Based Hybrid IPD Modulation Scheme for CMLI

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Abstract—Utilization of power semiconductor apparatus

to enhance power quality may typically use active-power devices optimally operating with very high switching frequencies. The drive and therefore the management of power semiconductor devices typically believe in best modulation schemes with large sampled frequencies to become advanced management schemes. This qualified feature which allows converters with a high range of levels to scale back total harmonic distortion (THD) of specific voltage & current, and their design allows with high voltage high current operations. Pulse width modulation (PWM) techniques have exact ways and enhanced pattern for many research applications. The main intension of this paper is utilized hybrid In-phase Disposition modulation scheme for the 5-level & 7-Level series connected multilevel inverters are preferred for many industrial applications. This proposed scheme is interaction of fundamental low frequency component as well as high frequency multilevel sinusoidal pulse width modulation scheme. This advanced technique supports the uniformed stress along each switch and minimized switching loss can be achieved by this formulation and evaluation of proposed scheme by using Matlab/Simulink tool.

Keywords—Hybrid Pulse-width Modulation; Multilevel Inverter; Multilevel Sinusoidal PWM; In-phase Disposition; Total Harmonic Distortion.

I. INTRODUCTION

Developing power converters that are morely suitable for high-voltage & medium-power range requisitions is an extraordinary challenge for power semi-conductor apparatus. To accomplish this objective, numerous multilevel topologies have been intended in [1]. In future years, multilevel inverters have more accepted for consideration in modern provisions; for example, drive control, static compensation methods (FACTS) in [2], & renewable energy frameworks in [3]. Contrasted with formal two-level voltage source inverters, have high preference it may brings about improved power quality, better electro-magnetic compatibility, low stress on active switches, higher voltage competence, as well as un-necessary quality of a transformer at distributed voltage levels, accordingly diminishing the cost as proposed in [5]. Among the current topologies, cascaded-type, diode-clamped type, capapcitor clamped topologies are generally perceived as mostly three general types. Concerning the cascaded topologies, for instance, the cascaded H-bridge converters are normally modular structure; however they can't be support as consecutive converters without the assistance of transformers. The multilevel converters accomplish high-voltage switching by the utilization of arrangement of voltage steps, each of the individual power apparatus are inside the evaluations. Among the MLI's, the CHB type is alluring in high-voltage requisitions, due to it needs the minimum value of components to achieve the equal number of voltage levels, the proposed schematic diagram of single phase inverter topology as depicted in Fig.1.

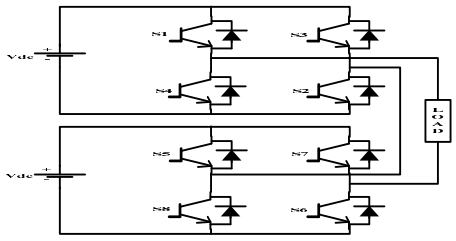

Fig. 1. Schematic Diagram of the Single Inverter Topology.

Veltech Multitech Dr.Rangarajan Dr.Sakunthala Engineering College, Avadi, Chennai (Sponsors)

978-1-4799-7613-3/14/$31.00 ©2014 IEEE

MANAGEMENT INFORMATION SYSTEM AND DECISION SUPPORT SYSTEM IN BUSINESS DECISION MAKING

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ABSTRACT:

The role of Management Information Systems is described and analyzed in light of its capability for decision making. Decision making process and its impact on top level management in a business organization is explained with an emphasis on automated decision making. Management Information System (MIS) is basically concerned with processing data into information which is then communicated to the various Departments in an organization for appropriate decision-making. MIS provides information which is needed to manage organizations efficiently and effectively. It involves three primary resources: people, technology, and information. Management information systems are distinct from other information systems because they are used to analyze operational activities in the organization. Academically, the term is commonly refer to the group of information management methods tied to the automation or support of human decision making, e.g. decision, expert systems, and executive information systems. Organizations still need different types of MIS serving various organizational levels, functions, and business processes. In this paper an attempt has been made to study the role of MIS and decision support system in business decisions in the organization point of view.

Keywords: *MIS, Information System and Decision support system etc.*

INTRODUCTION:

The concept of MIS is a systematic and scientific approach to compile internal and external information into integrated and effective business information. MIS is not new to large business organizations. Only its computerization is new. Before use of computers, MIS techniques were in existence to supply managers with the information that would permit them to plan and control their business operations. The computer has added more or more dimensions, such as speed accuracy and increased volumes of data that permit the consideration of more useful alternatives in decision making.

DECISION MAKING PROCESS:

- ✓ **Programmed decisions** are routine and repetitive decisions, and the organization typically develops specific ways to handle them. For this kind of routine repetitive decisions, standard arrangement decisions are typically made according to established management guidelines.
- ✓ **Non-programmed decisions**, in contrast, are typically one-shot decisions that are usually less structured than programmed decisions.

MANAGEMENT INFORMATION SYSTEM (MIS)

Management information system (MIS) is one of the major computer based information systems. Its purpose is to meet the general information need of all the managers in the firm or in some organizational subunit of the firm.

Academic Year 2015-2016

Chapter 30
Grid Integration of Hybrid Generation Scheme for Optimal Switching Pattern Based Asymmetrical Multilevel Inverter

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Abstract Presently, (RES) Renewable Energy Systems are getting more widely preferred with accumulate of energy demand and concern for the environmental impact around the world. The Hybrid Generation Scheme (HGS) exerts fuel cell (FC) and photovoltaic (PV) sources are the main energy generation sources. Integration of hybrid generation system to grid has favorable advantages and integrated with the help of DC/DC converter because of maintains dc link voltage as a constant and interfacing to grid by using inverter model. Basic need of multilevel inverters has gained more attention in the area of distribution of energy and control due to its advantages in high power applications with low harmonics and also good quality of output voltage. This paper proposes a three-phase Asymmetrical Multilevel Inverter (AMLI) is more suitable converter for hybrid generation scheme, and also compared to the formal multilevel inverter contains need more switches for getting higher voltage levels, gate drive circuit and area of the requirement reduces. The Proposing AMLI produces 7–15 V levels by using 9 switches for this more levels THD goes to reduces. The proposed scheme is comprehensively evaluated with improved performance of AMLI using Matlab/Simulink Package.

Keywords CHB symmetrical and asymmetrical multilevel inverter (AMLI) · PV arrays · Total harmonic distortion (THD) · Hybrid generation scheme (HGS) · Fuel cell stacks

30.1 Introduction

Efficient, reliable, high-quality and low-cost power generation is one of the appreciable factors for improving and predication of very high standard and quality of life. The key necessitate in an optimized energy generation system are better

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C. Kamalakannan et al. (eds.), *Power Electronics and Renewable Energy Systems*, Lecture Notes in Electrical Engineering 326, DOI 10.1007/978-81-322-2119-7_30

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Procedia Technology 21 (2015) 271 – 278

Procedia Technology

SMART GRID Technologies, August 6-8, 2015

Incorporate of FB-MMCs Converter Topologies for Hybrid PV/FC Based EV Applications

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Abstract

A precise method for evaluating a MMC topology getting from the full-bridge topology with a proposition of high gain DC-AC converter is implmented for the contribution of the parasitized converter legs by FBC topology. By utilizing the proposed methodology, a group of FB based MMC are developed for co-generation scheme based RES applications to electric vehicle which have favorable merits like simple structure, reduced switched components, low cost, operating under high reliability region. This paper describes a prenominal methodology as hybrid generation scheme to integrate the Induction Machine to drive the vehicle by utilizing power semi-conductor technology. Adequate asymmetrical based 7-level, 11-level, 21-level, MMCs topologies are developed with multi-carrier PD-PWM scheme with a fewer active devices & gate drive circuits, attains a low THD values, possibility to minimize the filter size & low cost, evaluating the high performance of intended scenario by using Matlab/Simulink tool.

Peer-review under responsibility of Amrita School of Engineering, Amrita Vishwa Vidyapeetham University

Keywords: Electric Vehicle (EV); Full Bridge Converter (FBC); Modern Multilevel Converter (MMC); Phase Disposed Pulse Width Modulation (PD-PWM); Total Harmonic Distrotion (THD).

1. Introduction

The accumulation of energy consumption in world with aggravate of fuel costs, espouse by a fossil fuels are depleted, which has acquirable impetus for using electric vehicles (EVs), rather than thermal vehicles are explored by Yen-Shin Lai et.al in [1]. Thermal vehicles which have high emission of gases and low efficient with high noise, but have some energetic self sufficiency in use. Conceiving the energetic self sufficiency problems and consociate of

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Peer-review under responsibility of Amrita School of Engineering, Amrita Vishwa Vidyapeetham University
doi:10.1016/j.protcy.2015.10.028

PERFORMANCE EVALUATION AND COMPARISON OF DIFFERENT MULTI-RESOLUTION TRANSFORMS FOR IMAGE FUSION

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Abstract

Image fusion combines information from multiple images of the same scene to get a composite image that is more suitable for human visual perception or further image-processing tasks. In this paper, we compare various multi-resolution decomposition algorithms, especially the latest developed image decomposition methods, such as curvelet and contourlet, for image fusion. The investigations include the effect of decomposition levels and filters on fusion performance. By comparing fusion results, we give the best candidates for multi-focus images, infrared–visible images, and medical images. The experimental results show that the shift-invariant property is of great importance for image fusion. In addition, we also conclude that short filter usually provides better fusion results than long filter, and the appropriate setting for the number of decomposition levels is four.

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1. INTRODUCTION

Today, imaging sensors of various types are widely used in military and civilian applications, such as battlefield surveillance,health-care applications, and traffic control. However, the information provided by different imaging sensors may be complementary and redundant. For example, visible image provides the outline of scene, while infrared image can show the existence of some special objects, such as concealed guns or people. To obtain an image that simultaneously contains the outline of scene as well as special objects for the convenience of human visual perception or for further image-processing tasks [1], image fusion can be used to integrate the information provided by individual sensors. In this paper, we concern with the fusion of three types of source images: multi-focus images, infrared–visible images, and medical images.

During the past two decades, many image fusion methods are developed [1]. According to the stage at which image information is integrated, image fusion algorithms can be categorized into pixel, feature, and decision levels [1]. The pixel-level fusion integrates visual information contained in source images into a single fused image based on the original pixel information [2]. In the past decades, pixel-level image fusion has attracted a great deal of research attention. Generally, these algorithms can be categorized into spatial domain fusion and transform domain fusion [3]. The spatial domain techniques fuse source images using local spatial features, such as gradient, spatial frequency, and local standard derivation [1]. For the transform domain methods, source images are projected onto localized bases which are usually designed to represent the sharpness and edges of an image [3]. Therefore, the transformed coefficients (each corresponds to a transform basis) of an image are meaningful in detecting salient features. Consequently, according to the information provided by transformed coefficients, one can select the required information provided from the source images to construct the fused image. With the development of different transform bases, many kinds of multi-resolution transforms have been proposed and used for image fusion, including the pyramid decomposition [9], discrete wavelet (DWT) [4–6,10],curvelet (CVT) [11–17], contourlet (CT) [18], and non subsampled contourlet transform (NSCT) [19–21]. Zhang and Blum established a categorization of multiscale decomposition-based image fusion to achieve a high-quality digital camera image [5]. They focused mainly on fusing the multiscale decomposition coefficients. For this reason, only a few basic types were considered, i.e. the Laplacian pyramid transform, the DWT,and the discrete wavelet frame (DWF). Only visible images were considered in performance comparisons for digital camera application.Pajares and Cruz gave a tutorial of the wavelet-based image fusion methods [6]. They presented a comprehensive comparison of different pyramid merging methods, different resolution levels,and different wavelet families. Three fusion examples were provided,namely multi-focus images, multispectral-panchromatic remote sensing images, and functional–anatomical medical images.

Wavelets and related classical multiscale transforms conduct decomposition over a limited dictionary in which the two-dimensional bases simply consist of all possible tensor products of one-dimensional basis functions. To solve this problem, some new multiscale transforms such as curvelet and contourlet are introduced [11–13,18]. The main motivation of these transforms is to pursue a ‘‘true” two-dimensional transform that can capture the intrinsic geometrical structure [11]. Various transforms have been used to explore the image fusion problem [14–17,19,20,21]; however, there is a lack of comprehensive comparison of these methods on different types of source images. In addition, notice that the general image fusion framework with pyramid decomposition and wavelet has been well studied [5,6]. In this paper, we investigate some recently developed multiscale image decomposition methods including the DWT, CVT, CT, and NSCT, especially different decomposition levels and filters using a general fusion rule. The rest of this paper is organized as follows. In

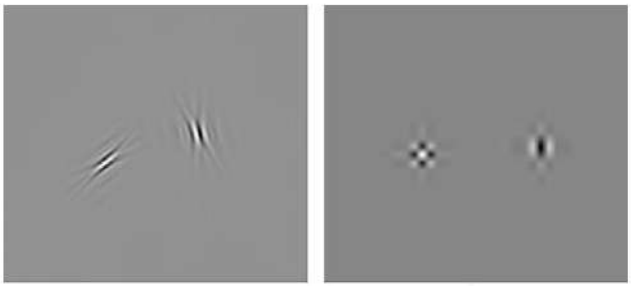
Section 2, the brief reviews of the CVT, CT, and NSCT are presented. In Section 3, we give the general image fusion framework using multiscale image decomposition. Section 4 presents details of numerical experiments and comprehensive discussions on the results. Finally, the main conclusions of this paper are given in Section 5.

2. MULTI-RESOLUTION IMAGE DECOMPOSITION

The multi-resolution transform investigated in this paper includes the DWT, CVT, CT, and NSCT. The DWT and SWT have been researched extensively, and their principles can be found in many literatures [10]; therefore, in this section,we will only briefly review the CVT, CT, and NSCT.

2.1 Curvelet

The DWT, SWT, and DTCWT cannot capture curves and edges of images well. More reasonable bases should contain geometrical structure information when they are used to represent images . Candès and Donoho proposed the curvelet transform (CVT) with the idea of representing a curve as a superposition of bases of various lengths and widths obeying the scaling law width _ length2 [11–13]. Two examples of the CVT bases are shown in Fig. 2a. Fig. 2b presents two examples of wavelet bases. From Fig. 2, it can be seen that the CVT is more suitable for the analysis of image edges, such as curve and line characteristics, than wavelet. The CVT is referred to as the ‘‘true” 2D transform. The discrete version implemented in this research uses a ‘‘wrapping” transform. The flowchart of the second generation of curvelet transform is presented in Fig. 3.Firstly, the 2D FFT is applied to the source image to obtain Fourier samples. Next, a discrete localizing window smoothly localizes the Fourier transform near the sheared wedges obeying the parabolic scaling. Then, the wrapping transformation is applied to re-index the data. Finally, the inverse 2D FFT is used to obtain the discrete CVT coefficients. More details can be found in [11].



(a) (b)

Fig 2 Comparison between curvelet bases and wavelet bases (a) Two bases of curvelet; (b) two bases of wavelet.

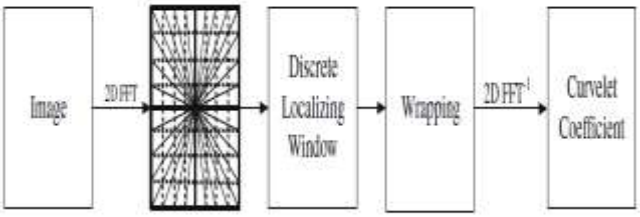


Fig 3 The flowchart of the second generation of curvelet transform via wrapping.

2.2 Contourlet and Nonsubsampled Contourlet Transform:

Different from the CVT which is first developed in continuous domain and then is discretized for sampled data, contourlet transform (CT) starts with a discrete-domain construction [18]. The CT is also deemed as a ‘‘true” two-dimensional transform that can capture the intrinsic geometrical structure of an image. Two filter banks are employed to implement the CT as shown in Fig. 4. The Laplacian pyramid is first used to capture the point discontinuities,and then a directional filter bank is used to link point discontinuities into linear structures. As the DWT, the CT also has no shiftinvariant property because of the down-sampling operation. The nonsubsampled version of the CT, the NSCT, is implemented via the ‘‘à trous” algorithm [19]. It is built upon nonsubsampled multiscale pyramids and nonsubsampled directional filter banks; therefore, a fully shift-invariant version of the CT is achieved.

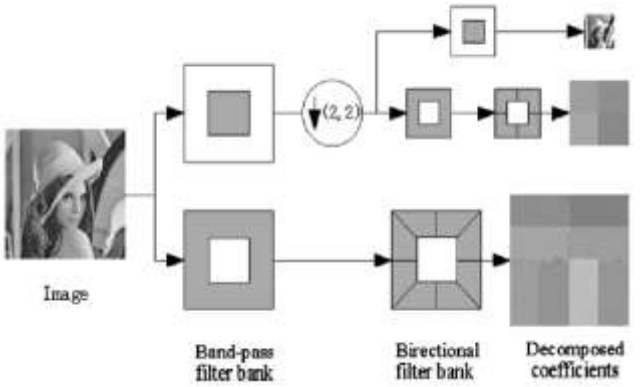


Fig 4 CT-based decomposition of Lena ↓(2,2) means subsampling: keep 1 column out of 2, then keep 1 row out of 2.

3. GENERIC FRAMEWORK FOR MULTISCALE-BASED IMAGE FUSION

In this paper, we make an assumption that there are just two source images A and B. It should be noticed that the multiscale methods can easily be extended to more source images [5]. Fig. 5 illustrates the generic image fusion framework based on multiscale image decomposition methods. The source images are firstly decomposed into low-frequency subbands and a sequence of high-frequency subbands in different scales and orientations. Then at each position in the transformed subbands, the value with the highest saliency is selected to construct the fused subbands.

Finally,the fused image is obtained by applying inverse transform on the fused subbands. There are two key issues in pixel-level image fusion algorithms,namely identifying the most important information in source images and transferring the salient information into the fused image. They are referred as activity-level measurement and coefficient combination, respectively, in many literatures [5–7].The activity-level measurement is used to express the salience of each coefficient in image fusion methods based on multiscale decomposition. Generally, it is described by the absolute value of the corresponding transform coefficients. Other techniques of activity-level measurements include the square of the corresponding coefficient method, rank filter method, and spatial frequency method. They have been well discussed in [6]. In this paper, we choose the absolute value of the corresponding coefficient at each position as the activity-level:

$$A_1(p)= \left| D_1(p) \right|$$

where D is the multiscale coefficient and p =(x,y,l,k) is the index of a particular coefficient; x and y indicate the spatial position in a given subband; and l and k indicate the scale and orientation of D, respectively.

The coefficients combining should integrate the visual information contained in all source images into the fused image without introduction of distortion or loss of information. However, this goal is almost impossible [2]. A more practical way is to integrate the faithful representation of the most important input information into the fused image. A general and effective image fusion rule for the multi-resolution-based methods is adopted in this paper. The low-frequency coefficients are fused by the average method,meaning the fused coefficient is the average of the corresponding coefficients of the source images. The high-frequency coefficients are fused by the approach of choosing absolute maximum. The technique of choosing absolute maximum can be formulated as:

$$D_F(p) = \begin{cases} D_{I_1}(p) & A_{I_1}(p) > A_{I_2}(p) \\ D_{I_2}(p) & \text{otherwise} \end{cases}$$

Based on the general rule, many new fusion rules, such as selection method [21], entropy method , and linear dependency method [17], have been developed. As indicated in the references,these new methods can improve fusion performance in some respects.For example, in Ref. [21], Zhang and Guo proposed a fusion rule to obtain contrast improvements for multi-focus image fusion. However, if all combinations of the multi-resolution transforms and the extend fusion rules are investigated, it is hard to obtain useful conclusions. We think that the conclusions of the general rules are also effective for more powerful rules, which will be verified by an experiment in Section 4. There are two other issues, grouping method and consistency verification in the fusion process. Grouping method means that,

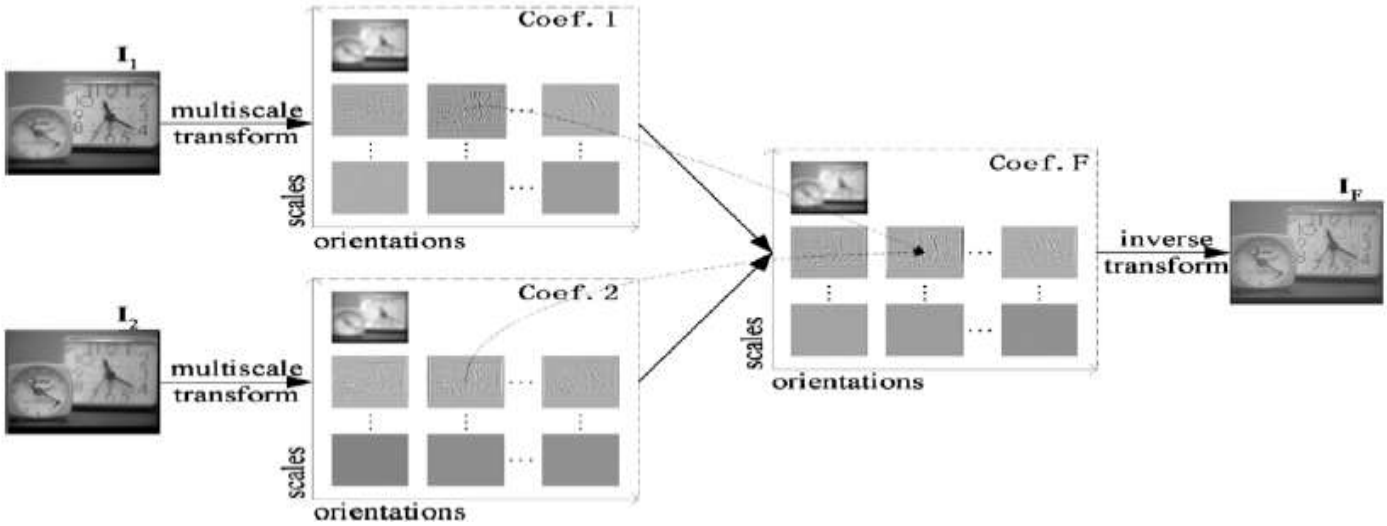


Fig 5 Diagram of generic fusion framework based on multiscale transform.

when determining the fused multi scale coefficients, a set of coefficients in other orientations and frequency sub bands corresponding to the same pixel should be considered jointly. Consistency verification is based on the idea that a composite multi scale coefficient is unlikely to be generated in a completely different manner from all its neighbors. These two issues have been investigated in the literature [5], so they are not considered in this paper. In general, the grouping method and consistency verification can improve fusion result.

4. PERFORMANCE EVALUTION

In this paper, we quantitatively evaluate the fusion performance using five metrics,i.e., mutual information (MI) , $Q^{AB/F}$, Q_0, Q_W, and Q_E ,which have been proved to be effective to a great degree.

1. The mutual information I_{AF} between the source image A and the fused image F is defined as follows:

$$I_{AF} = \sum_{af} p_{AF}(a,f) \log \frac{p_{AF}(a,f)}{p_A(a)p_F(f)}$$

where p_{AF} is the jointly normalized histogram of A and F, p_A and p_F are the normalized histogram of A and F, and a and f represent the pixel value of the image A and F, respectively. The mutual information I_{BF} between the source image B and the fused image F is similar to I_{AF} . The mutual information between the source images A, B, and the fused image F is the sum of I_{AF} and I_{BF} , i.e.

$$M^{AB}_{F} = I^{AF} + I^{BF}$$

2. The metric $Q^{AB/F}$ is defined as follows:

$$Q^{AB/F} = \frac{\sum_{n=1}^{N}\sum_{m=1}^{M}(Q^{AF}(n,m)w^{A}(n,m) + Q^{BF}(n,m)w^{B}(n,m))}{\sum_{n=1}^{N}\sum_{m=1}^{M}(w^{A}(n,m) + w^{B}(n,m))}$$

where $Q^{AF}(n,m)=Q^{AF}{}_{g}(n,m)Q^{AF}\alpha(n,m)$; $^{QAF}g(n,m)$and $^{QAF}{}_{\alpha}(n,m)$ are the edge strength and orientation preservation values, respectively; n, m represent the image location; and N, M arethe size of images, respectively. $Q^{BF}(n,m)$ is similar to $Q^{AF}(n,m)$. $w^{A}(n,m)$ and $w^{B}(n,m)$ reflect the importance of $Q^{AF}(n,m)$ and $Q^{BF}(n,m)$ respectively. The dynamic range of $Q^{AB/F}$ is [0 1], and it should be as close to 1 as possible.

3. The metric Q_O between the source image A and the used image F is defined as follows:

$$Q_0(A,F) = \frac{2\sigma_{af}}{\sigma_a^2 + \sigma_f^2} \cdot \frac{2\bar{a}\bar{f}}{\bar{a}^2 + \bar{f}^2}$$

Where σ_{af} represents the covariance between A and F; σ_a , σ_f denote the standard deviation of A and F; $\tilde{a}$ *and* $\tilde{f}$ represent the mean value of A and F, respectively. $Q_O(A,B,F)$ is the average between $Q_O(A,F)$ and $Q_O(B,F)$, i.e.,

$$Q_0(A,B,F) = (Q_0(A,F) + Q_0(B,F))/2$$

Note that $-1 \le Q_O \le 1$ and it should be also as close to 1 as possible.

4. The metric QW among images A, B, and F is defined as follows:

$$Q_W(A,B,F) = \sum_{w \in W} c(w)(\lambda(w)Q_0(A,F|w) + (1-\lambda(w))Q_0(B,F|w))$$

where $\tilde{\lambda}$ (w) represents the relative salience of A compared to B in the same window w, and c(w) denotes the normalized salience of the window.

5. The metric Q_E is defined as follows:

$$Q_E(A,B,F) = Q_W(A,B,F) \cdot Q_W(A',B',F')^{\alpha}$$

where A', B', F' are the corresponding edge images of A, B, F,respectively. Parameter α which is set to 1 in this paper reflects the contribution of the edge images compared to the original images.

These five metrics given above evaluate the amount of information transferred from source images into the fused image, but there exist differences among them. Mutual information reflects the statistical dependence of two random variables from information theory viewpoint. Especially for image fusion, it measures the similarity of image intensity distribution of the corresponding image pair. The metric $Q^{AB/F}$ evaluates the amount of edge information transferred from source images into fused image. The metrics Q_O, Q_W, and Q_E integrate characteristics of the human visual system. The metric Q_O evaluates the degree of distortion of the fused image. It combines three factors of image distortion related to the human visual system, i.e., loss of correlation, luminance distortion, and contrast distortion. The metric QW further takes the salience of information into account. The metric QE contains visual information and edge information, simultaneously. In addition, the larger value for the above metrics means the better fusion result.

Fig. 6 The source images used in this paper. Multi-focus images (eight pairs).

Table 1: The results of each multi-resolution transform

Image	Transform	Filters	Levels	MI	$Q^{AB/F}$	Q_0	Q_E	Q_W
Multi focus image	DWT	Bior3.1	1	0.1285	0.6304	0.1751	0.0323	0.1847
	Curvlet(CVT)	NA	1	0.3195	0.3989	0.1789	0.1947	0.0347
	Counterlet(CT)	'9-7'-'PKVA'	2	0.1461	0.588	0.1705	0.0304	0.1785
	NSCT	'Maxflat'-'Dmaxflat7'	4	0.1479	0.5983	0.1805	0.0324	0.1890

5. CONCLUSION

In this paper, we compare the image fusion performance of six multi-resolution transforms with different filters and different numbers of decomposition levels. For each multi-resolution transform, the optimal settings are presented for multi-focus images,infrared–visible images, and medical images, respectively. Then,these optimal settings are compared against each other globally.The experimental results indicate that the appropriate setting for the number of decomposition levels is four. It is a trade-off between the capability of catching spatial details and the sensitivity to noise and transform artifacts. When the number of decomposition levels is too large, one coefficient in coarse resolutions responds to a large group of pixels of fused image. Therefore, an error in coarse resolutions has a great effect on final fused image. Some errors inevitably occur in the process of fusion, producing some artificial distortion. Large decomposition levels give rise to fusion methods that are sensitive to noise. Moreover, large decomposition levels consume more time and have higher memory requirements. When the number of decomposition levels is too small, spatial details cannot be captured well. Four out of all five metrics of the NSCT for infrared–visible images and medical images are the best,while three out of all five metrics of the NSCT for multi-focus images are the best. Therefore, the advantages of the NSCT for multi-modality images are more evident than that for single-modality images. The CVT performs better than the DWT for multi-focus images, while the DWT presents better results than CVT for the infrared–visible images and medical images; therefore, the fusion performance of multi-resolution methods is affected by different types of images. The CT is the worst one. Moreover, the property of shift-invariance is important for image fusion, not only for mis registered images but also for strictly registered source images. In addition, short filter usually provides better fusion results than long filter. This is because long filters may smooth details and generate diffusion effect.

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REDACTION OF HARMONICS IN A GRID CONNECTED SINGLE - PHASE PV INVERTER

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Abstract

In this paper, a simple single-phase grid-connected Photo Voltaic (PV) inverter topology consisting of a boost section, a low voltage single-phase inverter with an inductive filter, and a step-up transformer interfacing the grid is considered. Ideally, this topology will not inject any lower order harmonics into the grid due to high-frequency pulse width modulation operation. However, the non ideal factors in the system such as core saturation-induced distorted magnetizing current of the transformer and the dead time of the inverter, etc., contribute to a significant amount of lower order harmonics in the grid current. A novel design of inverter current control that redaction lower order harmonics is presented in this paper. An adaptive harmonic compensation technique and its design are proposed for the lower order harmonic compensation. In addition, a Proportional-Resonant Integral (PRI) controller and its design are also proposed. This controller eliminates the dc component in the control system, which introduces even harmonics in the grid current in the topology considered. The dynamics of the system due to the interaction between the PRI controller and the adaptive compensation scheme is also analyzed. The complete design has been validated with experimental results and good agreement with theoretical analysis of the overall system is observed.

Keywords: *Adaptive filters, harmonic distortion, inverters, solar energy, PRI, THD.*

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1. INTRODUCTION

Renewable sources of energy such as solar, wind, and geothermal have gained popularity due to the depletion of conventional energy sources. Hence, many Distributed Generation (DG) systems making use of the renewable energy sources are being designed and connected to a grid. The topology of the solar inverter system is simple. It consists of the following three power circuit stages:
1) A boost converter stage to perform Maximum Power Point Tracking (MPPT);
2) A low-voltage single-phase *H*-bridge inverter;
3) An inductive filter and a step-up transformer for interfacing with the grid.

The system will not have any lower order harmonics in the ideal case. However, the following factors result in lower order harmonics in the system: The distorted magnetizing current drawn by the transformer due to the nonlinearity in the *B–H* curve of the transformer core, the dead time introduced between switching of devices of the same leg [1]–[5], on-state voltage drops on the switches, and the distortion in the grid voltage itself. There can be a dc injection into the transformer primary due to a number of factors. These can be the varying power reference from a fast MPPT block from which the ac current reference is generated, the offsets in the sensors, and A/D conversion block in the digital controller. This dc injection would result in even harmonics being drawn from the grid, again contributing to a lower power quality. The advantage of the adaptive filter-based method is the inherent frequency adaptability which would result in same amount of harmonic compensation even when there are shifts in grid frequency. The implementation of adaptive filters is simple [10,11]. Thus, in this paper, an adaptive filter-based method is proposed. This method estimates a particular harmonic in the grid current using a Least-Mean-Square (LMS) adaptive filter and generates a harmonic voltage reference using a proportional controller. This voltage reference is added with appropriate polarity to the fundamental voltage reference to attenuate that particular harmonic. This paper includes an analysis to design the value of the gain in the proportional controller to achieve an adequate level of harmonic compensation. The effect of this scheme on overall system dynamics is also analyzed. This method is simple for implementation and hence it can be implemented in a low-end digital controller[6]-[9].

2. ORIGIN OF LOWER ORDER HARMONICS AND FUNDAMENTAL CURRENT CONTROL FUNDAMENTAL CURRENT CONTROL

This section discusses the origin of the lower order harmonics in the system under consideration. The sources of these harmonics are not modeled as the method proposed to attenuate those works independent of the harmonic source.

2.1 Origin of Lower Order Harmonics

1) Odd Harmonics: The dominant causes for the lower order odd harmonics are the distorted magnetizing current

drawn by the transformer, the inverter dead time, and the semiconductor device voltage drops. Other factors are the distortion in the grid voltage itself and the voltage ripple in the dc bus. The magnetizing current drawn by the transformer contains lower order harmonics due to the nonlinear characteristics of the *B–H* curve of the core.

2) Even Harmonics: The topology under consideration is very sensitive to the presence of dc offset in the inverter terminal voltage. The dc offset can enter from a number of factors such as varying power reference given by a fast MPPT block.

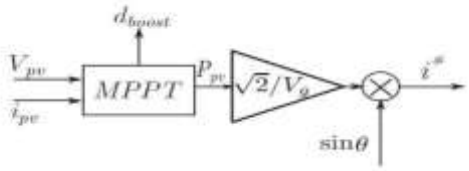

Fig. 1: a fast MPPT block.

In Fig. 1,dboust is the duty ratio command given to the boost converter switch,Vpy and Ipy are the panel voltage and current respectively.

1) Introduction to the PRI Controller: Conventional stationary reference frame control consists of a PR controller to generate the inverter voltage reference. A modification to the PR controller is proposed, by adding an integral block, G_I as indicated in Fig. 2. The modified control structure is termed as a PRI controller.

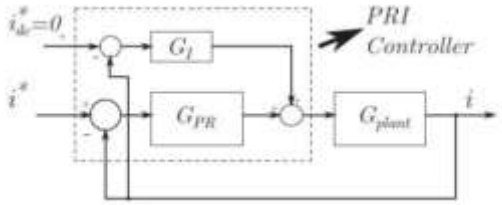

Figure 2: Block diagram of the fundamental current control with the PRI controller

2) Design of PRI Controller Parameters: The fundamental current corresponds to the power injected into the grid. The control objective is to achieve UPF operation of the inverter. First, a PR controller is designed for the system assuming that the integral block is absent, i.e., K_I = 0. Design of a PR controller is done by considering a PI controller in place of the PR controller.

3. ADAPTIVE HARMONIC COMPENSATION

In this section, the concept of lower order harmonic compensation and the design of the adaptive harmonic compensation block using this adaptive filter are explained.

3.1 Review of the LMS Adaptive Filter

The adaptive harmonic compensation technique is based on the usage of an LMS adaptive filter to estimate a particular harmonic in the output current. This is then used to generate a counter voltage reference using a proportional controller to attenuate that particular harmonic.

3.2 Adaptive Harmonic Compensation

The LMS adaptive filter discussed previously can be used for selective harmonic compensation of any quantity, say grid current. To reduce a particular lower order harmonic (say i_k) of grid current:
1) i_k is estimated from the samples of grid current and Phase Locked Loop (PLL) unit vectors at that frequency;
2) A voltage reference is generated from the estimated value of i_k ;
3) Generated voltage reference is subtracted from the main controller voltage reference.

The Fig.3 shows the power circuit topology considered. This topology has been chosen due to the following advantages:

The switches are all rated for low voltage which reduces the cost and lesser component count in the system improves the overall reliability.

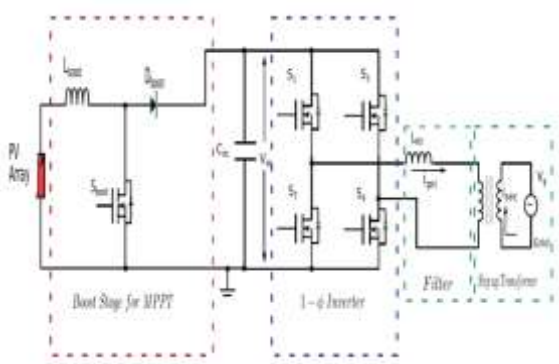

Fig 3: Power circuit topology of the 1 - phase PV

system for a low-voltage inverter with 40V dc bus connected to 230V grid using a step-up transformer. This topology will be a good choice for low-rated PV inverters of rating less than a kilowatt. The disadvantage would be the relatively larger size of the interface transformer compared to topologies with a high-frequency link transformer.

4. SIMULATION RESULTS

4.1 Grid Connected Single-Phase PV Inverter before Compensation

The grid connected single-phase PV inverter before compensation is shown in fig.4. before compensation

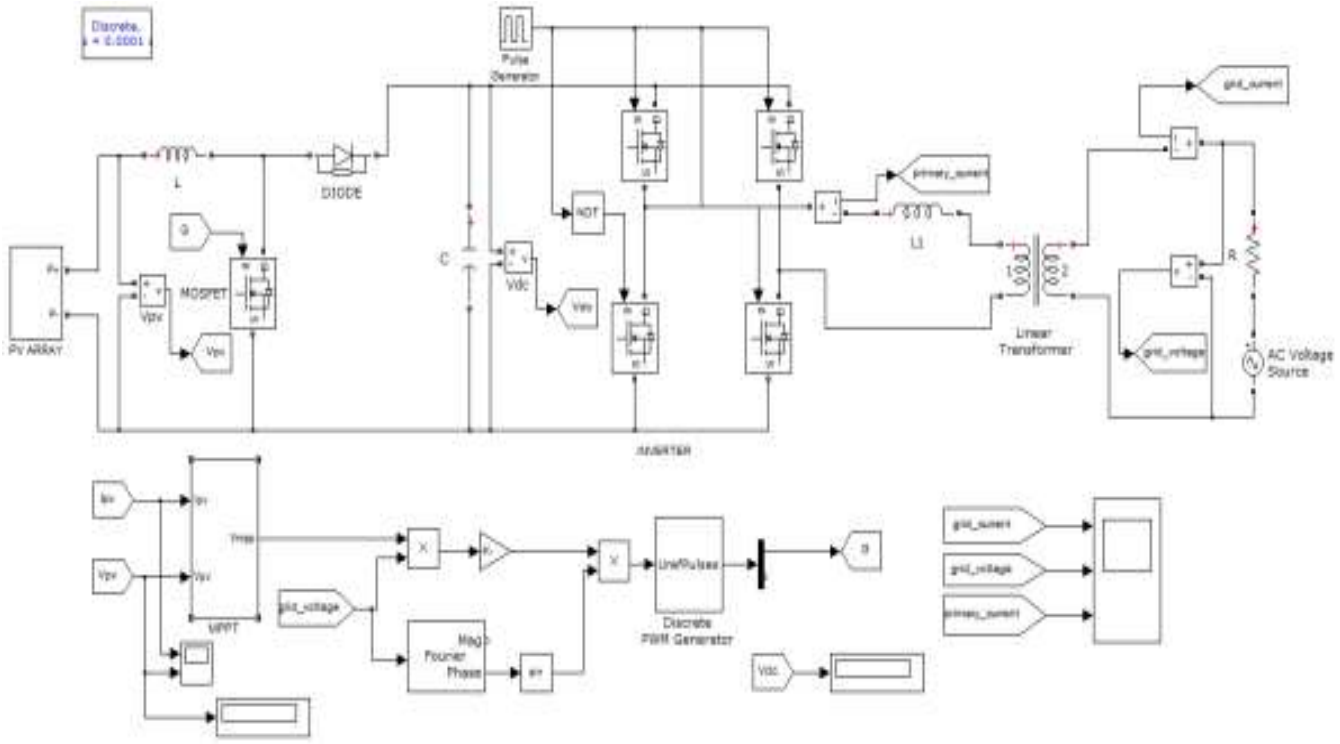

Fig.4

The Fig 4 Consists of PV array, boost converter, single phase inverter, an inductive filter & a step-up transformer for interfacing with the grid. The PV array gives the values are =10.69v, =10.09A, =14.55v. The boost converter boost up the voltage & current. The capacitor is used to the purpose of continuous current flowing. The inverter converts DC power to AC power. In the inverter each IGBT has resistance of 0.1O.the transformer having nominal power of 150VA; operating frequency is 50HZ, L=500, C=6600, R=0.1O, in ac voltage source, peak amplitude=230V.

5. GRID CONNECTED SINGLE-PHASE PV INVERTER WITH PR CONTROLLER

The grid connected single-phase PV inverter with PR controller is shown in fig.7.

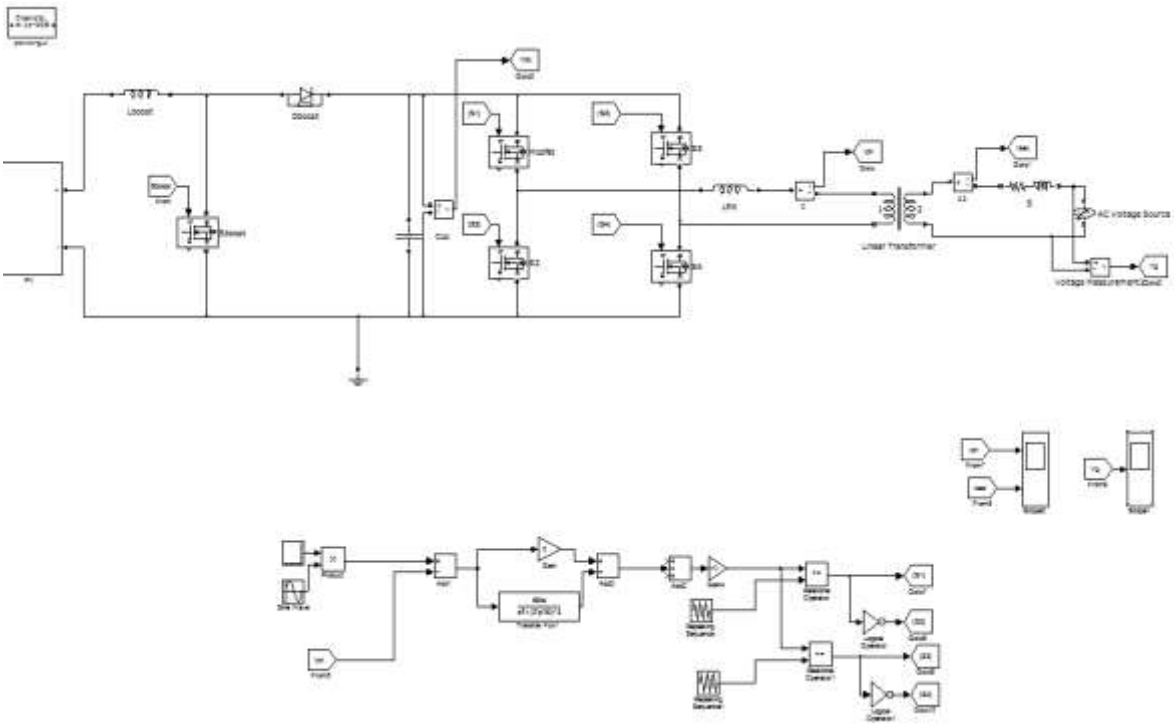

Fig 5: Grid connected single-phase PV inverter with PR controller

The Fig.5. Consists of PV array, boost converter, single phase inverter, an inductive filter& a step-up transformer for interfacing with the grid. The PV array gives the values are PVy=29.62V, IPV=9.90A,I_{dc} =41.7v. The boost converter boost up the voltage & current. The capacitor is used to the purpose of continuous current flowing. The inverter converts DC power to AC power. The transformer having nominal power of 150VA operating frequency is 50HZ.

6. GRID CONNECTED SINGLE-PHASE PV INVERTER WITH PRI CONTROLLER

The grid connected single-phase PV inverter with PRI controller is shown in figure 9.

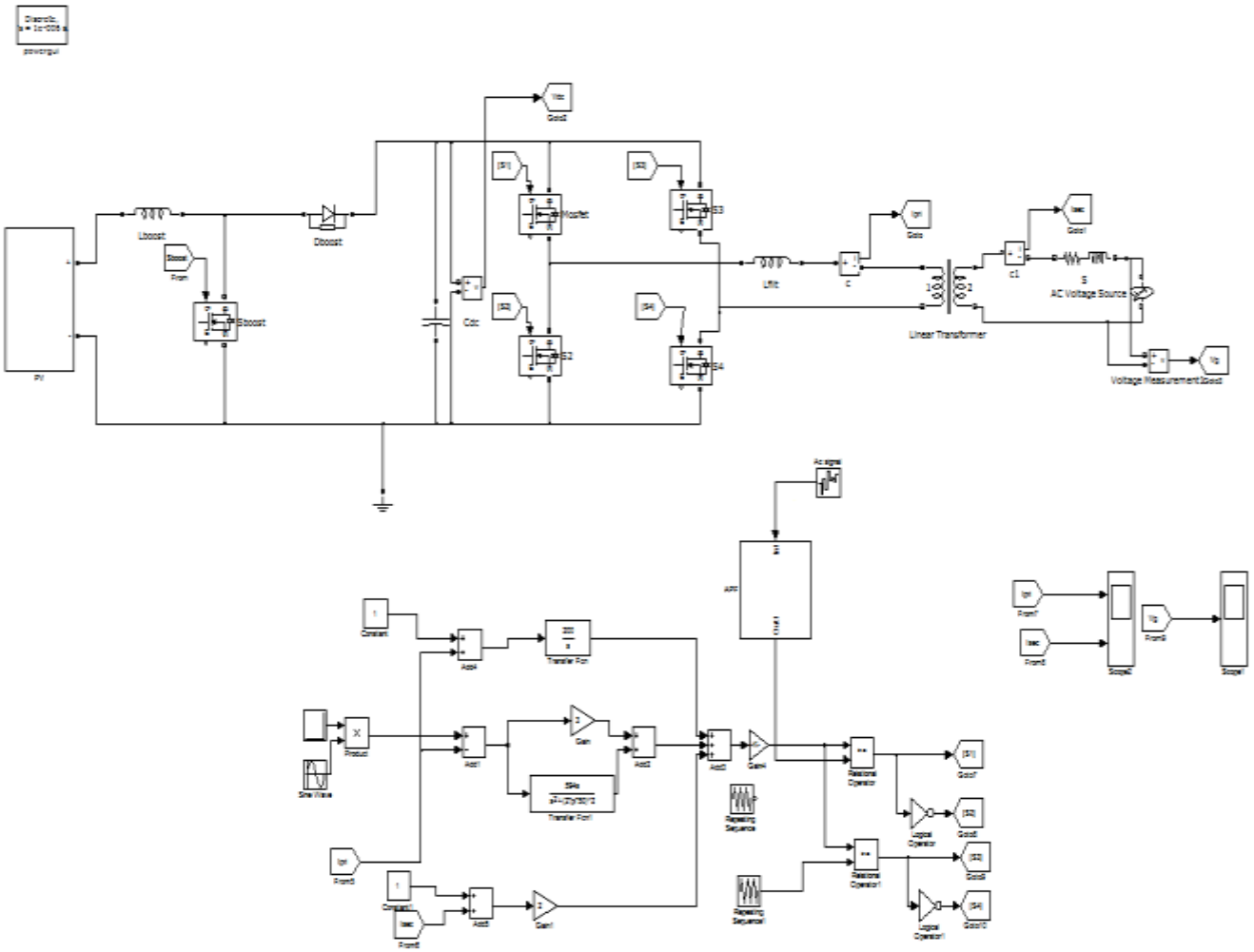

Fig 6: Grid connected single-phase PV inverter with PRI controller

The Fig.6. Consists of PV array, boost converter, single phase inverter, an inductive filter& a step-up transformer for interfacing with the grid. The PV array gives the values are PVY=29.62V, *IPY* =9.903A, V_{dc}=43.77v.The boost converter boost up the voltage & current. The capacitor is used to the purpose of continuous current flowing. The inverter converts DC power to AC power. In the inverter each IGBT has resistance of 0.1Ohms.

6.1 Simulink Results of Grid Connected Single-Phase PV Inverter before Compensation

The Simulink results of namely Grid current, Grid voltage, Primary current of Grid connected single-phase PV inverter before compensation are shown in the Fig.7.

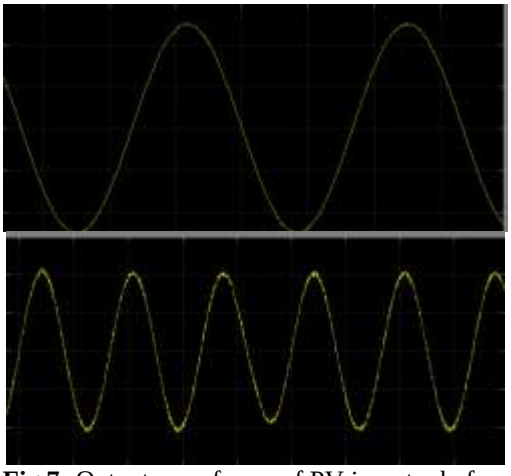

Fig 7: Output waveforms of PV inverter before Compensation

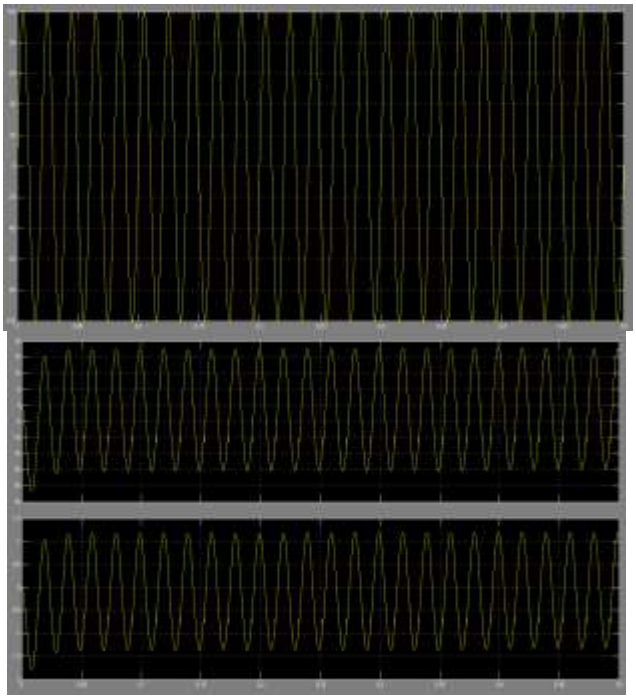

Fig 8: output waveforms of Grid connected single-phase PV inverter with PR controller

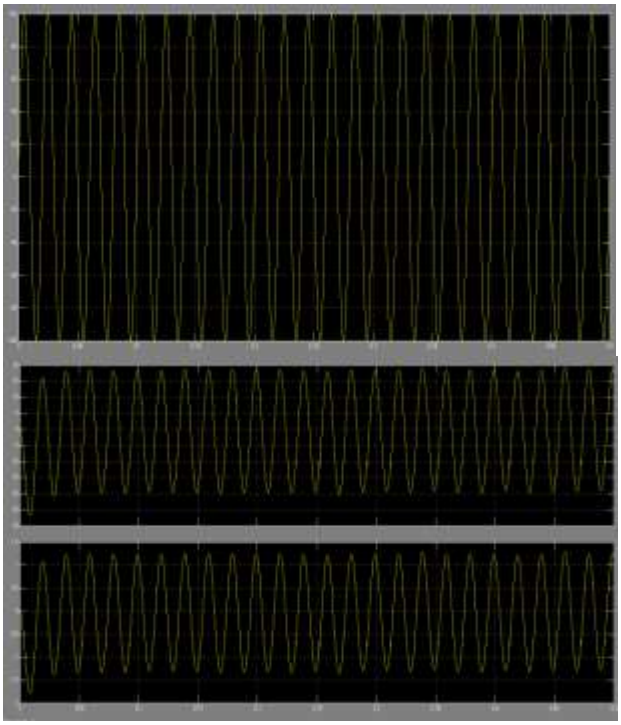

Fig 9: Output waveforms of Grid connected single phase PV inverter with PRI controller.

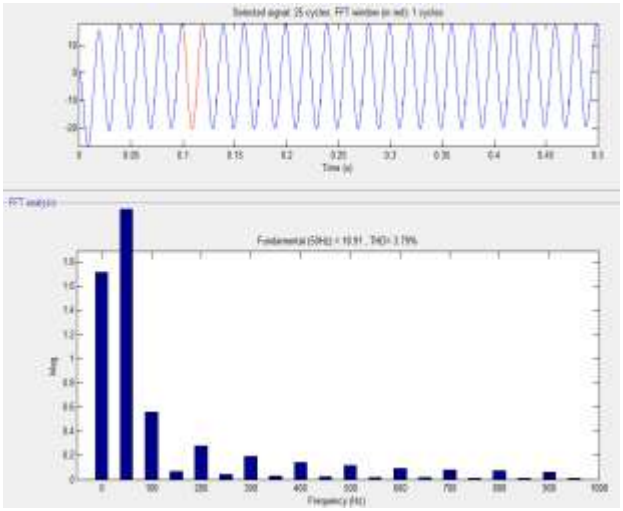

Fig 10: FFT analysis of Grid connected single phase PV inverter with PR controller.

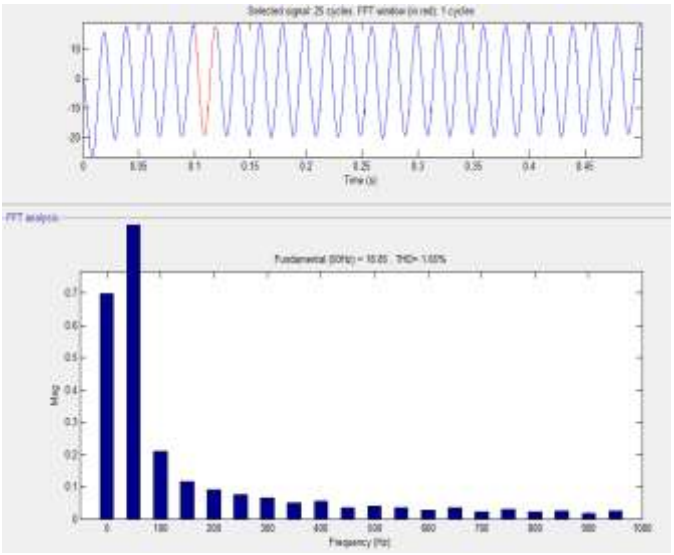

Fig 11: FFT analysis of Grid connected single phase PV inverter with PRI controller.

From the output waveforms and FFT analysis plot Shown in Fig.8 & 10. It is observed that the grid current, grid voltage & primary current are in sinusoidal form. Total harmonic distortion in Grid current of single-phase PV inverter with PR controller. It is observed that the THD in Grid current is 3.79%. From the output waveforms and FFT analysis plot Shown in Fig.9 & 11. It is observed that the grid current, grid voltage & primary current are in sinusoidal form. Total harmonic distortion in Primary current of single-phase PV inverter with PRI controller. It is observed that the THD in Grid current is 1.65%.

Table 1: THD Analysis

	Total Harmonic Distortion (THD) (%)		
	Grid curren	Grid voltage	Primary current
Before compensation	9.13	0	9.14
PR controller	0.16	0	3.79
PRI controller	0.03	0	1.65

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Procedia Technology 24 (2016) 812 – 819

Procedia Technology

International Conference on Emerging Trends in Engineering, Science and Technology (ICETEST - 2015)

Technique for Reduction of Intersymbol Interference in Ultra-Wideband System

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Abstract- In Ultra-wideband system as the pulse period is decreased; Inter Symbol Interference will be present in multipath fading channel. To reduce ISI, CH-DSSS with Code Hopping search algorithm is used. Performance of the algorithm is evaluated based on BER using a rake receiver. Computational speed is also increased by using the Beaulieu Series Method (BSM). Code Hopping search algorithm is being compared for two channel models S-V Model and Intel Based Model.

Peer-review under responsibility of the organizing committee of ICETEST – 2015

Keywords- Ultra-wideband (UWB), CH-DSSS, ISI, Rake Receiver.

I. INTRODUCTION

Ultra-Wideband is different from other communication systems it employs extremely narrow RF pulses to communicate between transmitter and receiver with high data rate. A UWB signal can be Gaussian, Chirp, Wavelet or Hermit based short duration pulses. Here Gaussian pulses are used. As pulse period is decreased in UWB Intersymbol interference will be present in multipath fading channel. BPSK modulation with DSSS-code hopping algorithm is employed to reduce the ISI. Intel channel model is employed to obtain channel impulse response.

Section II, describes the communication system model, Intel based channel model is discussed in section III. Section IV deals with the Code Hopping pattern algorithm Section V presents the simulation Results. Finally Conclusion for given in Section VI.

II. SYSTEM MODEL

The communication system model describes the transmission and reception of the data. The channel is a time varying channel and channel state information is estimated perfectly. The transmitted signal is represented as

$$S(t)=A\sum b_k(t)a_k(t) \quad -\infty<K<\infty \qquad (1)$$

Where $b_k(t)$ and $a_k(t)$ denote the k^{th} waveform and k^{th} spreading code with CH[3] and A is the amplitude of the signal.

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Peer-review under responsibility of the organizing committee of ICETEST – 2015
doi:10.1016/j.protcy.2016.05.105

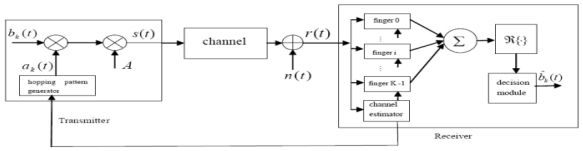


Fig.1.System model

The signal is being spread with the code and BPSK modulation is used. The transmitted signal s(t) is passed through the intel based channel model described in the next section. Beaulieu series method (BSM) is used to analyze the bit error probability of BPSK. The energy of the signal received is scattered due to the multipath fading channel. This received signal r(t) is collected by the K rake fingers and are summed using Maximal Combining Ratio (MCR) rule assuming perfect Channel state information. The cross correlation function of the spreading sequence is indicated as R {....}.

III. INTEL BASED CHANNEL MODEL

UWB channel model proposed by Intel is used which has lognormal distribution [1]. Discrete time impulse response of the multipath model is

$$h(t) = \sum\sum \alpha_{k,l}\ \delta(t - T_l - \tau_{k,l} \qquad (2)$$

for $0<k<K$ and $0<l<L$

where $\alpha_{k,l}$ is the multipath gain coefficient, T_l is the delay of the l^{th} cluster, and $\tau_{k,l}$ is the delay of the k^{th} multipath component relative to the l^{th} cluster arrival time(T_l). Distribution of cluster arrival time and the ray arrival time are given by

$$P(T_l|T_{l-1}) = \wedge\exp[-\wedge(T_1|T_{l-1})], \ l > 0 \qquad (3)$$

$$P(\tau_{k,l} \mid \tau_{(k-1)l}) = \lambda \exp[-\lambda(\tau_{k,l} - \tau_{(k-1)l})], \ k>0 \qquad (4)$$

The parameters used for simulation of UWB channel model are given in the Table.

Table.1 Parameters for channel model (Intel)

Channel parameters	LOS	NLOS1	NLOS2
Cluster arrival rate (ns)	1/6	1/22	1/11
Ray arrival rate (ns)	1/0.6	1/0.94	1/0.35
Cluster decay factor (ns)	16	7.6	16
Ray decay factor (ns)	1.6	0.94	8.5
Standard deviation (dB)	4.8	4.8	4.8

IV. CODE HOPPING PATTERN ALGORITHM

A stage wise code hopping pattern algorithm is used to select a good CH pattern with reduced complexity [4]. N_h indicates the period of the hopping pattern.

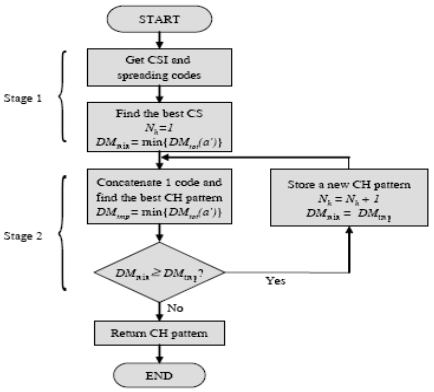


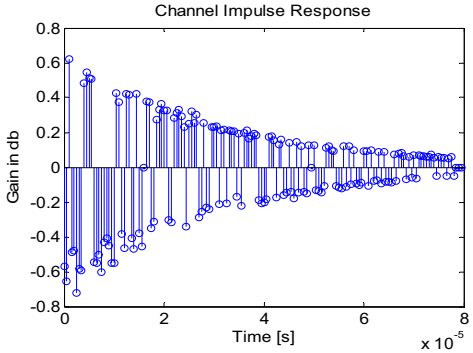
Fig:2 Stage-wise CH pattern search method

Stage 1: Code selection search is performed. Among the total number of spreading codes available at the transmitter, the best code that has the minimum error probability is taken. The length of the CH pattern is 1. If Code selection is to be used in the system, the search is being stopped at stage 1.If CH is possible, go for the next stage.

Stage 2: Code hopping pattern search: Search for new CH pattern with length $N_h=N_h+1$ based on the code selection found at previous stage1.CH pattern with length $N_h=2$ is best .If the worst code value of the present CH pattern is smaller than that of the code selection, select this CH pattern and proceed to next stage. If not discard it and choose the code selection code and stop the search. The stage wise CH pattern search reduces computational complexity compared to the exhaustive search method.

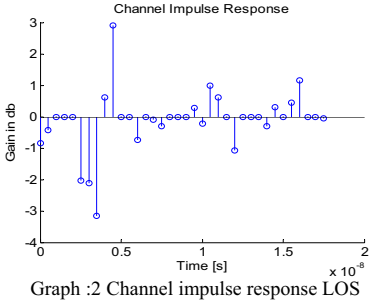
V. RESULTS

Impulse response of the Saleh-Valenzuela Model(S-V) is given in Graph.1

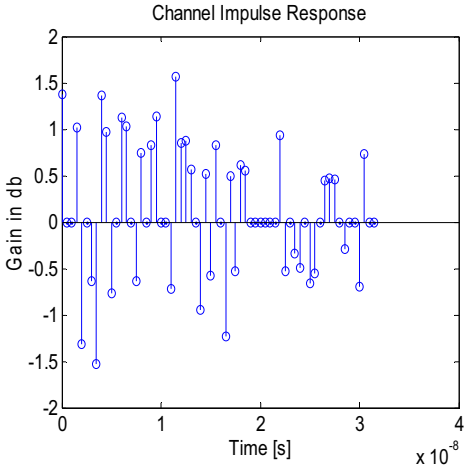


Graph: 1 Channel impulse response (S-V)

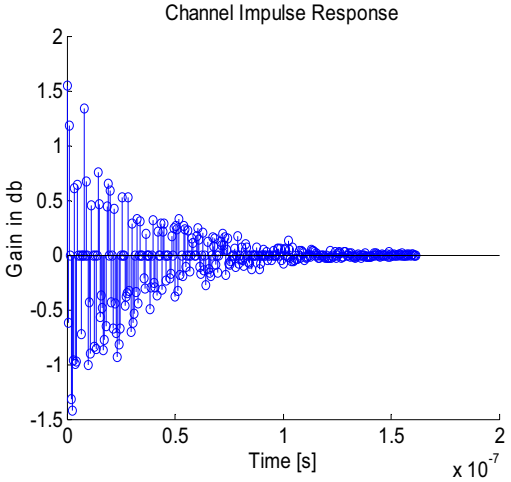
Impulse response of the UWB proposed channel model with the parameter of the LOS, NLOS1and NLOS2 is plotted respectively.



Graph :2 Channel impulse response LOS



Graph:3 Channel impulse response NLOS1



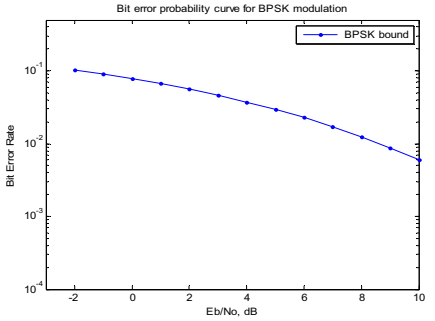
Graph: 4 Channel impulse response NLOS2

Channel Gains of S-V Model and Intel Model are tabulated in Table.2

Table-2
Channel Gain of S-V Model and Intel Model

Channel Model	Max Gain(dB)	Min Gain(dB)
S-V Model	0.6229	-0.7229
Intel Model LOS	3.4323	-3.3107
NLOS1	2.2317	-1.8162
NLOS2	1.0954	-1.2192

Bit error probability for BPSK modulation using the Beaulieu series method is shown in the Graph.5

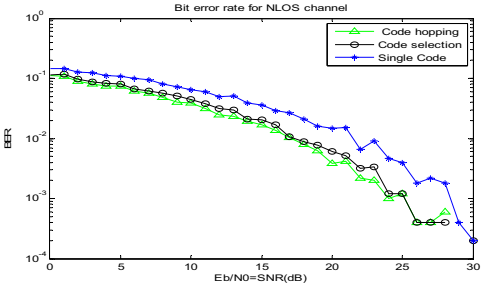


Graph: 5 Bit error probability for BPSK modulation

Table.3
BER values for each WH(32) code (SV model)

CODE	BER(dB)	CODE	BER(dB)	CODE	BER(dB)
1	0.1038	12	0.0112	23	0.0007
2	0.0909	13	0.0099	24	0.0006
3	0.0786	14	0.0086	25	0.0004
4	0.0671	15	0.0074	26	0.0003
5	0.0563	16	0.0066	27	0.0002
6	0.0464	17	0.00046	28	0.0001
7	0.0375	18	0.00039	29	0.0001
8	0.0297	19	0.00026	30	0.0000
9	0.0229	20	0.00016	31	0.0000
10	0.0172	21	0.00012	32	0.0000
11	0.0125	22	0.0009		

Graph.6 shows the average BER for 32WH codes using the channel impulse response of S-V model and Graph.8 Shows the average BER for the 32WH codes using the channel Impulse response NLOS2 of the Intel model. Direct sequence spread spectrum with single code has higher error when compared to Code Hopping pattern.



Graph: 6 Bit error rat with single code, code selection and code hopping with (S-V) Model Impulse Response (WH(32))

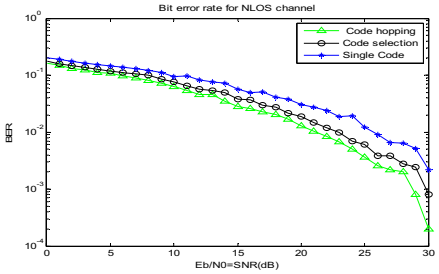
Table.4
BER values for each WH(32) code (Intel model)

CODE	BER(dB)	CODE	BER(dB)	CODE	BER(dB)
1	0.1306	12	0.0060	23	0.0000
2	0.1038	13	0.0046	24	0.0000
3	0.0786		0.0024		0.0000
4	0.0563	15	0.0008	26	0.0000
5	0.0375	16	0.0002	27	0.0000
6	0.0229	17	0.0000	28	0.0000

7	0.0225	18	0.0000	29	0.0000
8	0.0137	19	0.0000	30	0.0000
9	0.0125	20	0.0000	31	0.0000
10	0.0116	21	0.0000		
11	0.0096	22	0.0000		

Table.5 BER values for each Gold(31) code (SV model)

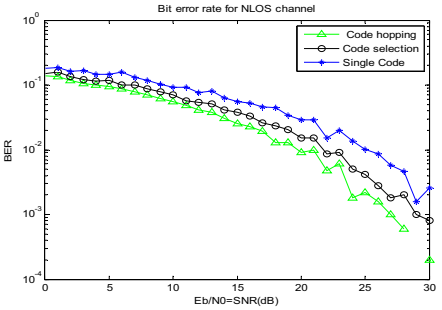
CODE	BER(dB)	CODE	BER(dB)	CODE	BER(dB)
1	0.0623	12	0.0053	23	0.0000
2	0.0546	13	0.0036	24	0.0000
3	0.0472		0.0023		0.0000
4	0.0402	15	0.0014	26	0.0000
5	0.0338	16	0.0008	27	0.0000
6	0.0278	17	0.0005	28	0.0000
7	0.0225	18	0.0002	29	0.0000
8	0.0178	19	0.0001	30	0.0000
9	0.0137	20	0.0001	31	0.0000
10	0.0103	21	0.0000	32	0.0000
11	0.0075	22	0.0000		



Graph: 8 Bit error rate for NLOS2 with single code, code selection and code hopping with Intel Model Impulse Response(WH(32))

Table.6 BER values for each Gold(31) code (Intel model)

CODE	BER(dB)	CODE	BER(dB)	CODE	BER(dB)
1	0.0623	12	0.0053	23	0.0000
2	0.0546	13	0.0036	24	0.0000
3	0.0472		0.0023		0.0000
4	0.0402	15	0.0014	26	0.0000
5	0.0338	16	0.0008	27	0.0000
6	0.0278	17	0.0005	28	0.0000
7	0.0225	18	0.0002	29	0.0000
8	0.0178	19	0.0001	30	0.0000
9	0.0137	20	0.0001	31	0.0000
10	0.0103	21	0.0000	32	0.0000
11	0.0075	22	0.0000		



Graph:9 Bit error rate with single code, code selection and code hopping with (S-V) Model Impulse Response (Gold(31))

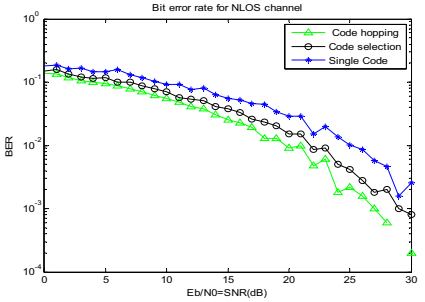


Fig: 10 Bit error rate for NLOS2 with single code, code selection and code hopping with Intel Model Impulse Response (Gold(31))

VI. CONCLUSION

CH-DSSS with Code Hopping search algorithm is used to reduce the Intersymbol interference. WH(32) code and Gold code(31) is used here and comparison of CH-DSSS with Code Hopping search algorithm for two channel models S-V and Intel model is compared. Since lognormal distribution is used in Intel based channel model BER is reduced compared to S-V model.

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Problem Resolution Investigation by Analysing Challenges in Current Quality Assurance Processes

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***Abstract*— Today, software companies face challenge in delivering software within the stipulated schedule & budget, and because of these constraints the end product is often not subjected to full fledged quality assurance. There have been several studies into software project failure that have attributed failure to one or more areas of project management or quality management. Everything else will be just nothing if the customers don't like what they see. Part of SQA is to ensure that software development was made according to their needs, wants and exceeding their expectations. Even if the bugs and errors are minimized by the system, customer satisfaction is more important and should be emphasized. Even though no system is ever completely problem-free, we need limit problems so far as possible in order to cut cost & waste of time. Misinterpreting what the client wants can result in rework time, higher maintenance and support costs, missed deadlines and budget, and poor morale. Software Quality assurance provides the basis and insight for a successful software products. If SQA activities are successfully implemented then the product after the shipment have less bugs and less maintenance efforts are required later on.**

This paper defines the quality expectations the project must achieve and how they will be met. It describes the qualities that must be possessed by the project i.e. methods and techniques for supporting the work of software project managers and software developers in relation to software process improvement, software project planning and management of software development projects. It also describes the quality aspects that apply to the processes to be used in the project to create the desired outputs and outcomes.

***Keywords*— Process Centred Approach, Project Risks, Process Improvement, Quality Management, Continuous Improvement Life Cycle**

I. INTRODUCTION

Both the customer and the software organization invest large sums of money for the software projects yet achieve limited success. A good amount of literature survey and journal articles on project failure indicate that serious problems exist across the industry as a whole[1][2][3][4][5][6][7][8][9]. Not all the projects experienced the same level of difficulty with these issues, but almost all had to face them. These studies show subjective evidence that confirms project failure is very common and this is a business problem. Despite the body of knowledge on project management, processes, standards and governance, a large percentage of projects are abandoned, before or after the delivery of the project due to unmet requirements, large number of bugs and even unhappy end users as the software delivered had not provided the business value[10]. While analyzing few case studies of the failure projects[11][12][13] [11][12][13][14], huge rework time, higher maintenance and support costs, missed deadlines and budget, and poor morale are the main reasons of failure of any software system. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. These studies indicate that serious problems exist across the software industry as a whole. The research we are conducting involves the analysis of few audit reports of large projects, interviews with project managers, and case study reports to build a rich picture of how different stakeholders perceive the quality of software engineering processes.

In the context of software quality, software quality process may be defined as a process-centered approach to ensure that an organization is providing the best possible product deliveries or services within the constraints of schedule and budget[15][16]. There have been several studies into software project failure that have attributed failure to one or more areas of project management or quality management. Also there have been many research papers on the attribution of reasons for failure of projects like grossly exceeded budget and schedule parameters, or software delivery of poor quality that it was unusable etc[15][17][18][19][20]. On one side, we find projects facing difficulty in delivering software within the constraints of schedule, budget, and quality. On the other side associates from quality department usually come across the situations quite often about the lack of conformance

Dept of CSE, Andhra Loyola Institute of Engineering & Technology, vijayawada, "National Conference On "Recent Treand in Advance Computing", NCRTIAC2K16,30th APRIL 2016-IJRCSE SPECIAL ISSUE,
ISSN-2321-5585 (Online)
ISSN-2321-0338 (Print)

A Secured Source Routing in Autonomous Systems

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Abstract:-
In today's Internet, inter-domain route control remains indescribable; however such control could pick up the performance, reliability, and practicality the network for end users and ISPs alike. whereas researchers have proposed a number of source routing techniques to contest this drawback, there has thus far been no way for self governing autonomous system to ensure that such traffic does not evade local traffic policies, nor to accurately determine the correct party to charge for forwarding the traffic. We present Platypus, an authenticated source routing system built approximately the concept of network capabilities, which allow for accountable, optimal path selection by cryptographically attesting to policy conformity at each hop along a source route. Capabilities can be composed to construct routes during multiple autonomous systems and can be entrusted to third parties. Platypus caters to the needs of both end users and ISPs: users gain the ability to pool their resources and select routes other than the default, while ISPs maintain control over where, when, and whose packets pass through their networks. Our advance to falling this complexity is to separate the issues of connectivity discovery and path selection. Removing policy constraints from route detection presents a chance for end users and edge networks: routes before hidden by overly traditional policy filters can be revealed by autonomous system and traversed by packets.

Index Terms—Source routing, authentication, overlay networks, capabilities.

I. INTRODUCTION:

Network operators and academic researchers similarly recognize that today's wide-area Internet routing does not recognize the full potential of the existing network infrastructure in terms of performance, reliability, or flexibility. While a number of techniques for intelligent, source-controlled path collection have been projected to advance end-to-end performance, reliability, and flexibility, they have proven difficult to deploy due to concerns about security and network instability. We effort to address these issues in developing a scalable, authenticated, policy compliant, wide-area source routing protocol. In today's primary wide area routing protocol, the Border Gateway Protocol (BGP), is extremely difficult to describe, analyze, or manage. Autonomous systems (ASes) communicate their local routing policy for the period of BGP route advertisement by affecting the routes that are elected and exported to neighbors. Similarly, ASes recurrently adjust a number of attributes on routes they classify from their neighbors according to

Dept of CSE, Andhra Loyola Institute of Engineering & Technology, Vijayawada, "National Conference On "Recent Trends in Advanced Computing", NCRTIAC2K16, 30th APRIL 2016-IJRCSE SPECIAL ISSUE,
ISSN-2321-5585 (Online)
ISSN-2321-0338 (Print)

Best Practices in Vulnerability Management: "The EiQ Networks' SOCVue® Vulnerability Management" Administration Perspective

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Abstract: Vulnerability management (VM)1 is the cyclical practice of identifying, classifying, remediating, and mitigating vulnerabilities. This is a broad definition that has implications for corporate or government entities. It is not a new discipline, nor is it a new technology. This vital function has been a normal part of hardening defenses and identifying weaknesses to systems, processes, and strategies in the military and in the private sector. With growing complexity in organizations, it has become necessary to draw out this function as a unique practice complete with supporting tools. This has resulted in an important refinement of the definition of VM as a segment of risk management.

Key Terms: Vulnerability, Management, Risk, Security, Administration etc.,

1. INTRODUCITON: Necessity of Vulnerability Management: Vulnerabilities are potential openings presented by blemishes in programming code or framework designs that may empower programmers to trade off your system or frameworks. Mistakes presented amid programming frequently bring about unintentional vulnerabilities that empower programmers a method for entrance to the frameworks. Different vulnerabilities may not be a consequence of programming bugs by any means, but instead erroneous setups, for example, inability to close suitable ports on a firewall. Programmers always search for the open entryways and windows left by vulnerabilities in programming and framework arrangements and look to abuse these openings to get entrance and sidestep your security controls.

Vulnerabilities come in numerous structures. For instance, things, for example, open ports and conventions may leave unintended access to key regions of a framework. Memory administration issues may make different parkways for aggressors to endeavor and pick up control over your frameworks. Since such a large number of gadgets are associated together in present day organizations, once control of one framework is picked up, it is frequently less demanding for an assailant to pick up control of extra frameworks inside your system.

Once a weakness is distinguished by the group, programming merchants frequently discharge fixes that address the helplessness what's more, right the code that created the defenselessness.

Be that as it may, patches themselves may contain blunders, and may have unintended effects on different zones of your frameworks, especially on the off chance that you have broad customization. Along these lines, intensive audit and testing of patches before conveying to creation frameworks is frequently prescribed. To pinpoint which frameworks are liable to known vulnerabilities, customary observing of frameworks is required.

Or maybe than just attempting to monitor the most recent fixes that apply to every framework, it is regularly less demanding to run mechanized evaluations against known vulnerabilities to distinguish if these the vulnerabilities are available on a specific framework in your system. Defenselessness examines give robotization to recognize which frameworks are liable to which vulnerabilities. By checking ports and conventions and in addition introduced programming and OS forms, an output of your system can yield a rundown of frameworks and the vulnerabilities every framework endures. These can then be organized in light of danger levels, with

1 arrangements for remediation put vigorously. Helplessness administration incorporates one-time examines, as well as the procedure of dealing with these sweeps and the related remediation of the

International Journal of Innovative Research in Science and Engineering
Vol. No.2, Issue 05, May 2016
www.ijirse.com
ISSN: 2454-9665

A NOVAL SECURITY METHOD FOR IMPLANTING A PLAINTEXT ON ELLIPTIC CURVE CRYPTOGRAPHY BY USING TDMRC CODE

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ABSTRACT

Now-a-days web applications are becoming very popular and there is a growth in the total amount of sensitive information which are transmitted over internet. While Encryption algorithms plays vital role in safeguarding the security of data. Elliptic Curve Cryptography (ECC) is a suitable public key encryption method which is used for key exchange, message encryption, for creating the digital signatures. This is considered as a decent alternative to RSA and other public key encryption algorithms which offers high level of security through smaller key sizes. While ECC is well-matched for applications which are run on devices with power and memory constraints like mobile (cell) phones and smartcards. Mobile SMS messages can been crypted by using ECC without corrupting the performance or presentation of mobile phones (or) devices. Elliptic curve analog of ElGamal system, the plaintext message which has been encoded into an elliptic curve earlier encryption. In this paper we discussed about different methods which has to be proposed in the literature for encrypting he characters in text message to an elliptic curve has to be examined and a new technique or process for encrypting the characters to the curve by using TDMRC code is projected. This TDMRC code is asymmetric key encryption algorithm and it is poly alphabetic. The nature of poly alphabetic has TDMRC code and it can be utilized to defeat the cryptanalysis which is based up on the letter regularities or frequencies .The projected encryption scheme will be reliable or consistent scheme and it will offer high security as the plaintext which is encrypted twice.

I INTRODUCTION

The security in computer networks is a topic of powerful research due to the increasing use of the computers or laptops in moderntimes and their interconnection between thenetworks of all kinds and sizes, regularlyby internet. By all of these possibilities we can exchange the information and accessing the data which are stored in various

Academic Year 2016-2017

Prediction of Tool Life –An Empirical Approach and Tool Wear Monitoring

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Abstract— *The* cutting tool is one of the basic elements of machining process. The tool material and its geometry are significant for successful machining. The life of cutting tool in metal cutting plays an important role in the quality and cost of product. The tool wear is also an important parameter in the theory of metal cutting and it is also significantly influenced by the cutting parameters like speed, feed and depth of cut. In this research work, an empirical model is developed for the prediction of cutting tool life in turning operation and also some indirect methods such as a neural network and finite element analysis were used to detecting tool wear. The metal turning has been performed on lathe machine using hardened steel and HSS as work piece and cutting tool respectively; it has been studied under varying cutting parameters. For developing the required empirical model linear regression, linear cross product regression, log transformed linear regression and log transformed cross product regression are employed. From the result it is observed that, the fitness value of log transformed cross product regression model for tool life is higher when compared with other model.

***Keywords*— Cutting parameters, tool life, HSS tool, neural network, finite element analysis, regression models.**

1. INTRODUCTION

Metals are shaped into usable forms through various process. Of these, some are called non-cutting processes,i.e., those in which no chip formation takes place and the metal is shaped under the action of heat, pressure or both. This category includes operations like forging, drawing, spinning, rolling, extruding etc. Against this, there are other processes in which the components are brought to the desired shape and size by removing the unwanted material from the parent metal in the form of chips through machining. This is termed as cutting shaping. A few of the important machining processes falling in this category are turning, boring, milling, rolling, planning, broaching etc. The ever increasing importance of machining operations is gaining new dimensions in the present industrial age, in which the growing competition calls for all the efforts to be directed towards the economical manufacture of machine parts. In this context, it is obviously of a vital importance to understand and practice the principles of metal machining very thoroughly in order to achieve the basic objectives of efficient and economical machining practice.

This paper consists of two manifolds. In the first stage the required empirical model is developed for predicting the tool life and for developing the required model, linear regression, linear cross product regression, log transformed linear regression and log transformed linear regression are employed. The values predicted from various empirical models are compared with experimental values and concluded that which model is best fit for the objective. In general, the metal turning experiments and statistical tests demonstrate that "the empirical models developed in this work are best fit with acceptable range of deviations". In the second stage indirect methods are suggested for tool wear monitoring. The primary goal of this work is to establish the process relationships for the process and to build an empirical model. This analysis focuses on the effects of the selected turning parameters on the cutting tool life in turning. The empirical models are developed to locally approximate the relationship between the outputs and inputs based on collected data. The Taylor's tool life equation (1) shows that the tool life 'T' and cutting speed 'V' are related to each other as,

$$VT^n = C \quad (1)$$

Where,

V = cutting speed
T = tool life
n= tool life exponent

Here the set of data is taken by changing the cutting speed and the process is continued as follows:

The above Taylor's tool life equation (1) is linearized to convert the nonlinear form of equation into linear form and rewritten on a log-log scale as,

$$\log V + n \log T = \log C \quad (2)$$

Therefore the Taylor's equation represents a straight line. In order to include the effects of feed rate 'f' and depth of cut 'd' in the above equation, it is generalized and the relationship (1) is of the form,

$$VT^{n_1} f^{n_2} d^{n_3} = C_1 \quad (3)$$

Where,n,n_1,n_2 and C_1 are the constants which depend on tool and work materials, tool geometry, types of coolants used etc.,

Since Taylor's equation does not fit the actual tool life data for many materials, with the experimental data it is analyzed to estimate these various parameters for the first order model and since the first- order model determines some statistical evidence of lack of fit a general second-order linear equation in the form of logarithmic terms has been

proposed with additional data collected i.e., the parameters in the first-order are estimated using multiple regression analysis of variance performed for this model reveals some lack of fit, so that the second-order model is developed on log-log scale (3). It is expressed as,

$$\log T = n_0 + n_1 \log V + n_2 \log f + n_3 \log d + n_{12} \log V \log f + n_{13} \log V \log d + n_{23} \log f \log d \quad (4)$$

where,

n_0, n_1, n_3, n_{12} , n_{13} , n_{23} are constraints determined from the experimental data by curve fitting.

For simplicity, the second order empirical model is postulated from the equation(3) as,

$$Tp = n_0 + n_1 x_1 + n_2 x_2 + n_3 x_3 + n_{12} x_1 x_2 + n_{13} x_1 x_3 + n_{23} x_2 x_3 \quad (5)$$

Where,

Tp = predicted value of tool life
x1,x2,x3 are cutting parameters

The experimental deviation or residual is the difference between the predicted and observed values of tool life.

In this project work, tool wear experiments are conducted on a turning machine tool equipped with dynamometers and spindle current meters. The data of various cutting conditions is generalized with a multi layer neural network model, which can predict the spindle current requirements, and cutting forces at any cutting state, nearly to the exact valves based on neural network outputs and it is possible to state the level of tool wear.

2. EXPERIMENTAL PROCEDURE

The required hard turning operations are performed on a lathe of 177.5 mm center height, 520 mm swing gap, 1600 rpm speed, 0.05-3.5 mm/rev of feed range and main motor power of 3.7 KW. The geometry of selected cutting inserts is 800 diamond shape with a 200 edge shape chamfer and 0.102 mm wide. The outermost layer of the work piece is turned off first by using mixed alumina cutting insert in order to avoid the hard turning of oxidized layer or the test cut suitable length is selected and the number of cuts vary depending upon the depth of cut, regular intervals of time, the tool wear and the surface roughness are measured and when the flank wear of the cutting tool comes to 200 microns, the turning operation is stopped because most of the tools fracture with a flank land measurement between 180 and 200 microns (0.18 mm and 0.2 mm)[1]. Similarly, the other turning operations with different cutting conditions are also performed with different inserts [2]. The flank wear and surface roughness values are measured at regular interval of time until the flank wear values are tabulated in Table 1 for all eighteen test conditions. The values of speed, feed rate and depth of cut are properly utilized for developing the empirical tool life mode. A series of experiments were conducted on a conventional center lathe at various values of operating parameters. High carbon steel (85C6) work pieces and HSS tool material have been chosen. Initially the grinded tool is considered to have no tool wear.

The dynamometers for the force measurements have been mounted through the tool post in spindle current is measured with the help of wattmeter. In this investigation, The H.S.S cutting tools are selected for the required turning operations. They are performed on eighteen engine crank pins, having same hardness values the different test conditions are shown in Table 1.

TABLE 1: EXPERIMENTAL TEST CONDITIONS AND OBSERVED DATA

Test Condition No	Speed in m/min	Feed in mm/rev	Depth of cut in mm	Flank wear in mm	Tool life in min
1	100	0.06	0.3	0.2	43.0
2	100	0.1	0.3	0.2	40.0
3	100	0.06	0.4	0.2	39.5
4	100	0.1	0.2	0.2	38.5
5	150	0.06	0.2	0.2	37.0
6	100	0.14	0.4	0.2	35.0
7	100	0.14	0.2	0.2	35.0
8	150	0.06	0.3	0.2	34.5
9	150	0.1	0.4	0.2	34.0
10	150	0.14	0.4	0.2	33.0
11	150	0.1	0.3	0.2	32.5
12	200	0.06	0.3	0.2	31.0
13	150	0.14	0.2	0.2	31.0
14	200	0.06	0.4	0.2	28.0
15	200	0.1	0.4	0.2	27.5
16	200	0.1	0.2	0.2	28.5
17	200	0.14	0.3	0.2	25.5
18	200	0.14	0.2	0.2	25.0

3. RESULTS AND DISCUSSIONS

The effect of each individual factor interactions [3] on tool life are examined with a reasonably small amount of time and cost. This research is able to include three parameters simultaneously with more accurate experimental data.

By using one of the optimization techniques, Taguchi's design of experiment[4], the best values of speed as 100m/min, feed rate as 0.06 mm/rev and depth of cut as 0.2 mm are identified from the data shown in the figure. With these best values of parameters, a validation experiment is conducted and the tool life is getting improved from 43 min to 43.25 min which is better than that of any other experimental values in the table.

From the following table the Linear Regression for tool life is developed as,

$$TLR = 56.649 - 0.113\,V - 59.788\,f - 1.985\,d \quad (6)$$

The percent deviations [5] between the values of tool life with various models[5] in all the test conditions can be

Experimental Investigations on four stroke Diesel Engine by using Watermelon Seed Oil Methyl Ester as a Biodiesel

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***Abstract*— The increasing industrialization and motorization of the world has led to a steep rise for the demand of petroleum products. In the wake of this situation, there is an urgent need to promote use of alternative fuel which must be technically feasible, economically competitive, environmentally acceptable and readily available .The present study covers the various aspects of biodiesels fuel derived from crude watermelon seed oil and performance and emissions study on four stroke compression ignition engine with watermelon seed oil.**

In the initial stage the tests are conducted on the four stroke single cylinder water cooled direct injection diesel engine with constant speed by using diesel and base line data is generated by varying loads with constant speed.

In second stage, experimental investigation has been carried out on the same engine with same operating parameters by using the watermelon seed oil of methyl esters in different proportions as WM10, WM20 and WM30 to find out the performance and emission. The performance and emission parameters obtained by the above tests are compared with the base line data obtained earlier by using diesel and the blend WM30 shows the better performance compared to other blends WM10, WM20 in the sense of increased in brake thermal efficiency, decreased brake specific fuel consumption, decreased oxides of nitrogen and carbon monoxide and increased carbon dioxide.

***Keywords*— Bio fuel, BTE, BSFC, Watermelon seed oil of methyl esters.**

1. INTRODUCTION

Metals are shaped into usable forms through Energy is key input for technological, industrial, social and economical development of a nation. Five generations (125 years) ago, wood supplied up to 90% of our energy needs. Due to the convenience and low prices of fossil fuels wood use has fallen globally. The present energy scenario now is heavily biased towards the conventional energy sources such as petroleum products, coal, atomic energy etc, which are finite in nature besides causing environmental pollution. Of the available energy, the present energy utilization pattern is heavily biased for meeting the high energy requirement in urban and metropolitan cities.

The extensive use of energy operated devices in domestic, industrial, transport and agricultural sectors in urban and rural areas have resulted in overall economical development

of the society. The electricity available for farming operations and in rural and urban areas is been generated using the fossil and static energy resources such as petroleum oil, coal and atomic energy and to a limited extent by hydropower. These all sources have a great influence on our economy and environmental aspects. These have resulted in serious considerations for the use and availability of various energy resources. The types of Alternative fuels are such as Solar Energy, Alcohols - ethanol and methanol, Compressed natural gas (CNG), Electricity stored in batteries, Hydrogen (considered a special gas), Liquefied natural gas (LNG), Liquefied petroleum gas (LPG),Bio-diesel - diesel fuel made from plant oil, seed oil or animal fat.

Bio-diesel contains no petroleum, but it can be blended at any level with conventional diesel to create a bio-diesel blend. It can be used in diesel engine with little or no modifications. Bio-diesel is simple to use, biodegradable, nontoxic, and essentially free of sulphur and aromatics.

1.1.1. BIO-DIESEL USES

Growing environmental awareness and increase in fuel prices, it has become the need of the hour to consider alternate energy and fuel source. Biodiesel fuel is the alternative which is becoming more and more popular today, because bio-diesel is a cleaner buring diesel fuel, made from 100% natural, 100% renewable resources. The bio-diesel is used in various forms such as Bio-diesel rental car, Electricity Generation, Transportation industry, Agriculture Marine Vehicles Tax incentive, Lubrication Additive Cleaner Environment.

1.1.2. MATERIALS AND METHODS

In this project we tried to investigate the potential use of Water melon seed oil Methyl Esters as Bio-diesel. During the course of this project we have actually prepared Water melon seed oil Methyl Ester (WSOME) (pure bio-diesel or B100) as shown in Fig 1.Various experiments were conducted on WSOME and the results were recorded. We collected the results of Water melon Seed Oil Methyl Ester from various journals and research papers. The results of WSOME were compared with conventional diesel.

Influence of Taper Cylindrical Tool Pin Profiles on Microstructure and Mechanical Properties of Friction Stir Welded Copper Weldments

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***Abstract*— The effect of taper cylindrical tool pin profiles on microstructure and mechanical properties of friction stir welded copper was studied. The different tool pin profiles such as taper cylindrical by varying Dynamic Volume (DV) to Static Volume (SV) ratio having constant shoulder diameters were used to fabricate the joints. Tool rotational speed and traverse speeds were fixed at 900 rpm and 40 mm/min respectively. The experimental results revealed that the sound defect free joints could be obtained by using taper cylindrical tool pin profiles and the fracture locations were outside the weld zone on the retreating side. From the investigation it was found that the joints made by using taper cylindrical pin profile (TC) with DV/SV (1.56) resulted in better mechanical properties compared to TC pin profile with DV/SV (1.09) which is due to dynamic to static volume ratio is 1.56. The tensile properties of all weld joints showed a relative correspondence to the variation of the hardness in the weld zone. The joint efficiency of TC having DV/SV ratio with 1.56 is more (80%) of the base metal compared to other pin profile. The observed results were correlated with the microstructure and fracture features.**

***Keywords*— Copper, Friction Stir Welding, Dynamic to Static Volume ratio, Microhardness, Microstructure.**

1. INTRODUCTION

Friction stir welding(FSW) is a solid state joining in which a rotating tool pin is passed along the recirculating flow of plasticized material near the tool surface, this plasticized material is subjected to extrusion by the formation of the stir zone(SZ) and it is effected by the material flow behavior under the action of rotating tool. FSW is performed at a temperature lower than the melting point of the material and it involves a severe plastic deformation and dynamic recrystallization occurs in the SZ. copper and its alloys are most important engineering materials due to their good ductility, corrosion resistance, electric conductivity, and thermal conductivity [1].Welding of copper is usually difficult by conventional fusion welding processes because of copper has high thermal diffusivity, which is about 10-100 times higher than steels and nickel alloys. The required heat input is much higher than any other material, and weld speeds are quite low [2]. To overcome these problems, the FSW which is one of the welding techniques is applied to the joining of copper. Recently, the copper containment canisters for nuclear waste have been manufactured via FSW the Swedish Nuclear Fuel and Waste Management Co.[3,4] Furthermore, Okamoto et al.[5] reported that the backing plates of copper alloy, used for the sputtering equipments, have been successfully welded by FSW. Similarly, Lee et al.[6] achieved defect-free joining of 4-mm-thick copper plate at a rotation rate of 1250 rpm and a traverse speed of 61 mm/min. The investigation by Hautala and Tiainen [7] also indicated that 5-mm-thick copper plates could be successfully welded only under rotation rates more than 800 rpm.

The main objective of this investigation is to develop TC tool pin profiles by varying DV to SV ratio to fabricate copper weldments. The observed mechanical properties are correlated with microstructure and fracture features.

2. EXPERIMENTAL PROCEDURE

The base metal copper sheet of 3mm thick and size 200 mm x 100 mm was welded by butting two plates and stirring them together with a rotating tool assembly by using vertical milling machine. H13 tool steel is chosen as tool material because of its high strength at elevated temperature, thermal fatigue resistance and low wear resistance. The diameter of the shoulder and pin used were 24mm, 8mm respectively and length of the pin is 2.8 mm. A constant axial force is applied for all the FSW experiments. The FSW joints were designed and fabricated with tool pin profiles such as taper cylindrical with DV to SV of 1.56 and taper cylindrical with DV to SV of 1.09 and found to be defect free welds, the surface morphologies of the FSW joints were shown in Fig. 2.1. Based on previous work, the trial experiments were conducted with taper cylindrical tool pin profile on copper by varying tool rotation speed and welding speed, from the results the optimum rotational speed and welding speeds are found to be 900 rpm and 40 mm/min respectively; which resulted in better mechanical properties [8]. The welding joints were sectioned and then machined to the required dimensions to prepare tensile specimens and impact specimens as per ASTM standards in the transverse direction from the welded joints and are shown in Fig2.2. Tensile test was carried out on servo controlled UTM. Tensile specimens undergo deformation and the specimen

finally fails after necking and the load versus displacement plots were recorded. The tensile properties such as yield strength, ultimate tensile strength and percentage of elongation have been evaluated. Charpy impact test is conducted at room temperature. For this investigation various joints are fabricated and it is found that the joints are free from external defects.

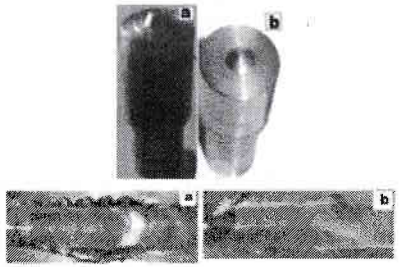

Figure 2.1 Surface morphologies of the of FSW joints madeby

(a)Taper cylindrical with DV to SV ratio of 1.09 and (b) Taper cylindrical with DV to SV ratio of 1.56 pin profiles

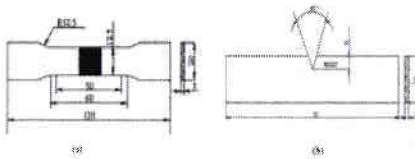

Figure 2.2. Schematic Diagram of (a) Tensile Specimen and (b) Impact Specimen

3. RESULTS AND DISCUSSIONS

A. Microstructure Studies

The specimens for metallographic examination were sectioned to the required size from the FSW joints transverse to the welding direction, polished and then etched with a solution of 100 ml distilled water, 15 ml HCl and 2.5 g ferric chloride, micro structural changes from the weld zone to the unaffected base metal were examined with optical microscopy (Model: NIKON; make Epiphot 200). The microstructure of the friction stir welded copper joint consists of different zones such as (a) base metal (BM) (b) thermo mechanical affected zone (TMAZ) at advancing side, (c) stir zone (SZ) and (d) thermo mechanical affected zone at retreating side. The formation of above regions is affected by the material flow behaviour under the action of rotating non-consumable tool. The microstructure of the stir zone by using taper cylindrical with dynamic to static volume ratio is 1.56 pin profile tool was observed to be very fine and equiaxed grains compared to DV to SV ratio 1.09 which is shown in Fig 3.1. This refinement is due to the dynamic recrystallisation caused by simultaneously received plastic shear deformation and frictional heat [9,10]. Dynamic recrystallization is of great industrial interest due to the new grains being smaller than the initial grains and thereby having improved mechanical properties at room temperature.

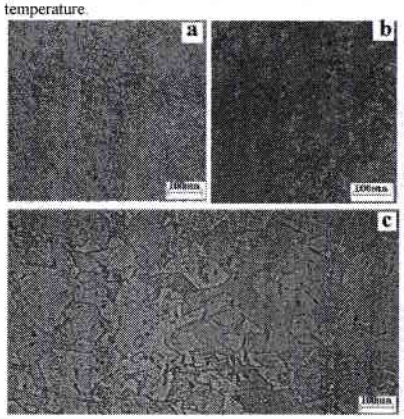

Figure.3.1 Microstructure of weld zones of processed samples by various pin shapes (a) TC with DV to SV ratio of 1.56 (b) TC with DV to SV ratio of 1.09 (c) Base metal

B. Mechanical Properties

Mechanical properties such as yield strength, tensile strength and percentage of elongation have been evaluated. At each condition three specimens were tested and average of the results of three specimens is presented. Table 1 shows the tensile properties for base metal and Table 2 shows mechanical properties of the copper weldments. The joints fabricated by taper cylindrical pin profiled with DV to SV ratio of 1.56 tool exhibits better tensile strength compared to the joints made by same tool pin profile with DV to SV ratio of 1.09, this may be due to the effect of grain refinement and annealing during the welding process. The grains formed in the welded joints made by taper cylindrical with DV to SV ratio of 1.56 pin profile tool are much finer than taper cylindrical pin profile tool with DV to SV ratio of 1.09. The percentage of elongation is lower than that of the base metal due to the increase of deformation resistance which is

Smart Health Monitoring System of Patient Through IoT

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***Abstract*— Present day's IoT brings the gadgets together and assumes a fundamental part in different methodologies like smart home mechanization, savvy urban areas, vehicle parking, traffic control, brilliant industries, smart environment, agribusiness fields and patient health monitoring system and so on. One of the approaches is to monitor the health state of the patient and screen it to doctors or paramedical staff through the IoT, as it is hard to screen the patient for 24 hours. So here the patient health condition or status i.e. Pulse rate, Respiratory rate, Body Temperature, Position of the body, Blood glucose, ECG and so on can be measured by utilizing the Non-invasive sensors. These sensors are associated with the Arduino Uno board, it gathers the information i.e. biomedical data from the sensors and the detected biomedical information can be transmitted to the server. The "Thingspeak" named new cloud is utilized here to place the detected information into the server. From this server the information can be envisioned to the specialists and other paramedical staff by Thingspeak android app. In this way by utilizing this Smart health monitoring system diminishes the exertion of specialists and paramedical staff to screen the patient for 24 hours and furthermore lessens the time and cost of support.**

Keywords—Internet of Things (IoT), Arduino Uno, Thingspeak.

I. INTRODUCTION

India confronting an issue of absence of Doctors, from the most recent report of the Medical Council of India (MCI) we have 10.4 lakh specialists enlisted in Register of India Medical. In that 10.4 lakh, the 80% of specialists presently serves the patient at same time. It is 8.32 lakh specialists may be truly available for dynamic support to patient. In India specialists and patient proportion is around 1:1568 at odds with the World Health Organization standard of 1:1000. The 60,000 doctors and 28,000 post graduation doctors are moved on from different colleges once a year.

There are around 11.65 lakh medical caretakers enlisted in Nursing Council of India. In that just 42% are in dynamic service. As per the suggests an attendant patient proportion of 1:1 in intensive care unit, 1:3 in the general care unit and 1:6 in the emergency ward. On the off chance 45 nurses are require for the every 15 patient, as 15 will work in every shift. You additionally require 30% leave save. This is the reason there is an immense deficiency of medical attendants. We require double the current number of nursing experts to adjust the diminishing patient-nurture proportion.

In this way, it is clear there is just a single doctor for 2000 patients and requires twofold sum paramedical staff for present existing staff. It is impractical to rise to the patient and specialist proportion and multiplying the paramedical staff. Smart Health Monitoring System through IoT [1] approach is utilized to decrease the endeavors of the doctors and paramedical staff [12]. This strategy is likewise comfort for the patient since it lessens the enormous hardware, which presently utilized as a part of ICU's.

II. RELATED WORK

Wireless health monitoring system (WHMS) has drawn extensive considerations from the examination group and also industry amid the most recent decade. Various and yearly expanding innovative work endeavors have been posted in the written works. We have constrained this push to incorporate just a portion of the extremely late related works. Continuous portable human services framework for observing the elderly patients from indoor or outside areas has been displayed in [2]. DONG Jun [4] additionally depicts the design of a wearable ECG screen that is quiet area free and gives persistent checking. The signs from the sensors are transmitted utilizing Bluetooth to the PDA in its range, which can thus be sending to the goal through web.

III. PROPOSED DESIGN

The general design of IoT applications can be partitioned into three layers: the detecting layer, the transport layer and the application layer.

In the Detecting layer to measure the body temperature we utilized DS18B20 body water resist body temperature sensor. To measure the heart beat Rate of the patient by utilizing pulse sensor amped is utilized. It has its own particular visualizer to picture the heart beat waveform, BPM and IBI. To recognize the patient's body position we utilizing accelerometer ADXL335. It gives the data about whether the patient is

Automatic Oxygen Level Control of Patient Using Fuzzy Logic and Arduino

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***Abstract*— Automation is one of the considerable developments in the new innovations. It is best technique to execute in the fields of medical i.e. observing the patient condition. In this paper oxygen levels are controlled precisely by utilizing fuzzy logic. Here the beat rate and the ECG qualities are chosen the pressure variation of the oxygen. To quantify the Heart beat and blood oxygen levels we used Pulse Sensor Amped. The ECG signs can be caught by utilizing the AD8232 ECG sensor. The Heartbeat, SPO2 levels, and ECG sensors are associated with the Arduino Uno board. The Bio-data from the sensors, which is associated with Arduino Uno, is given to the MATLAB through Serially. The fuzzy logic is utilized to control the Oxygen levels at the patients end. This kind of automated oxygen level control is much useful to the patients and the paramedical staff viably to observe the patient condition.**

Index term— fuzzy logic, ECG, SPO2, Arduino Uno, MATLAB..

1. INTRODUCTION

As we know that due to the lack of medical staff in hospitals, every day we are losing lot of lives and to decrement this number, here we are proposing a method so that automation of the patients health is done . Even the level of oxygen can be monitored 24/7 and the pressure of the oxygen given to the patient is also varied with respect to pulse rate and as well as by oxygen level in patient body.

Oxygen is used as the main component for human respiratory system for heart beating and even for other actions which are necessary for survival of humans. So initially the Air taken in by the human is purified and oxygen is taken where as all the other unnecessary gases are leaved out. So oxygen plays a vital role in entire respiratory system and working of a human body. It is used in many ways as in medical treatment for both chronic and acute cases, in hospitals, in many other applications such as in aeronautics, in space where oxygen is not available it is carried in cylinders for survival of humans. [7]

The problems occurring on the human respiratory system are mainly due to lack of oxygen which occurs due to a long-term effect on lungs due to smoking or asthma such that they require additional oxygen to breathe, in some extreme conditions or even their entire life, as per health condition. The patient's health condition can be checked, basing on the percentage of oxygen saturation levels in blood. Where the normal percentage ranges above 95% and if the percentage of oxygen in blood is less than 90 % then the patient's condition can be termed as ill heart condition so that we can take an action of supplying sufficient oxygen to the patient.

So when we monitor the heart condition, if any abnormal condition of heart is observed, we can know that the oxygen supply to the heart is week and then we supply sufficient oxygen to the body for normal operation of the respiratory system. So here we implement a system such that the oxygen is supplied to the body as per the requirement, based on the percentage of oxygen in blood and pulse rate. [2], [3]

So here we are going to implement a system so that the pressure going out from the oxygen mask to the patient body can be varied based upon the parameters that are pulse rate and the percentage of oxygen in the blood. So here we are using a new digital logic technique known as fuzzy logic technique such that the accurate values can be obtained and we can implement a system basing on these values in between from 0 to 1. In general a digital logic consists of only two values High (1) and Low (0), but here the fuzzy logic determines the values even in between 0 and 1. Fuzzy logic [1] is based upon the degrees of truth rather than the True or false.

So fuzzy logic is based on mainly three processes which can be implemented in medical diagnosis they are: [6], [11]

- 1st we fuzzify all the input variables into fuzzy membership functions at first stage
- In second stage we apply all the rules into the rulebase and execute to compute the output functions.
- And finally we apply De-fuzzify function such that the output get into crisp output values.

2. RELATED WORK

In evaluating the solace level of the room, next to no work has been done with a specific end goal to actualize the framework. Wang and Jin [10] built up a model which gave ideal control of VAV ventilating framework utilizing

Electroencephalogram-Based OpenBCI Devices for Disabled People

V.R.R. Samson, B. Praveen Kitti, S. Pradeep Kumar, D. Suresh Babu and Ch. Monica

Abstract Each physical development we make is swift in the cerebrum by neural system handling. With the assistance of new hardware and advancements in both cerebrum imaging and cerebral neuroscience, it is conceivable to pursue and record these procedures. In this paper, we have utilized an economical gadget, i.e. OpenBCI Ganglion to control the home appliances or any type of electronic device for physically incapacitated individuals. The EEG signals are caught from client's cerebrum action utilizing OpenBCI Ganglion through "gold cup electrodes (GCE)." The EEG signals that are produced at various level of recurrence, likewise the eye movement, concentration are handled utilizing Arduino Uno which is used to control electronic devices. The BCI helps handicapped to make utilization of the gadgets and applications through their mental exercises. By this, individuals believe that BCI innovation is gift for, who might experience the ill effects of neuromuscular issue.

Keywords Brain–computer interface (BCI) · Electroencephalogram (EEG) · OpenBCI Ganglion · Gold cup electrodes (GCE)

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S.C. Satapathy et al. (eds.), *Proceedings of 2nd International Conference on Micro-Electronics, Electromagnetics and Telecommunications*,
Lecture Notes in Electrical Engineering 434, DOI 10.1007/978-981-10-4280-5_24

Gesture recognition is a topic in computer science and language technology with the goal of interpreting human gestures via mathematical algorithms. Gestures can originate from any bodily motion or state but commonly originate from the face or hand. Current focuses in the field include emotion recognition from the face and hand gesture recognition. Many approaches have been made using cameras and computer vision algorithms to interpret sign language. However, the identification and recognition of posture, gait, proxemics, and human behaviours is also the subject of gesture recognition techniques. In this project hand is used as a remote. The e-gadgets are controlled by the gestures of human hand. The hand gestures are recorded by a camera. The unique gesture is allocated for different e-gadgets.

Key Words:HAND GESTURE, IR, WEB CAMERAAURDINO.

46. IMPLIMENTATION OF CRYPTO SYSTEM BY USING VHDL

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This paper focuses on the realization of an efficient logic design of a crypto system. This crypto system consists of convolutional encoder and Viterbi decoder with a constraint length,K = 3and a coderate (k/n) of ½ using field programmable gate array (FPGA) technology. The adaptive Viterbi decoder with convolution encoder is a powerful forward error correction technique which is particularly suited to a channel where the transmitted data is corrupted by additive white Gaussian noise. Viterbi decoder is designed for faster decoding and less routing area with a special path management unit. This system is realized using VHDL using Xilinx ISE 14.5.

Key Words : Convolutional Encoder, Viterbi decoder , VHDL

47. DESIGN OF TRIPLE-BAND MICRO-STRIP PATCH ANTENNA USING U-SLOTS

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The general method for designing triple band micro-strip patch antenna using U-slots is described. A tri-band U-slot micro-strip patch antenna is designed and simulated in this paper. When the patch of the micro-strip antenna is cut in the shape of a U-slot, a notch is introduced into the matching band and if another U-slot is cut in the same patch then, the antenna becomes a triple-band antenna. It is observed that the patterns and gain of the triple-band antenna is similar to a broadband antenna. The design and simulations of the antenna are implemented using High Frequency Structure Simulator Software (HFSS).

Keywords: Micro-strip antennas; U-slot; HFSS.

48. DUAL-BAND MICRO-STRIP PATCH ANTENNA USING U-SLOTS

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The common method of designing of dual band patch antenna by using u-slots is explained. A patch antenna consists of one or more patches. When one of the patch is cut in the shape of a U-slot a notch is introduced into the matching band, and it results a dual-band micro strip patch antenna. This method is applicable to Line-fed. It is esteemed that the patterns and gains of the original broadband antenna is equal to the dual-band antenna. This patch antenna is designed by using HFSS software and the simulated results are return loss, VSWR, reflection coefficient.

49. FACE DETECTION BASED ATTENDANCE MANAGEMENT SYSTEM

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In this paper we propose a face detection based attendance management system. Face Detection and Recognition is an important area in the modern period. Maintaining records of students along with class attendance that requires significant amount of time and efforts for management. Automated Attendance Management System performs the daily activities of attendance analysis, for which face recognition is an important aspect. This paper also proposes the techniques to be used in order to handle the threats like spoofing. When compared to traditional attendance marking this system saves the time and also helps to monitor the students.

Keywords- Face Recognition, monitor, spoofing.

50. FPGA IMPLEMENTATION OF LDPC DECODER USING MIN-SUM ALGORITHM

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Low density parity check (LDPC) codes are linear block codes used for error detection and correction mostly in high speed digital communication systems like digital broadcasting, optical fiber communications and wireless local area networks. LDPC Code is a type of Block Error Correction code discovered and its performance very close to Shannon's limit .Good error correcting performance enables reliable communication. The project is about FPGA implementation of LDPC encoder and decoder. A variable node processing unit (VNPU) and a check node processing unit (CNPU) are designed in order to be used in low density parity check (LDPC) decoding by the min-sum algorithm (MSA). This blocks are simulated using VHDL Xilinx 14.7.

51. IMAGE BASED CURRENCY RECOGNITION SYSTEM

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The people may not recognize the original currencies from different countries. So, to solve this difficulty to the people, the system called "Image based currency recognition system" is helpful. However, the currency recognition system based on image analysis is entirely not sufficient. But, the proposed concept which is based on image processing will makes the process automatic and also robust.

52. IMPLEMENTATION AND SYNTHESIS OF 32 BIT REVERSIBLE ALU BY USING XILINX 14.7

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In the current world, Arithmetic Logic Unit (ALU) is a standout amongst the most critical parts of any framework and is utilized as a part of numerous machines like number crunchers, phones, and PCs etc. An ALU is a multi-useful circuit that restrictively performs one of a few conceivable capacities on two operands A and B relying upon control inputs.This paper proposes the outline of programmable reversible logic gate structures, directed for the ALU usage and their utilization in the acknowledgment of an effective reversible ALU. Reversible or data lossless circuits have applications in computerized flag handling, correspondence, PC representation and cryptography. This ALU comprises of thirteen operations, 5 math, 4 intelligent operations and 4 moving operations. Every one of the modules are being composed utilizing the fundamental reversible entryways. Utilizing reversible logic entryways rather than customary logic AND/OR gates, a reversible ALU whose capacity is the same as conventional ALU is built. Contrasting and the quantity of information bits and the disposed of bits of the conventional ALU, the reversible ALU fundamentally lessen the utilization and loss of data bits. The proposed reversible 32-bit ALU lessens the data bits utilize and misfortune by reusing the logic data bits coherently and understands the objective of bringing down influence utilization of logic circuits. Programmable reversible logic gates are acknowledged in VHDL by utilizing XILINX 14.7

Keywords – ALU, Digital Signal processing, power Consumption, Reversible logic gates

53. IMPROVEMENT OF BER IN WLAN USING MIMO-OFDM

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The Multiple Input Multiple Output and Orthogonal Frequency Division Multiplexing technology is used for developing various wireless communications. The combination of MIMO-OFDM gives improvement in Bit Error Rate, capacity and reliability. To achieve high throughput, MIMO with greater form of modulation is used. The MIMO-OFDM technology in wireless helps to use maximum bandwidth with less cost. Space time block coding along with MIMO gives improvement in Bit Error Rate. The performances of the various systems are evaluated by comparing the BER and SNR.

Keywords: MIMO, OFDM, BER, BPSK, QPSK, QAM,

54. INTERACTIVE HOME AUTOMATION USING RASPBERRY PI THROUGH INTERNET OF THINGS

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As of late, the home condition has seen a fast presentation of system empowered computerized innovation. This innovation offers new and energizing chances to expand the network of gadgets inside the home with the end goal of home mechanization. Home computerization alludes to control of home machines utilizing data innovation. There are loads of gadgets available that permit you to screen your home from a focal interface. Accordingly the officially existing techniques for the automation of home are Bluetooth, GSM based innovation. However, with the assistance of quick development of the Internet, there is the possibility to control and mechanize the home apparatus utilizing it. It is accomplished by interfacing the web with implanted frameworks. This paper manages actualizing the Raspberry pi based intelligent home automation through IOT and to quantify temperature, moistness, soil dampness and status of rain in a rural situation .Through this venture we ready to secure our home, decrease the wastage of water, and so on. File Terms-Raspberry Pi, Home automation, Agricultural condition, MSP430, web server, security reason.

Keywords-Raspberry pi, Web page, Home appliances, Relay circuit.

55. A GAUSSIAN PYRAMID BASED IMAGE FUSION TECHNIQUE IN THE DCT DOMAIN

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The aim of image fusion is to combine similar information from multiple images into a single image. The methods which are based on discrete cosine transform (DCT) of image fusion are more competent and time-saving in real-time systems using DCT based standards of still Image. The existing DCT based methods are suffering from some side effects like blurring which can reduce the quality of the output image. To address this issue, the paper proposing new method for image fusion using Gaussian pyramid in DCT domain. The pyramid fusion provides better fusion quality. The execution time is extremely reduced, compare with existing methods. This method can be used for multi model image fusion as well as fusion of complementary images. The algorithm given in proposed system is simple and easy to implement. Also, it could be used for real time applications. The performance of our method is analyzed and compared with other image fusion methods. Experimental results show that there is no difference between the result of our method and water based image fusion result. But our algorithm is carried out in DCT domain; it is efficient in processing time and simple.

Key words: Image fusion, DCT, Wavelet transform, Gaussian pyramid.

56. PATIENT MONITORING SYSTEM USING GSM

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In past patient experiencing any malady or physiological issue is hard to screen understanding wellbeing. Presently a day's patients are observed persistently through remote system. In ICU's medical attendants or other guardian may not be accessible for steady observing of patient wellbeing because of this patient wellbeing gets to be distinctly basic condition. To maintain a strategic distance from this persistent observing of patient wellbeing utilizing remote system this gadget is created. Objective of this framework is to screen patient's pulse, ECG/EMG estimation, body temperature estimation and body position estimation. These all well being information persistently read by Arduino Uno Processor. Processor is associated with various sensors and these sensor values constantly read and show these wellbeing information on PC. On the off chance that sensors estimation of patient changes to variation from the norm level then read estimations of patient are informed to specialist's portable through GSM. It screens quiet constantly at anyplace and at whatever time.

Keywords: Blood Pressure, ECG/EMG Measurement, Body Temperature Measurement, Body Position Measurement.

57. AN ULTRAWIDEBAND ANTENNA DESIGN FOR SCIENTIFIC AND MEDICAL APPLICATIONS

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An U-shaped ultra wideband antenna for dual band applications are proposed. The UWB antenna consists of U-shaped patch on one side and finite ground plane on the other side. The demonstrated antenna is placed on a FR-4 Epoxy substrate. The proposed antenna will designed to operate on (5.0-10.3) GHz frequencies at the return loss is less than -10dB. At particularly this frequencies scientific, medical and UWB applications are highly accessible. Large bandwidth of UWB antenna can be employed for rate of data transfer. The simulations and measurements are presented for the proposed antenna.

Index Terms: Ultra wideband antenna (UWB), Rate of data transfer.

58. VLSI DESIGN OF A LOW POWER SOLS BASED FM0/MANCHESTER ENCODING TECHNIQUE USING CMOS TECHNOLOGY

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An implementation of Manchester coding is being described in this paper. Manchester coding technique is a digital coding technique in which all the bits of the binary data are arranged in a particular sequence. The Intersil HD-15530 is a high performance CMOS device intended to service the requirements of MlL-STD-1553 and similar Manchester II encoded, time division multiplexed serial data protocols. This LSI chip is divided into two sections, an Encoder and a Decoder. These sections operate completely independent of each other, except for the Master Reset functions. This circuit meets many of the requirements of MIL-STD- 1553. The Encoder produces the sync pulse and the parity bit as well as the encoding of the data bits. The Decoder recognizes the sync pulse and identifies it as well as decoding the data bits and checking parity. This integrated circuit is fully guaranteed to support the 1MHz data rate of MlL-STD-1553 over both temperature and voltage. It interfaces with CMOS, TTL or N channel support circuitry. The HD-15530 can also be used in many party line digital data communications applications, such as an environmental control system driven from a single twisted pair cable of fiber optic cable throughout the building. The functions of the encoder section of the MED include a micro processor interface, parallel to serial conversion, frame generation, and NRZ to Manchester encoding. This circuitry can run very fast since it does not require a high-frequency clock. The frame format used is similar to that of a UART. The Manchester decoder limits the maximum frequency of operation of the MED, since it uses a high-frequency clock. The receiver circuitry is more complex, since clock recovery and center sampling is done. Additional receiver functions are frame detection, decoding of Manchester to NRZ, serial to parallel conversion, and a microprocessor interface.

Keywords: Manchester coding, Encoder, Decoder, NRZ, Moore's law, UART, clock frequency

59. WITRICITY BASED ON EMBEDDED SYSTEMS

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Wireless Power Transfer (WPT) means transmission of power to a device without using wires. Wireless power transfer is commonly known by many terms, including inductive power transfer, inductive coupling and resonant power transfer. Wireless power transfer is becoming popular for inducting charging of consumer electronics and even for transmission of electrical energy .The wireless charger works mainly on the principle of inductive coupling. With this idea of inductive coupling, we are trying to transfer electricity wirelessly to charge low power devices like mobile phones. WITRICITY based products are being designed with applicable safety standards and regulations. On the other hand, power loss of this technology is very less as compared to wired electricity transmission. Wireless power transmission is very efficient, reliable and it has low maintenance cost.

Keywords- ARM controller, magnetic coils, mobile phone.

60. A HYBRID STEGANOGRAPHY AND CRYPTOGRAPHY WITH ANALYSIS AND SIMULATION

80. FACIAL EXPRESSION IDENTIFIER

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Face detection and expression identification is the one of the present point in the security field which gives answer for different issues. Some traditional problems, like varying poses, different lighting and expressions for face recognition is to be considered. For the any face and expression identification framework database is the most imperative part for the correlation of the face elements. For database creation features of the face are computed and these elements are store in the database. This database is then use for the assessment of the face and expression by utilizing distinctive calculations. In this paper we are going actualize a productive technique to make face and expression highlight database and after that this will be utilized for face and emotion recognition of the individual. For distinguishing face from the input image we are utilizing Viola-Jones face location calculation and to assess the face and expression discovery KNN classifier is utilized.

Keywords- Face Detection, Facial Expression Recognition, Feature Extraction, Viola-Jones algorithm, KNN Classifier.

ISBN 978-81-904760-9-6

2016 International Conference on Innovations in information Embedded and Communication Systems (ICIIECS'16)

Development and Analysis of Elliptic Function Microstrip Lowpass Filter using Artificial Neural Networks

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Abstract — **RF filters play a vital role in many RF/microwave applications such as wireless communications, wireless sensor/Radar systems etc. In this paper the design and analysis of 11th order microstrip elliptic function lowpass filter is proposed at a cutoff frequency of 1GHz. The proposed filter gives a pass band ripple of 0.2 dB and a minimum stop band attenuation of 30 dB and is fabricated using microstrip structure with a relative dielectric constant of 3.2. The Scattering parameters (S-Parameters) of the proposed filter are studied using the powerful computational tool Artificial Neural Network (ANN). Performance of the proposed model is evaluated in terms of various parameters like average, maximum estimated error, computational speed and accuracy. The results (S-parameters) obtained from the ANN model are compared with the measured and EM simulated results.**

Index Terms - **Elliptic function microstrip low pass filters, ANN models, S-parameters, Training Algorithms**

I. INTRODUCTION

Lowpass filters are constructed using TEM structures such as coaxial lines, strip lines and microstrip lines. Microstrip filters are used in communication systems due to their small size, light weight and low cost. In microstrip line lowpass filters, the shunt capacitors are realized by very short sections ($<< \lambda g/4$) of relatively low characteristic impedance, and the series inductors by short sections ($< \lambda g/4$) of relatively high characteristic impedance. Conventional microstrip low pass filters such as stepped impedance filters, open-circuited stubs and semi lumped (Elliptic function) filters having finite frequency attenuation poles are widely used in many microwave applications [1-2]. Usually, the equivalent circuit model is used for the design of such filters. However, the accuracy of the equivalent circuit model is not always good enough. The lowpass filter can also be designed and analyzed by using various electromagnetic (EM) simulators, such as Ansoft, Microwave Office, CST, HFSS etc.,. An EM simulator can model this lowpass filter more accurately as it takes into account of the dispersion and mutual coupling effects ignored in an equivalent circuit model. However, EM simulation is often computationally intensive and time consuming, especially for the design adjustment and optimization.

Various LPFs with different techniques and methods are available in the literature [3]. Defect Ground Structure (DGS) based LPFs [4-7] with different specifications seems to be the best in terms of performance and compactness. However, they require large number of design parameters. Elliptic function microstrip LPF is more preferred compared to the stepped impedance and open circuited stub microstrip LPFs due to its sharper cutoff frequency. In order to enhance bandwidth with smaller size of the filter, the elliptic function LPFs are modified with different resonators namely semi-hairpin [8], circular hairpin [9], and modified hairpin [10].

Artificial Neural Networks (ANNs) are information processing systems with their design inspired by the studies of the ability of the human brain to learn from observations and to generalize by abstraction [11]-[12]. ANNs can be used in many areas such as pattern recognition, speech processing, control, biomedical engineering etc., because of its ability to learn any

arbitrary nonlinear input–output relationships from the corresponding data. ANNs can also be applied to RF and microwave Computer-Aided Design (CAD) problems as well. A neural network model for microwave device/circuit can be developed from measured/simulated microwave data, through a process called training. Once the ANN model is fully developed, the computation time is usually negligible and much faster than any single full-wave EM simulator. Though a considerable effort is required in developing an ANN model, it is worthy doing so if repeated design analysis and optimization is required.

This paper presents the design and analysis of microstrip elliptic function lowpass filter using microstrip realization at 1GHz [13]-[16] and proposes a simple ANN model to determine the magnitude variations of scattering parameters (S-parameters) of the proposed filter at various frequencies. Performance of the proposed model is evaluated in terms of various parameters like average & maximum estimated error, computational speed and accuracy. The results (S-parameters) obtained from the ANN model are compared with the measured and EM simulated results.

II. DESIGN OF ELLIPTIC FUNCTION LOWPASS FILTER

In order to obtain a sharp cut-off frequency for a given number of reactive elements, it is desirable to use a filter structure giving infinite attenuation at finite frequencies. A prototype of this type may have an elliptic function response. The lowpass filter giving elliptic function response is shown in fig.1. Fig.2 shows the realized structure of a microstrip filter approximately producing a similar filtering characteristic of Fig.1.

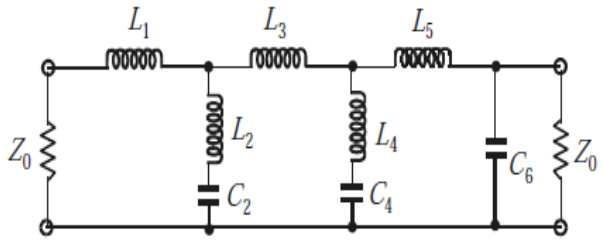


Fig. 1. An elliptic function, lumped element low- pass filter

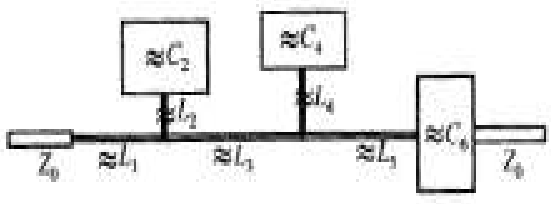


Fig. 2. An elliptic function, lumped element low- pass filter

The element values for elliptic function low-pass prototype filter are taken from [17]. The prototype filter has a pass band ripple L_{Ar} = 0.2 dB and a minimum stop band attenuation L_{As}=30 dB. The cutoff frequency of the designed microstrip filter is f_c=1GHz and I/O terminal impedance Z_0=50 Ω.

The L-C element values can be determined by

$$L_i = \frac{1}{2\pi f_c} Z_0 g_{L_i} \quad (1)$$

$$C_i = \frac{1}{2\pi f_c}\frac{1}{Z_0} g_{C_i} \quad (2)$$

The expressions for finite frequency attenuation poles are given by

$$f_{p1} = \frac{1}{2\pi\sqrt{L_4 C_4}} \quad (3)$$

$$f_{p2} = \frac{1}{2\pi\sqrt{L_2 C_2}} \quad (4)$$

All inductors will be realized using high impedance lines with characteristic impedance Z_{0L} = 137 Ω, where as all the capacitors are realized using low impedance lines with characteristic impedance Z_{0C} = 24.5 Ω

The physical lengths of high and low impedance lines for realization of the desired L-C elements can be determined using the following equations

$$l_{Li} = \frac{\lambda_{gL}}{2\pi}\sin^{-1}\left(2\pi f_c \frac{L_i}{Z_{0L}}\right) \quad (5)$$

$$l_{Ci} = \frac{\lambda_{gC}}{2\pi}\sin^{-1}\left(2\pi f_c Z_{0C} C_i\right) \quad (6)$$

The design specifications of elliptic function micros trip low pass filter are:

Filter Order (N) =11
Band edge frequency (f_c) =1GHz
Passband Ripple= ±0.2 dB
Dielectric constant of substrate, ε_r =3.2
Height of substrate h=0.7874 mm
Conductor thickness (t) =34 Microns

Using the above equations and design specifications, the relevant microstrip design parameters are calculated and are given in Table 1.

The Layout of the designed filter is shown in Fig. 3.

Table 1: Micro strip design parameters for an Elliptic function low-pass filter

Characteristic Impedance (ohms)	Z_{0C}=24.5	Z_0=50	Z_{0L}=137
Microstrip Line width (mm)	W_C=5	W_0=1.89	W_L=0.2
Guided Wave Length (mm) at f_c	λ_{gc}=148.6	λ_{g0}= 84.8	λ_{gl}= 98.54

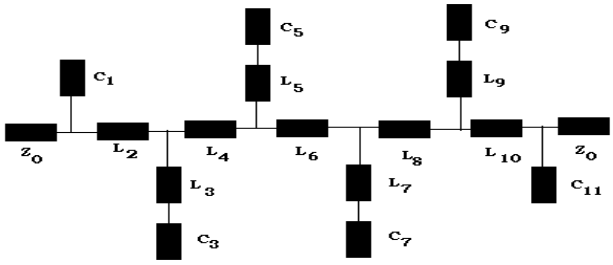


Fig.3. Layout of the 11th order elliptic function lowpass filter

The designed elemental values of inductances (L) & capacitances (C) of the above layout are realized using microstrip line structures and the width & length of the microstrip line are calculated using the equations (1)-(6) and are listed in Table 2. A layout of the designed microstrip filter is illustrated in Fig.4.

Table 2: Designed elemental values of L & C for the microstrip structures

Element		
C1 ,C11	**2.684pf**	
	Width (mm)	**Length (mm)**
L2, L10	0.2	10.4
L3, L9	0.2	9.3
C3, C9	5	9.8
L4, L8	0.2	10
L5, L7	0.2	9.5
C5, C7	5	10.8
L6	0.2	10.4

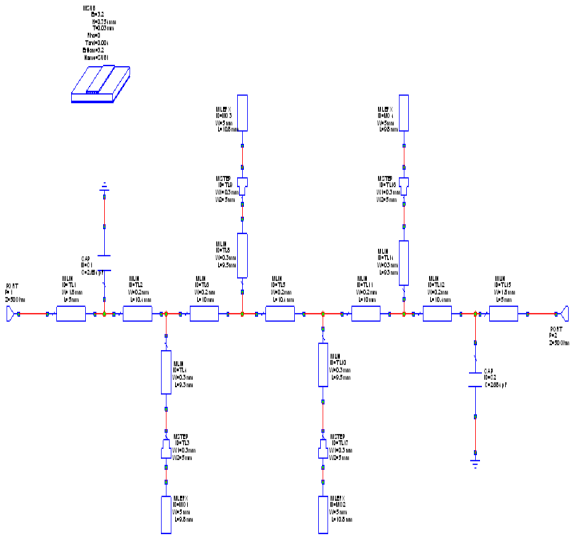


Fig.4. Schematic diagram of a 11th order microstrip elliptic function low-pass filter

The 11th order microstrip elliptic function low- pass filter is fabricated with the specifications mentioned above and the S-parameters are measured using Vector Network Analyzer (Model No: Agilent 8719ES) . The fabricated filter is shown in Fig. 5.

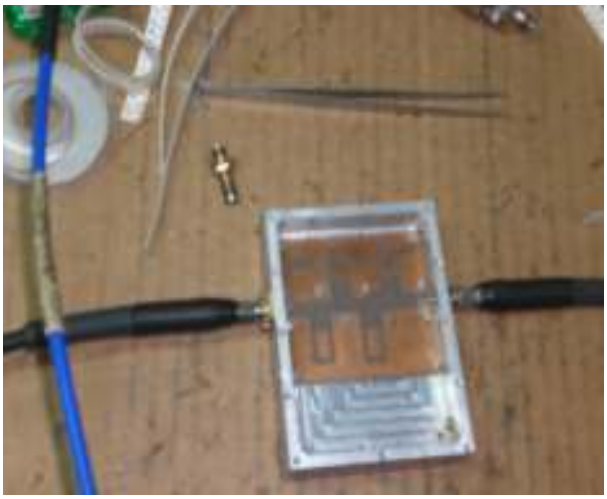


Fig. 5. Fabricated 11th order microstrip elliptic function low-pass filter.

III. ANN MODEL FOR THE ANALYSIS OF MICROSTRIP ELLIPTIC FUNCTION LOWPASS FILTER

The data sets with non-linear relationships can be modeled easily using ANN. There are numerous applications in engineering, where ANN can be used [18]-[21]. In developing an ANN model, the architecture of ANN and the learning algorithm are the two most important factors [22]. ANNs can be built using many architectures like Multi Layer Perceptrons (MLPs), Radial Basis Function (RBFs), Knowledge Based Neural Networks (KBNNs) etc., [22].The selection of structure and architecture for a particular model implementation depends on the problem to be solved. In this paper, the multilayered perceptron (MLP) neural network architecture is used as it has a simple layer structure in which successive layers of neurons are fully interconnected, with connection weights controlling the strength of the connections. The MLP comprises an input layer, an output layer, and a number of hidden layers. MLPs can be trained using many different learning algorithms.

A simple and accurate neural model is proposed for the analysis of microstrip elliptic function lowpass filter. The neural model as shown in Fig. 6 computes the magnitude of S-parameters.

The accuracy of ANN model depends on the data presented during training. For microwave applications, there are two ways for data generation, namely measured and simulated or calculated. The training data sets used here are measured using Vector Network Analyzer (VNA) (Model No: Agilent 8719ES) and contain 1200 samples. The neural model is trained with seven learning algorithms namely, Adaptive Back Propagation (ABP), Conjugate Gradient (CG), Huber-Quasi-Newton (HQN), Quasi-Newton(QN), Quasi-Newton (MLP) (QN-MLP), Simplex Method (SM) and Sparse Training (ST).

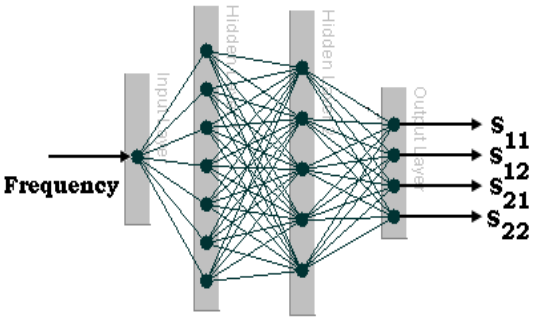


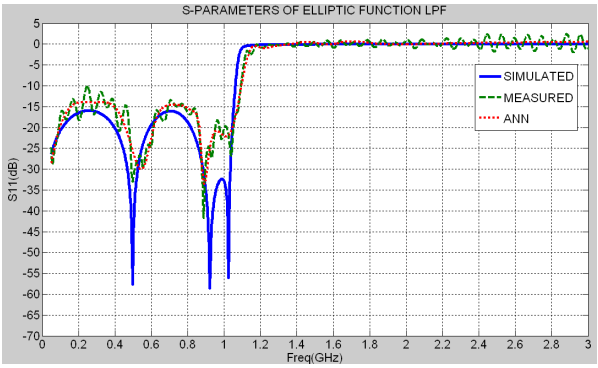
Fig. 6. Neural model for calculating magnitude of S-parameters of a microstrip elliptic function lowpass filter

IV. RESULTS AND DISCUSSION

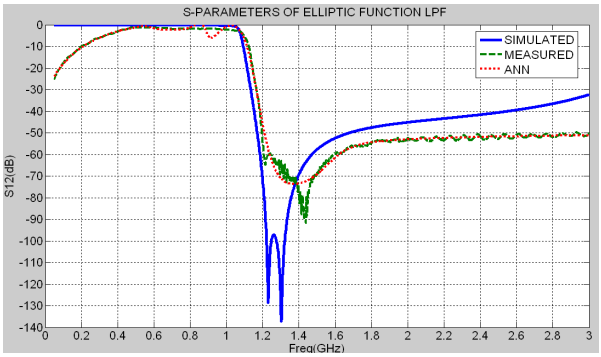
The training and testing results obtained from the neural model are given in Table 3. It has been observed from the table that the neural model trained by the Quasi Newton and Huber Quasi Newton algorithms are found to be better with less training error and better correlation coefficient than those trained by other algorithms for magnitude of S-parameters. To validate the neural model, comprehensive comparisons have been made. In these comparisons, the results obtained from the neural model trained by Quasi Newton algorithm is compared with Measured and EM simulated results and are presented graphically in Fig.7.

Table 3: Training and test results of S-parameters Magnitude of neural model.

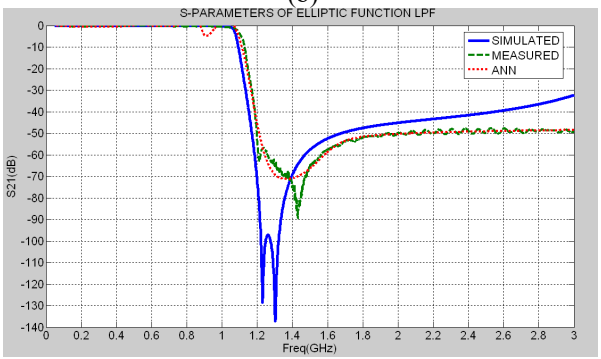
Name of the Algorithm	Training Error	Testing Corr. Coeff
ABP	0.03634	0.993511
CG	0.03629	0.993511
HQN	0.02532	0.995835
QN	0.02636	0.995882
QN (MLP)	0.02636	0.995882
SM	0.02604	0.995845
ST	0.03863	0.993445



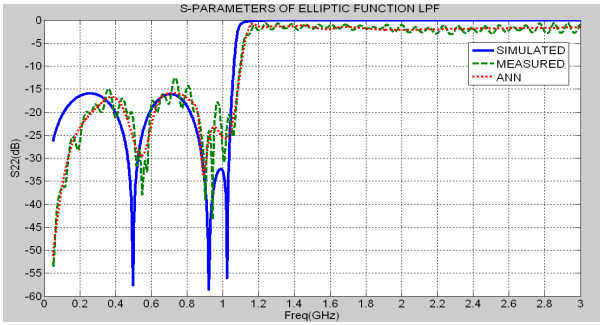
(a)



(b)



(c)



(d)

Fig.7. Comparison of simulated, measured and ANN generated S-Parameters of proposed filter (a) S11 (b) S12 (c) S21 (d) S22

The performance of ANN model is studied in terms of computational speed and accuracy and is listed in Table 4

Table 4: Computational speed and accuracy of microstrip elliptic function lowpass filter

Parameters	EM Software Simulated	Measured	ANN model
Computational Speed			
	0.125 Sec	**30 Sec**	**0.031 Sec**

Accuracy			
S_{11} (dB)			
Frequency (GHz)			
1.5048	-0.025804	0.27	0.2702
1.3075	-0.062263	-0.368	-0.3615
1.4882	-0.027259	0.392	0.3995
1.2134	-0.12775	-0.949	-0.9369
1.2061	-0.13716	-0.887	-0.8744
S_{12} (dB)			
0.35054	-0.10011	-4.339	-4.3382
0.4501	-0.042473	-2.115	-2.1134
1.9841	-45.276	-53.143	-53.140
0.77277	-0.17631	-1.91	-1.9067
2.4783	-40.797	-51.818	-51.812
S_{21} (dB)			
0.086876	-0.034675	-0.264	-0.2639
1.8145	-47.311	-51.51	-51.508
1.4919	-58.304	-66.957	-66.952
0.60683	-0.10945	-0.239	-0.2332
0.71192	-0.18556	-0.407	-0.4011
S_{22} (dB)			
1.7076	-0.015434	-1.52	-1.5198
0.6732	-16.368	-16.294	-16.290
2.1372	-0.008466	-2.086	-2.0799
1.75	-0.014228	-1.659	-1.6489
2.5649	-0.006772	-1.83	-1.8190

V. CONCLUSION

Accurate and simple neural model is presented to compute the S-parameters of microstrip elliptic function lowpass filter for the required design specifications and trained with seven different learning algorithms to obtain better performance and faster convergence with a simpler structure. It was shown that the accuracy of the neural models trained by Quasi Newton algorithm and Huber Quasi Newton are found to be suitable for microstrip elliptic function lowpass filter for evaluating magnitude response of S-parameters.

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As per the Latest Syllabus

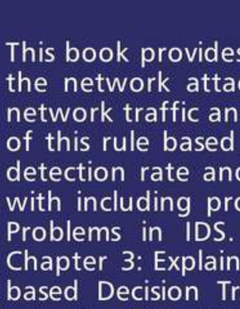
PYTHON PROGRAMMING

K. Nageswara Rao
Shaik Akbar

```
from Tkinter import *
m1 = PanedWindow()
m1.pack(fill=BOTH, expand=1)
left = Label(m1, text="left pane")
m1.add(left)
m2 = PanedWindow(m1, orient=VERTICAL)
m1.add(m2)
top = Label(m2, text="top pane")
m2.add(top)
bottom = Label(m2, text="bottom pane")
m2.add(bottom)
mainloop()
```

Winners Wisdom
SCITECH

This book provides a machine learning technique was proposed to identify the network attacks. IDS is an important technology that monitors the network traffic and identifies the network intrusions. The primary objective of this rule based intrusion detection system detects the errors with high detection rate and low false alarm rate. This book contains five chapters with including programs. Chapter 1: Covers Fundamental, motivation and Problems in IDS. Chapter 2: Discusses IDS Classification and methods. Chapter 3: Explains Development of Intrusion Detection System using Rule based Decision Tree (C4.5) Algorithm. Chapter 4: Explains Modeling of Intrusion Detection System using Rule based Genetic Algorithm. Chapter 5: Conclusions and Future work.



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978-620-2-09608-9

IDS Using Machine Learning Techniques

Shaik

Akbar Shaik

Enhanced Intrusion Detection System Using Machine Learning Techniques

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International Journal of Pure and Applied Mathematics
Volume 114 No. 11 2017, 19-26
ISSN: 1311-8080 (printed version); ISSN: 1314-3395 (on-line version)
url: http://www.ijpam.eu
Special Issue

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Big Data Cyber Security Threats for Mutual Detection

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Abstract

In the time of big data, it is a difficulty to be solved for encouraging the strong growth of the Internet and the Internet+, caring the information protection of individuals, institutions and countries. Therefore, this manuscript creates a mutual finding system of cyber security threats in big data. Initially, it explains the record group model of Flume, the data store of Kafka, and the data procedure of Esper; then it plans one-to-many record compilation, reliable data store, CEP data procedure using incident query and event model corresponding. Future implementation of this structure results good consistency and high competence. Furthermore, this system implementation also results recompense of low cost and bendy operation.

Key Words: Big data, kafka, threat, cyber security, Internet.

An Extensive Study of Visual Search Models on Medical Databases

Padmaja Grandhe, Sreenivasa Reddy Edara and Vasumathi Devara

Abstract Due to the rapid growth of medical images, user-specific ROI and object classification are the significant factors in the region-based segmentation instead of a pixel-based segmentation. Manual image annotation, classification, and filtering are not only a difficult task, but also high memory and time usage. In the visual search system, an unknown query image was given as input, relevant visual images with different diagnoses features are retrieved and then used as clinical decisions. The main goal of the visual search engine is to efficiently retrieve user-specific images that are visually identical to a selected ROI query. In this paper, a survey on traditional visual search methods is analyzed in terms of visual features and accuracy are concerned. Based on the survey performed by different visual search systems, the diagnostic efficiency is increased from 30 to 60% for clinical decision.

Keywords SIFT algorithm · Visual search · Classification · Image retrieval

1 Introduction

User Interest in the potential digital images has increased enormously over the past few years with the rapid growth of image database on the Internet. At the same time, demand for tools which can perform search and retrieval of images also has increased. Image retrieval involves retrieving images based on their visual similarity to images or image features provided by a user. Challenges with conventional

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H.S. Saini et al. (eds.), *Innovations in Electronics and Communication Engineering*, Lecture Notes in Networks and Systems 7,
https://doi.org/10.1007/978-981-10-3812-9_23

Dept of CSE, Andhra Loyola Institute of Engineering & Technology, Vijayawada, "National Conference On "Recent Trends in Advanced Computing", NCRTIAC2K16, 30th APRIL 2016-IJRCSE SPECIAL ISSUE,
ISSN-2321-5585 (Online)
ISSN-2321-0338 (Print)

IoT Routing classification and protocols with Autonomous Systems of Things

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Abstract—An Future-Driven routing architecture for Internet of Things (IoT). In today's Internet, inter-domain route control remains indescribable; however such control might improve the performance, reliability, and utility of the network for end users and ISPs alike. The IoT concept of is novel approach relating a new concept as regards a set of things with the same routing and service polices, denoted by an autonomous system of things (ASoT). In IoT, an ASoT would be connected not only to the others but legacy autonomous systems (ASs) for the Internet in a wide variety of scenarios. Consequently, to begin with addresses categorization of diverse features of ASoTs, and followed by explores IoT Routing protocols.

Index Terms—Routing architecture, autonomous systems, autonomous system of things (ASoT), Internet of Things (IoT).

I. Introduction

IoT is an promising wave for new service development and global economy growth, driven by billions of things being connected to the Internet. IoT vision of pervasively connecting billions of things is able to interact with environment roughly us and receive information on its status that was formerly not available by simply looking at a set of things. In other words, while preceding Intranets of Things, which is a local network of a set of things such as wireless sensor networks (WSNs), machine-to-machine (M2M), smart homes, and so on, can only extract regional information containing a specific content from the things, IoT possibly will present large scale, comprehensive, and historical information by collaborating between different Intranets of Things level if they have heterogeneity regarding devices, local communication technologies, and deployment goals. Therefore, IoT will bring about '6A connectivity' (i.e., any time, any one, anything, any place, any service, and any network).

In IoT, an huge number of potential devices (e.g., smart meters, sensors, tags, etc.) that are self-possessed of Intranets of Things and would be connected each other by the Internet could support smart services and applications for diverse service providers with a extensive range of Intranets of Things . That is, every service provider might deploy devices, consisting of its service domain that is connected to the Internet with a wide variety of interconnection scenarios, suitable for its own service policies and objectives.

The routing architecture shows different correlations connecting new components of IoT and conventional ones of the Internet. We deal with requirements of IoT. We present our vision of routing architecture in IoT with a novel component, and we moreover explain inter-domain issues in IoT. Finally, we nearby IoT Routing Protocols.

II. 6A Connectivity

The 6A connectivity elements that in attendance understanding characteristics of IoT. Firstly to illuminate about the crucial stage of IoT; however, none of these elements were definite and sufficiently explained in the literature. In this section we talk to definitions of 6A connectivity elements. Several of these elements possibly will be coined commonly according to their functionality.

- *Any TIME, Any PLACE*: The notion of ubiquitous and pervasive computing implies a connected world where smart gadgets will combine in aspects of everyday life invisibly, and communication networks will connect these gadgets effortlessly to facilitate anytime/anywhere communications. Also, it means that services should support nomadicity, mobility, and global roaming to users.

- *Any ONE, Any THING, Any NETWORK*: Ubiquitous and pervasive computing suggests construction an infrastructure of correspondent entities in which each entity provides, consumes data, and interacts with others. Those entities are measured as the major actors in such infrastructure. The actors team up to commence and use services presented within this infrastructure. People, devices, and services including interconnection between them via any right to use networks or the Internet can be referred to as actors.

· *Any SERVICE*: Relying on ubiquitous and pervasive computing infrastructure that allows on the go connectivity to any kind of entities (i.e., persons, devices, and services) using any available network, smart services can be provided with a better level of QoE.

·

-Network Structure and Protocol Operations. 1) Network Structure utilizing network structure in routing protocols can reduce usage of many network resources such as bandwidth, traffic load, processing time or energy consumption. Due to selection of network topology, routing protocols are also developed equally.

a) Flat routing protocols are mainly used for networks with flat structure with a large amount of sensor nodes.
b) Hierarchical routing protocols are designed for networks with hierarchical structure like Internet. The idea is to divide the network into cluster and select from each cluster a clusterhead.

International Journal of Innovations & Advancement in Computer Science
IJIACS
ISSN 2347 – 8616
Volume 6, Issue 8
August 2017

Migration of Data from MS Access to Oracle Database

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ABSTRACT

Ms Access is the traditional database that is mostly used by many people earlier. Ms Access provides many sophisticated tools to design, manage, analyze and monitor data. However these MS Access databases get out of control when they are used by more and more people. So in order to overcome this problem of multiuser approach people started migrating to Oracle database.

Oracle database provides more security to the data and also it provides more structured and more repeatable approach for business processes. So due to this vast amount of features of Oracle and also the supportability of multiuser concept people started migrating from MS Access to Oracle. So the proposed system coverts data from MS Access to Oracle without any loss of data.

KEYWORDS

Data migration from MS Access to Oracle, Conversion, Sql conversion, Bridge from Access to Oracle.

1. INTRODUCTION

MS Access is a database management system from Microsoft that combines software development tools, database engines and many more. It had its initial release in November 1992. It helps in analyzing the data related to business and many more areas. It acts as a repository to store vast amount of data and manage them. The data is usually stored in tables since it is a traditional database.

Oracle is a relational database also known as Oracle RDBMS was the database developed by Oracle Corporation. Oracle database had its first stable release on 1 march 2017.[3]The founder of Oracle database is Larry Ellison. Oracle supports many features like multiusers, monitoring, analyzing, maintain and easy retrieval of data. Oracle stores data in form of table spaces. Oracle provides more security to the data. Oracle database supports well-structured, distributed data, repeatable and high end quality data and a vast number of workflow processes.

Once an Access application is converted into Sql Oracle database, the data loss will not occur and the data can be still viewed and exported and analyzed in MS Access. The new converted application provides improved data entry consistency, improved version control and a great user interface. The main advantage of this proposed system is the application has a high security over the internet.

2. RELATED WORK

- **S.Chidananda Gouda**[1]**:** Proposed data migration tools and their migration techniques for converting data to different platforms.
- **Kanagaraj.S**[2]**:** Proposed the storage model of different relational databases and their schema.

AN ADVANCED SECURE AUDITING AND DATA DE DUPLICATING IN MULTI CLOUD

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Abstract— As the cloud computing technology develops during the last decade, outsourcing data to cloud service for storage becomes an attractive trend, which benefits in sparing efforts on heavy data maintenance and management. Nevertheless, since the outsourced cloud storage is not fully trustworthy, it raises security concerns on how to realize data deduplication in cloud while achieving integrity auditing. In this work, we study the problem of integrity auditing and secure deduplication on cloud data. Specifically, aiming at achieving both data integrity and deduplication in cloud, we propose two secure systems, namely SecCloud and SecCloud+. SecCloud introduces an auditing entity with a maintenance of a MapReduce cloud, which helps clients generate data tags before uploading as well as audit the integrity of data having been stored in cloud. Compared with previous work, the computation by user in SecCloud is greatly reduced during the file uploading and auditing phases. SecCloud+ is designed motivated by the fact that customers always want to encrypt their data before uploading and enables integrity auditing and secure deduplication on encrypted data.

Keywords— Seccloud, seccloud+, integrity auditing, secure de-duplication, proof of ownership convergent encryption.

I. INTRODUCTION

Cloud storage is a model of internet enterprise storage where data is stored in virtualized pools of storage which is hosted by third-party. Cloud storage provide offers for customer which generated more benefit for cloud companies, like popularity, more user. Even though now days cloud storage system has been smart option for work. And also it is affordable, but it has certain limitation. The main problem of client data management and maintenance which is able to Relief by cloud server storage system of cloud is different from another storage System. The first problem is integrity auditing, i.e when we uploaded data it upload various manner like packets tokens which is less secure because if any packet loss while transmitting its occur problem for client. As well as it's to easy for a professional Attacker to attack. So its most important that maintain the integrity of data on storage system. The data is transferred via internet and stored in uncertain domain not the under control of client. The another uncontrolled cloud server may passively hide the any problem related data for their reputation. It is more important that cloud server might even actively and deliberately discard rearely accessed data files belonging to an ordinary file. The second problem is secure deduplication. In cloud storage among these remote stored files, most of them are already on storage. According to recent survey by EMC, 70% of files are duplicated copies .Because its helps to cloud servers paid more for space from client. That's the one of the reason why many cloud server are store duplicate copies of data. And Its more risky to available duplicate copies of data in storage. Stored data is various manner lie confidential password, banking detail, personal information, it is open invitation for attacker .In cloud server, server store every single file link with the who ask for the file. Cloud server needs to verify whether the user actually owns the file before creating a link for user. In de-duplicate data, when a user wants to upload a data file that already exists in the cloud storage, the cloud server executes a checking algorithm to see whether or not this user actually possesses the whole file i.e. it checks the file attribute. If the user passes the checking, he/she can directly use the file existed on the server without uploading it again. To overcome such problems cloud server uses proofs-of-ownership protocol, which let a client efficiently prove to a server that the client holds a file, rather than short-information about it. In this a file have different ownership which introduce rigorous security definition. For working dynamic data proof-of-retrievability protocol used. Because dynamic data operation can be vital importance to storage outsourcing services.

Existing System

Earlier client upload data file on cloud in plain text format. And wants to maintain the integrity and security on that plain data file. Customer always choose the safest and cheapest method for the data storage and transformation on cloud. but that's not possible to give all feature in such minimum amount .every system has some drawbacks and various problems. Existing system drawback 1. It is very difficult to audit the files huge and large amount of data in cloud using integrity auditing. 2. Lots of Duplicate files in cloud The number of security problems that are faced by cloud computing are 1) Data issues 2) Privacy issues 3) Infected application

Proposed System

To solve this problem on existing system we propose two secure system. Which generate better And Efficient system for accessing massive data on cloud. In this, firstly encrypted the plain data file and perform integrity auditing on that encrypted file.

Dynamic Resource Allocation Using Cloud Computing Environment

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ABSTRACT: Cloud computing allows business customers to scale up and down their resource usage based on needs. Many of the touted gains in the cloud model come from resource multiplexing through virtualization technology. In this paper, we present a system that uses virtualization technology to allocate data center resources dynamically based on application demands and support green computing by optimizing the number of servers in use. We introduce the concept of "skewness" to measure the unevenness in the multi-dimensional resource utilization of a server. By minimizing skewness, we can combine different types of workloads nicely and improve the overall utilization of server resources. We develop a set of heuristics that prevent overload in the system effectively while saving energy used. Trace driven simulation and experiment results demonstrate that our algorithm achieves good performance.

Key Terms: *Cloud Computing, Virtual Machine, Resource Management, Green Computing*

1. INTRODUCTION:

Cloud computing is a model which enables ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources that can be rapidly provisioned and released with minimal management effort or service provider interaction. A cloud environment consists of multiple customers requesting for resources in a dynamic environment with possible constraints. In the existing economy based models of cloud computing, allocating the resources efficiently is a challenging job. The elasticity and the lack of upfront capital investment offered by cloud computing is appealing to many businesses. There is a lot of discussion on the benefits and costs of the cloud model and on how to move legacy applications onto the cloud platform. Here we study a different problem: how can a cloud service provider best multiplex its virtual resources onto the physical hardware? This is important because much of the touted gains in the cloud model come from such multiplexing. Studies have found that servers in many existing data centers are often severely under-utilized due to over-provisioning for the peak demand.

2. PROPOSED SYSTEM:

In this project, we present the design and implementation of an automated resource management system that achieves a good balance between the two goals:

1. **Overload Avoidance:** The capacity of a PM should be sufficient to satisfy the resource needs of all VMs running on it. Otherwise, the PM is overloaded and can lead to degraded performance of its VMs.
2. **Green Computing:** The number of PMs used should be minimized as long as they can still satisfy the needs of all VMs. Idle PMs can be turned off to save energy. The Proposed model has been developed by considering various parameters such as cost, profit, user, time, Number of processor request, resource assigned, resource availability, resource selection criteria etc..

3. FEASIBILITY ANALYSYS:

Feasibility study is the high-level capsule version of the entire requirement analysis process. The objective of feasibility study is to determine whether the proposed system can be developed with available resources. There are three steps to be followed in determining the feasibility of the proposed system. Technical Feasibility, Operational Feasibility and Economic Feasibility.

3.1. TECHNICAL FEASIBILITY: Evaluating the technical feasibility us the trickiest part of feasibility study. This is because, now not too many detailed design of the system, making it difficult to access issues like performance, costs etc., a number of issues have to be considered while doing a technical analysis. Understanding

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This study aims to develop a methodology for selecting most appropriate technology of sewage treatment plant suitable for a particular location taking into account all the constraints specific to the site. In this study, performance data of 21STPs spread over the length and breadth of the country was analyzed. The different STPs were categorized on the basis of various parameters such as initial cost, annual operation & maintenance cost performance level, energy requirement, and availability of land. The technologies with good performance minimum capital costs, minimum O & M costs, and low life cycle cost, minimum energy requirement but high land requirements fall in category-I such as WSPs. The technologies with good performance, moderately associated costs, minimum O & M costs, low life cycle cost, high energy requirement but moderately low land requirement fall in category-II. ASP system and its minor modification fall in this category. The technologies with very good performance, very high associated costs, very high energy requirement and low land requirement fall in category-III. Various advanced aerobic processes like BIOFOR, BIOFOR-F, FAB, and SAFF are the example of this category of treatment systems. The technologies with marginal performances, but low energy requirement, minimum associated cost, and moderately low land requirement fall in category-IV, like the UASB based ASP. It is concluded that out of above 21 STPs, 6 STPs fall under category-I, 3 STPs fall under category-II, 5 STPs fall under category-III and 7 STPs fall under category-IV.

Key words- Sewage treatment techniques, life cycle analysis, pollution, UASB, FAB, land cost, influent, effluent, India.

22. BIG DATA METHODOLOGIES BASED ON DATA ANALYSIS

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Big data is a prevalent area in research work. Everybody is speaking round big data, and it is supposed that knowledge, commercial, manufacturing, administration, civilization etc. will undertake a complete revolution with the effect of big data. Big data is enormous in Variety, Velocity and Total volume. It is structured and unstructured data and various in nature. In this paper, discusses big data methods & tools, related applications and frame work. This study gusts up with a discussion of tasks and upcoming guidelines.

23. IMAGE DENOISING USING GUIDED FILTERING

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In Digital Image processing the main challenging task for the researchers is to remove the noise from the noisy image. Several number of Image denoising techniques which are already published each technique has its advantages, assumptions, and limitations. This paper presents an overview in the domain of image denoising. In this paper we proposed a technique called Image denoising using Guided filtering. This proposed technique is more efficient and overcomes the limitation of artifacts in existing bilateral

ISBN 978-81-904760-9-6

adds cost which is not a desired feature. In Localization, the distances between nodes are determined by using RSSI Mechanism. This mechanism is simple and economical when compared to other methods .The RSSI values are taken for Classical Trilateral Approach for determining Unknown nodes location. But this approach processes distance errors resulting equation instability. The proposed method results in improving network lifetime and reducing the distance error. In this method two mobile anchor nodes are considered .They move in random manner in two different directions throughout the network gathering the neighbouring nodes information. The collected information is further involved in Trilateral minimum condition method to obtain the unknown nodes position. In this two mobile nodes moving in opposite direction are seized for determining distance values resulting in reduction of energy utilization and distance error associated with the neighbouring nodes besides improving the network life time. Thus the proposed method yields best performance by improving signal strength, network lifetime, lowering energy consumption and decreasing error rate when compared to previous Classical trilateral approaches.

Keywords: Anchor nodes, Classical Trilateral Method, Localization, Mobile node, WSNs

30. A NEW FRAME WORK TO ENHANCE THE IMAGE QUALITY USING GRADIENT DOMAIN GUIDED IMAGE FILTERING

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Guided image filter (GIF) is a renowned local filter for its edge-preserving property and low computational complexity. Lamentably, the GIF may suffer from halo artifacts, because the local linear model used in the GIF cannot reveal the image meticulously near some edges. In this work, a gradient domain GIF is schemed by assimilating an explicit first-order edge aware constraint. The edge-aware constraint makes edges sustain finer. To emphasize the efficiency of the schemed filter, the schemed gradient domain GIF is applied for single-image detail enhancement, and image saliency detection. Both hypothetical analysis and heuristic results prove that the schemed gradient domain GIF can produce superior resultant images, uniquely near the edges, where halos emerge in the actual GIF.

Index Terms—Guided image filter, gradient domain, edge-preserving, detail enhancement, saliency detection.

31. SMART FARMING SYSTEM USING IOT

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This paper aims farm monitoring using Iot. In recent times, the farmers have been using irrigation technique through the manual control in which the farmers irrigate the land at regular intervals by turning the water-pump ON/OFF when required. They also need to know the soil moistures level existing every day. In this aspect we proposed smart farming system which includes sensors like humidity sensor, soil moisture sensor, and light sensor to protect the crops in everyday. These sensors are controlled by using Arduino (micro controller) and monitor the levels of water humidity, soil moistures, thus results are deployed in Iot which will improve the quality, quantity, and cost-effectiveness of agricultural production for farmers.

which is connected to system through wireless with the help of Wi-Fi device. The Wi-Fi device used here is Tiny sine Wi-Fi device and it's based on networks RNXV module. It provides the link between TTL serial port and IEEE802.11b wireless communication network that helps to connect the entire setup wirelessly to the system. This system can be movable and easy to handle for recording all the physical or environmental parameters and storing it for a period of time.

Keywords: Datalogger, Wi-Fi, RN-XV, TTL, SD, PC, TCP, VI.

39. CONSISTENT USE OF THE RISK ASSESSMENT IN THE PROJECT LIFE CYCLE

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Identifying, assessing and managing the risk within their areas of control have to be done effectively by the project managers for ensuring that appropriate risk management activities are functioning effectively during the course of the project. A thorough risk analysis will help us to prioritise risks, develop contingency actions and implement an action plan to control or minimize the risks. The high priority should get most attention in terms of analysis, monitoring and risk reduction effort. The paper has collected various categories of risks from different projects and developed of a compliance risk inventory from which the ranking of risks has been developed. The probability and impact of those risks will vary from project to project or organisation to organisation or even customer to customer. Many projects fail if the project managers cannot anticipate the risks and develop a process or plan to manage and minimise the risks associated with the project. This research paper provides a description of risks, management activities that need to be treated and the most appropriate control.

Key words: Risk, Risk Analysis, Risk Management, Risk Assessment, Risk Management Framework .

40. THE EFFECT OF CONNECTED THINGS WITH INTELLIGENT MANAGEMENT PLATFORM- AN IOT SOLUTION

(A Research Study on Nokia)

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With the rapid development of opportunities in the 1IoT marketplace, organizations are challenged in developing business-specific solutions while ensuring maximum reusability across their organization and business units. Fragmentation in the IoT industry, rooted in disparate devices and applications built on proprietary protocols can stifle innovation. This complex ecosystem makes it harder for application developers to innovate and create new applications cost effectively. In the 2Telco, enterprise, and municipal space the effects of this complexity are felt in different ways.

Key Terms: IoT, Market Place, Enterprise, Telco, Analytics, Scalability

An implementation of Manchester coding is being described in this paper. Manchester coding technique is a digital coding technique in which all the bits of the binary data are arranged in a particular sequence. The Intersil HD-15530 is a high performance CMOS device intended to service the requirements of MlL-STD-1553 and similar Manchester II encoded, time division multiplexed serial data protocols. This LSI chip is divided into two sections, an Encoder and a Decoder. These sections operate completely independent of each other, except for the Master Reset functions. This circuit meets many of the requirements of MIL-STD- 1553. The Encoder produces the sync pulse and the parity bit as well as the encoding of the data bits. The Decoder recognizes the sync pulse and identifies it as well as decoding the data bits and checking parity. This integrated circuit is fully guaranteed to support the 1MHz data rate of MlL-STD-1553 over both temperature and voltage. It interfaces with CMOS, TTL or N channel support circuitry. The HD-15530 can also be used in many party line digital data communications applications, such as an environmental control system driven from a single twisted pair cable of fiber optic cable throughout the building. The functions of the encoder section of the MED include a micro processor interface, parallel to serial conversion, frame generation, and NRZ to Manchester encoding. This circuitry can run very fast since it does not require a high-frequency clock. The frame format used is similar to that of a UART. The Manchester decoder limits the maximum frequency of operation of the MED, since it uses a high-frequency clock. The receiver circuitry is more complex, since clock recovery and center sampling is done. Additional receiver functions are frame detection, decoding of Manchester to NRZ, serial to parallel conversion, and a microprocessor interface.

Keywords: Manchester coding, Encoder, Decoder, NRZ, Moore's law, UART, clock frequency

59. WITRICITY BASED ON EMBEDDED SYSTEMS

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Wireless Power Transfer (WPT) means transmission of power to a device without using wires. Wireless power transfer is commonly known by many terms, including inductive power transfer, inductive coupling and resonant power transfer. Wireless power transfer is becoming popular for inducting charging of consumer electronics and even for transmission of electrical energy .The wireless charger works mainly on the principle of inductive coupling. With this idea of inductive coupling, we are trying to transfer electricity wirelessly to charge low power devices like mobile phones. WITRICITY based products are being designed with applicable safety standards and regulations. On the other hand, power loss of this technology is very less as compared to wired electricity transmission. Wireless power transmission is very efficient, reliable and it has low maintenance cost.

Keywords- ARM controller, magnetic coils, mobile phone.

60. A HYBRID STEGANOGRAPHY AND CRYPTOGRAPHY WITH ANALYSIS AND SIMULATION

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This paper work deals with the study of Steganography, steganalysis with simulation. Steganalysis helps in finding better target image suitable for hiding the information. In addition to that simulation helps in analyzing where the message information embedded in the stego image. Steganography helps in protecting images by including copy right information in the images. Steganalysis is the system of recognizing the occurrence of masked data in the stego media and it can prompt the counteractive action of unfortunate security incidents. In this paper we described a method for integrating stegnography and cryptography. To provide protection in the embedding process password is used. Same password should be used for extraction process.

Keywords: Stegnography, Cryptography, StegAnalysis, Bulk Analysis, Steg-Image

61. AN ANDROID APPLICATION FOR CANTEEN AUTOMATION SYSTEM

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Now-a-days, manual system involves paper work in the form of maintaining various files and manuals. Maintaining critical information in the files and manuals is full of risk and a tedious process. Including a framework showing how to apply Internet technology progressively as skills and confidence grow, the project demonstrates the route from adapting materials to developing an online environment. Our project Canteen Automation System is fully based on Internet technology, it enables the end users to register online, select the food from e-menu card and order the selected food through online by using this android application. In this application, we are authenticating the user by providing username and password. By using the username and password, the user can login into the system and select the food through online itself. Nowadays people don't have much time to spend in canteen and waiting for the waiter to take their order. Many customer visits the canteen in their lunch break. So, they have limited time to eat and return to their respective office and colleges. So this application helps them to save time and order food whenever they want without calling the waiter again and again.

The main highlights and benefits of the project are:

- User friendly environment
- Reduces the waiting time at the canteen
- Can check the available items from anywhere through online, without physically going to the canteen.

Keywords: Canteen, Android, Online, Database etc.

62. BIG DATA CYBER SECURITY THREATS FOR MUTUAL DETECTION

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Dr.K.NageswaraRao, Professor, Principal, PSCMR College of Engg.& Tech, Vijayawada.

In the time of big data, it is a difficulty to be solved for encouraging the strong growth of the Internet and the Internet+, caring the information protection of individuals, institutions and countries. Therefore, this manuscript creates a mutual finding system of cyber security threats in big data. Initially, it explains the record group model of Flume, the data store of Kafka, and the data procedure of Esper; then it plans one-to-many record compilation, reliable data store, CEP data procedure using incident query and event model corresponding. Future implementation of this structure results good consistency and high competence. Furthermore, this system implementation also results recompense of low cost and bendy operation.

Keywords: Big data, kafka, threat, cyber security, Internet.

63. DYNAMIC RESOURCE ALLOCATION USING CLOUD COMPUTING ENVIRONMENT

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Cloud computing allows business customers to scale up and down their resource usage based on needs. Many of the touted gains in the cloud model come from resource multiplexing through virtualization technology. In this paper, we present a system that uses virtualization technology to allocate data center resources dynamically based on application demands and support green computing by optimizing the number of servers in use. We introduce the concept of "skewness" to measure the unevenness in the multi-dimensional resource utilization of a server. By minimizing skewness, we can combine different types of workloads nicely and improve the overall utilization of server resources. We develop a set of heuristics that prevent overload in the system effectively while saving energy used. Trace driven simulation and experiment results demonstrate that our algorithm achieves good performance.

Key Terms: Cloud Computing, Virtual Machine, Resource Management, Green Computing

64. MORPHOLOGICAL BACKGROUND DETECTION AND ENHANCEMENT OF IMAGE FROM POOR LIGHTING

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The aim of this paper is to detect the background image and enhance the contrast in gray level image with poor lighting. First operator applies information from block analysis and second operator's uses opening by reconstruction. Finally the performance of proposed operators is illustrated through the processing of images with difficult background. Now a days these techniques are employed for the Medical imaging is the technique and process used to create images of the human body (or parts and function thereof) for clinical purposes (medical procedures seeking to reveal, diagnose or examine disease) or medical science (including the study of normal anatomy and physiology). Although imaging of removed organs and tissues can be performed for medical reasons, such procedures are not usually referred to as medical imaging, but rather are a part of pathology. As a discipline and in its widest sense, it is part of biological imaging and incorporates radiology (in the wider sense), nuclear medicine, investigative radiological sciences, endoscopy, (medical) thermography, medical photography and microscopy (e.g. for human pathological investigations).

Key Terms: Mathematical Morphology, Medical Imaging, Microscopy, Foundation Processing

65. OBJECT DETECTION ROBOT USING OPEN COMPUTER VISION (CV)

Mr.B.Sarath Chandra[1], P.N.V.Prathyusha[2], Naushad Yasmin[3], B.Mounika[4],
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The project primarily focus on the basis to implement the object(human) detection, which is visual based project i.e., the input to the project will be the video/image data which is constantly captured with the help of a webcam which is interfaced to the Raspberry Pi. It will detect the person by moving the robot in the direction of the detected object. The visual data captured by the webcam is processed in the Raspberry Pi and the human is detected based on their eyes and if the human is detected, the motor is rotated in such a way that wherever the person moves, the camera will be pointing to that person. Here, the motors are controlled by the help of Atmel ATMEGA2560 Microcontroller board through its PWM pins. We can control the position of motor rotations by the Raspberry Pi i.e., GPIO pins are connected to Microcontroller from PI. We use Raspbian OS with python coding to identify the human with open CV.

Keywords: Microcontroller, Raspberry PI, Motors.

66. SECURITY ENHANCED DISTRIBUTED DYNAMIC ROUTING ALGORITHMS

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Security has become one of the main issues for data communication added wired and wireless networks. Different from the history work on the designs of cryptography algorithms and system infrastructures, we will recommend a dynamic routing algorithm that might randomize delivery paths for data transmission. The algorithm is straightforward to employ and well-matched with admired routing protocols, such as the Routing Information Protocol in wired networks and Destination- Sequenced Distance Vector protocol in wireless networks, without introducing extra control messages. An analytic study on the proposed algorithm is presented, and a series of simulation experiments are conducted to verify the analytic results and to show the capability of the proposed algorithm.

Index Terms—Security-enhanced data transmission, dynamic routing, RIP, DSDV

67. THE IMPACT OF CONNECTED THINGS WITH INTELLIGENT MANAGEMENT PLATFORM- AN IOT SOLUTION

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With the rapid development of opportunities in the 1IoT marketplace, organizations are challenged in developing business-specific solutions while ensuring maximum reusability across their organization and business units. Fragmentation in the IoT industry, rooted in disparate devices and applications built on proprietary protocols can stifle innovation. This complex ecosystem makes it harder for application developers to innovate and create new applications cost effectively. In the 2Telco, enterprise, and municipal space the effects of this complexity are felt in different ways.

In view of the above we may have to ensure the following:

- Ensure maximized value of analytics and managed data through end-to-end authentication, security, and privacy
- Deliver value beyond connectivity through richer experience and set of services to customers
- Scale by applying platform across all verticals without building discreet solutions for each application

Key Terms: IoT, Market Place, Enterprise, Telco, Analytics, Scalability

68. VEHICLE CONTROL AUTOMATICALLY IN TRAFFIC USING FIRD BIRD V

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Image super resolution and contrast enhancement using curvlet's with cycle spinning

3 Author(s) I. Murali Krishna ; C. Narasimham ; T. Bhaskar Reddy View All Authors

Abstract:
To attain more visual for an image it is indeed of enhancing the regions. In order to achieve, this paper focuses on various kinds of enhancements and discussed with their pros and cons. Further, describes an extensive approach of Frequency Domain Based image enhancement. Applicative areas were cleanly measured and enhanced details with their change of PSNR parametric values were discussing here in particular on curvelet with cycle spinning.

Published in: 2016 International Conference on Communication and Electronics Systems (ICCES)

Date of Conference: 21-22 Oct. 2016

INSPEC Accession Number: 16776317

Date Added to IEEE *Xplore*: 30 March 2017

DOI: 10.1109/CESYS.2016.7889926

ISBN Information:

Publisher: IEEE

Conference Location: Coimbatore, India

Introduction

Main problems that why image enhancement acquired is noisy or blurred or damaged and non-

Academic Year 2017-2018

Paper III ENGINEERING MECHNAICS

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UNIT-1

Systems of Measurements and Units

Learning Objectives

The branch of science which deals with motion, forces and their effect on bodies is called mechanics. The application of principles of mechanics to common engineering problems is known as engineering mechanics.

Introduction

SYSTEM OF UNITS

There are four systems of units which are commonly used and universally recognised. These are known as

(i) C.G.S. (ii) F.P.S. (iii) M.K.S. and (iv) S.I. Units

(i) C.G.S. Units

In this system, the fundamental units of length, mass and time are centimetre, gram and second.

(ii) F.P.S. Units

In this system, the fundamental units of length, mass and time are foot, pound and second respectively.

(iii) M.K.S. Units

In this system, the fundamental units of length, mass and time are metre, kilogram and second respectively.

(iv) S.I. Units (International System of Units)

The eleventh general conference of weights and measures (GCWM) has recommended a unified, systematically constituted system of fundamental and derived units for international use. In this system the fundamental units are meter (m) kilogram (kg) and second (s) respectively. But there is slight variation in their derived units. The following are the derived units.

Force	**-N (Newton)**
Stress (or) Pressure	-N / mm^2 (or) N/m^2

Work done (in joules)		-J =Nm
Power in watts		-W
	Temperature Degree Kelvin	-K
	Current (ampere)	-A

Fundamental Units

The physical quantities which do not depend up on other quantities are known as "Fundamental Quantities" and units for such quantities are known as "Fundamental Units" or "Base Units". The internationally accepted fundamental quantities are

(i) Length (ii) Mass and (iii) Time

Derived Units

If the units are expressed in other units which are derived from fundamental units are known as "derived units'.

Ex: Units of Area, Velocity, Acceleration, Pressure etc.

Units of Physical Quantities

Engineering mechanics and strength of materials are essentially "quantitative sciences". They involve expressions of quantities. For example.

(i) Height of a building is 12m

(ii) Area of cross section of land is 220 mm^2

(iii) Stress in bar is 150 Newtons per mm^2.

(iv) Radius of gyration of the section is 12 mm.

In all the above expressions of quantities; we essentially state two items, viz., a number and a known standard of measurement.

In the statement "Height of building is 12m, the standard length of measurement is 1m and the height of the building is 12 times the length of that standard. The standard of measurement adopted is known as the "unit" of physical quantity. Each physical quantity can be expressed in a number of units.

Eg. (1) Length can be measured interms of meters, millimetres, feet, yards and so on.

(2) The unit of area is the area of a square of side 1m and is stated as $1m^2$.

(3) Unit of volume is the volume of a cube of side 1m and is stated as $1m^3$.

(4) Unit of velocity is unit displacement for unit time and stated as 1m/s

(5) Unit of mass density is unit mass per unit volume and is stated as 1 kg/ m^3.

(6) Unit of acceleration is unit change of velocity per unit time and is stated as 1m per Second Square (1m /sec2).

Paper I Water Supply Engineering

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Table of Contents

UNIT-I

1.0 Introduction

Learning Objectives

After studying this chapter, you will be able to

- Understand the importance and necessity of Drinking water in Rural and urban area.
- Know the importance of whole some water.
- Know the planning and execution of water supply schemes, executing organizations and departments in India.

1.1 Importance and Necessity for planned water supplies

Next to air, other important requirements for human life to exist is water. Water is available in various as rivers, lakes, streams, ponds etc. That the development of any city of the world has taken place near the source of water supply. Water is extremely useful to society, providing the luxurious comforts, in addition to the basic daily needs of life. It has been estimated that the human body is made up of largely of water up to 75%. A normal human need, about 2 to 5 litres of water a day to survive. It is necessary that the water required for human needs must be good and should not contains harmful impurities, or chemical compounds or bacteria in it. In order to provide sufficient quantity and quality of water. It is necessary to plan and built suitable water supply schemes, which may provide portable water to the various sections of community in accordance with their demands and requirements. Such schemes shall not only help in supply of pure water to the people for drinking, bathing, cooking, washing etc and promoting better health; but would also help in supplying water for gardens, fountains and thus helping in maintain sanitary. The water supply schemes shall help in attracting industries, consequently the reducing unemployment and ensuring better living standards

1.2 Status of protected water supply in India

Lack of safe drinking water in India is still a problem in many areas of the country. As per the U.N. report (1983), town and cities only 86% of the urban population have some provision for protected water supplies. Only one village out of ten have protected drinking water. It is important to note that 80% of India's population live in villages and only 8 crores have access for safe water. In planning a water supply schemes, it is important to first of all identify a source of water in nearby town. The source water may be under ground, well. It may be river, stream or lake. The source may fulfil the water demand of the town or city. Proper systems should than be designed for collecting, transportation and treating this water. The treated water is distributed to the residents and industries as for their requirements through a network distribution system. Public water supply schemes may consist of Intakes or reservoirs. Water treatment plant having sedimentation tank, filtration, disinfection units, elevated tanks etc. Following are the central, state and international agencies are involved in co co-ordinating and executing the urban and rural water supply scheme in the country.

1. Central Public Health and Environment organisation provide assistance to states planning development national environment engineering research.

2. National Environmental Engineering Research Institute (NEERI) of govt of India, conducts water quality surveys and treatment processes and provides design of treatment and distribution system.

3. CSIRlaboraties provides testing facilities for water quality and maintenance.

4. Public Health engineering department under take execution of large schemes for water supply.

5. State ground water departments evaluates the quality at ground water all over the state.

6. Panchayath Raj Engineering department undertakes construction and maintenance at rural water supply schemes.

7. International organizations like UNICEF (United nations health organization) provide technical assistance and knowledge from eater supply schemes.

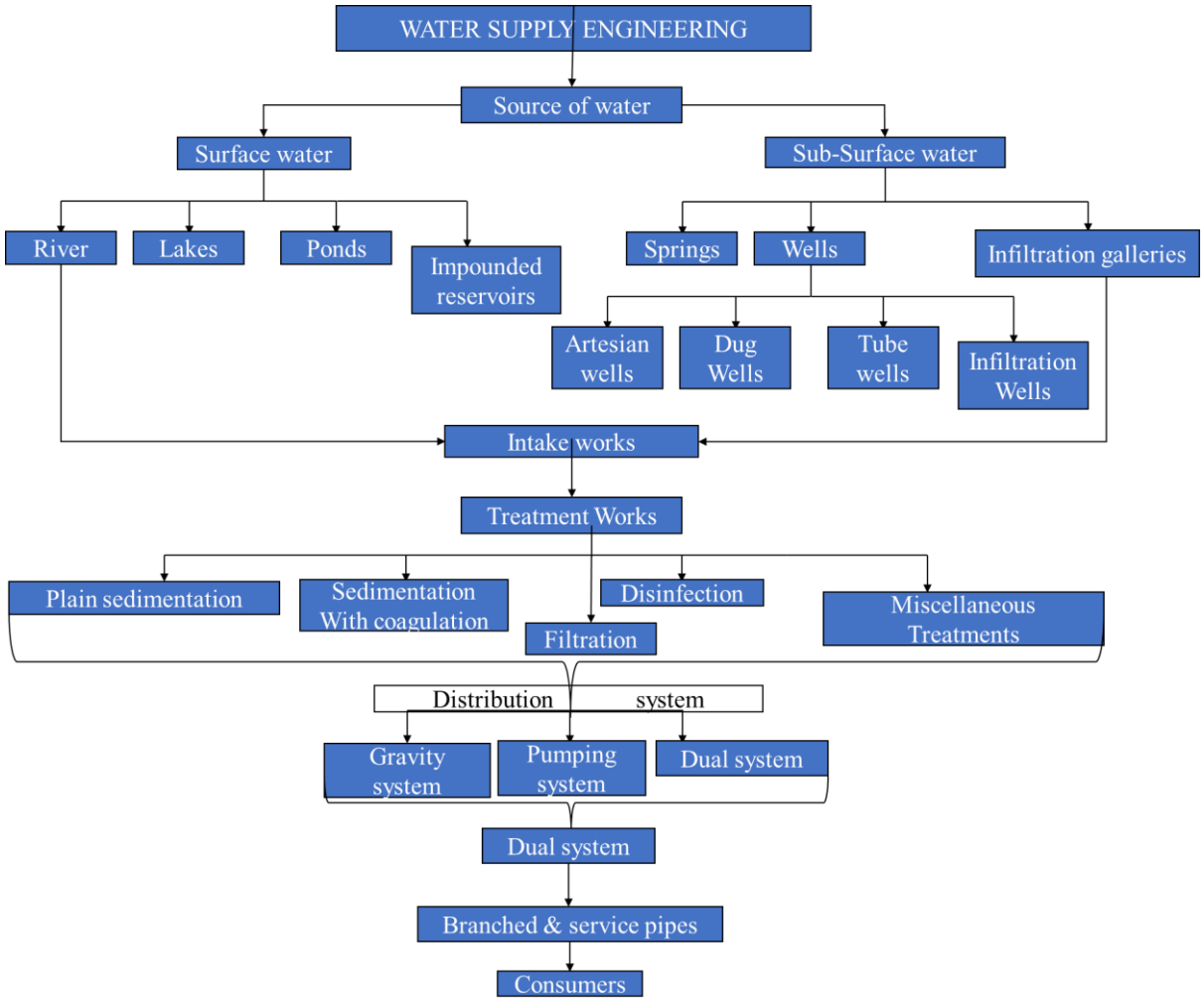

Figure 1 The complete outlines of water supply schemes

TEXT BOOK OF CONSTRUCTION MATERIALS

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UNIT 1

Introduction

Learning Objectives

After completing this unit, the student will be able to understand

- About the scope of construction technology
-

1.1 General

Engineering structures are built with both natural and processed materials. Materials used in construction, in one form or the other are known as Construction Materials or Engineering Materials or Building Materials. Stones, bricks, Sand, timber, steel, lime, cement, metals, paints, etc., are some of the commonly used construction materials.

Selection of the right material is the first and most important step to achieve quality in construction. Selection of building materials, to be used in a particular construction, is done on the basis of their properties like strength, durability, appearance, etc.

The construction professionals should have the knowledge of essential properties of various engineering materials for the selection of right material to be used in the engineering works.

The subject construction materials deals with sources, composition, properties, manufacturing, testing of various materials as per I.S.I standards and their utility.

1.2 Scope and Purpose of the Subject

Scope

The scope of this book includes wide coverage of building materials such as stones, bricks, lime, sand, mortars, concrete, asbestos, gray iron, cast iron, steel castings, aluminium, wood, architectural paints and so many others with their applications in building construction. It includes the common defects of materials and how to detect the same in them. It also encompasses the Do's and Don'ts to be followed for better durability while using certain materials.

The book is very useful for all professionals related to construction field, technocrats and students.

Purpose

Study of Construction Materials provides essential information that will help improve efficiency, productivity and economy in construction.

The purpose of study of Construction Materials is to

- Know the sources of construction materials.
- Identify and know the properties of various construction materials.
- Know how the materials are tested as per I.S.I standards.
- Know how to choose proper material from the commercially available varieties for a particular purpose of construction.
- Know common defects in the materials.
- Know various precautions to be taken while construction for better durability.

It is therefore useful for all professionals.

Construction Technology Course

Paper II : Surveying Theory

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UNIT 1

Introductio

Structure

Concept of Surveying

Purpose of Surveying

Linear and Angular measurements

Classification of Surveying

Reconnaissance, Preliminary location survey, final location survey

Learning Objectives

After studying this unit, the student will be able to

- Understand what is surveying
- Purpose and principles of suveying
- Types of Surveying
- Conversion of linear measurements from one system to other System

1.1 Concept of Surveying

Surveying is the art of determining the relative positions ofdifferent features on, above or beneath the earth's surface by taking measurements in the horizontal and vertical planes. Surveying is usually considered as a process of determining

relative positions of different points in horizontal plane. Leveling is considered as a process of determining relative positions of points in vertical plane.

Fundamental principles of surveying

The two fundamental principals of surveying are

a) To locate a new station by measurements from at least two reference points.

b) To work from whole to part.

a) Locating a new station. It is always practicable to select two points in the field and to measure the distance between them. These can be represented on paper by two points placed in a convenient position. From these reference points other points can be located by two suitable measurements in the field and drawn in their relative positions on the sheet.

The common methods of locating a point such as C with respect to two reference points such as A and B are illustrated in Fig.1.1

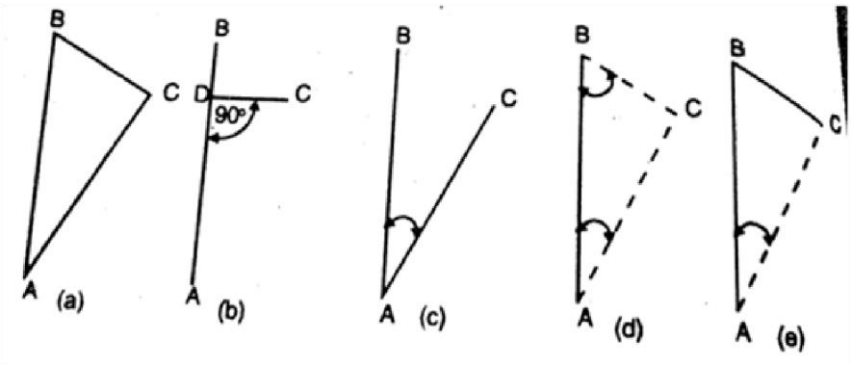

Fig.1.1

(a) Distances AC and BC are measured, and C is plotted as the intersection point of two arcs with centers A and B and radii from the measured distances.

(b) Perpendicular CD and distance AD or BD measured and C is plotted by the use of a set square.

(c) Distance AC and the angle BAC are measured, and C is plotted by means of a protractor.

(d) Angles ABC and BAC are measured, and C is plotted by a protractor or by solution of triangle ABC.

Voice controlled Humanoid Robot with artificial vision

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Abstract:

Humanoid Robot is a robot shaped in the form of a human. A Humanoid robot is used in many different fields such as education for young children, on field marketing for companies, research and development tool, entertainment and for tasks that are unsafe to be done with real people so humanoid robots are a tool for human luxury and safety. Here we are using a Humanoid Robot which is capable of Detection and Recognition of different faces or objects and can be controlled through voice. The Movement of the humanoid robot is done basing on Arduino Mega and we make mobile robot whose motions can be controlled by the user by giving specific voice commands. The speech is received by a microphone and processed by the voice module. When a command for the robot is recognized, then voice module sends a command message to the robot's controller. This paper describes a simple and easy hardware for implementation of Face, Object and speech detection and recognition. So, for this purpose we use a Library which is especially developed for image processing technique known as OpenCV(Open source Computer Vision).And for the purpose of Voice identification we use and EasyVR module attached to Arduino Mega. The system is programmed using Python programming language for object and face recognition and for controlling the mechanism of the robot we write the program in Arduino. All these data is given to the Robot such that when an person or object is identified the robot speaks the name of the person or the object and then it can be controlled by using voice commands. This Robot can be used in real time in automated systems.

Keywords: Face detection, Raspberry Pi, Opencv, Arduino Mega, Python.

I. INTRODUCTION

Human survival depends on the main five perception senses of the human sensorial mechanism defined by Aristotle as smell, hearing, touch, vision and taste. Loss of one of the main senses does not mean the death of the person, but it can significantly complicate its daily activity. It also can create discomfort and insecurity as well as requirement of company, especially in the case of vision and hearing deficiencies. The inability to recognize or identify people and objects during the stay at home or during meetings becomes a frustration (inconvenient) for blind people. It is especially unpleasant for visually impaired people when the near people are quite and do not make noises since they may not note their presence. [1],[2]

New technologies based on speech, object and face recognition have become complementary system for disabled people. Usually, they convert human environment into speech ortactile information. Blind people or people with low vision may perceive persons from the environment, familiars, friends or S colleagues at work by face detection and recognition systems. Real-time object detection face recognition, text recognition and currency bills identification are some of the large amount of developed applications.[3],[4]

So here a Robot is developed such that it has all the above mentioned features of Face and object recognition which gives speech output such that it can interact with the Humans. The system is implemented on Raspberry Pi and Arduino Mega hardware. Raspberry Pi cams have a free open code and are able to run under OpenCV libraries and C++ bindings for Python. The Raspberry Pi 5 Megapixel camera is used to capture an image. OpenCV termed as OpenSource Computer vision is the latest and popular library started by Intel in 1999. OpenCV is particularly software which is used especially for image processing in real-time. There are different versions in OpenCV and from the version OpenCV 2.4 comes with FaceRecognizer class for face recognition, such that suitable versions for Face recognition.

The robot can be controlled by using voice. Speech recognition is the process of converting speech to digital data, voice recognition is aimed toward identifying the person who is speaking. Voice recognition works by analyzing the features of speech that differ between individuals. So by this the movement of the robot can be controlled by using the voice to do things as like a human which can be used in many fields especially for blind people.

II. RELATED WORK

Robots are indispensable in many manufacturing industries. The reason is that the cost per hour to operate a robot is a fraction of the cost of the human labor needed to perform the same function. More than this, once programmed, robots repeatedly perform functions with a high accuracy that surpasses that of the most experienced human operator. Human operators are, however, far more versatile. Humans can switch job tasks easily. Robots are built and programmed to be job specific. You wouldn't be able to program a welding robot to start counting parts in a bin.

Today's most advanced industrial robots will soon become "dinosaurs." Robots are in the infancy stage of their evolution. As robots evolve, they will become more versatile, emulating the human capacity and ability to switch job tasks easily. While the personal computer has made an indelible mark on society, the personal robot hasn't made an appearance. Obviously there's more to a personal robot than a personal computer. Robots

require a combination of elements to be effective: sophistication of intelligence, movement, mobility, navigation, and purpose. Without risking human life or limb, robots can replace humans in some hazardous duty service. Robots can work in all types of polluted environments, chemical as well as nuclear. They can work in environments so hazardous that an unprotected human would quickly die.

In human beings the otoliths and semi-circular canals (in the inner ear) are used to maintain balance and orientation. In addition, humans use their own proprioceptive sensors (e.g. touch, muscle extension, limb position) to help with their orientation. Humanoid robots use accelerometers to measure the acceleration, from which velocity can be calculated by integration;[5] tilt sensors to measure inclination; force sensors placed in robot's hands and feet to measure contact force with environment; position sensors, that indicate the actual position of the robot (from which the velocity can be calculated by derivation) or even speed sensor

III. . HARDWARE

A. RASPBERRY PI:

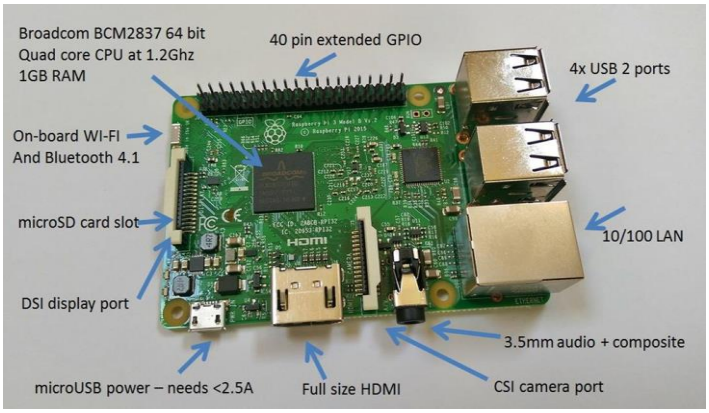

Fig-1 : Raspberry pi Board

The Raspberry Pi is the heart of the system. We make use of a Model B Raspberry Pi 3 which has a size specification as 85.60 mm × 53.98 mm (3.370 in ×2.125 in), and around 15 mm deep. It has a 1 GB built in RAM and operates at 700MHz. It has 4 USB ports and an Ethernet port. It has a total of 40 pins out of which 26 are General Purpose Input and Output pins named as GPIO and 4 supply pins out of which 2 are 5V and 2 are 3.3V and 8 Ground pins and 2 Do Not Connect (DNC) pins. So these pins can be used to program any values and can be used to interface with any of the sensors. Both Input and Output can be supplied by these pins. A HDMI port to connect to a display. The power input is 5V 2A with microUSB port. There is a MicroSD card slot which is used to load operating system in pi and used to store necessary files. There are 4 USB ports which are used to connect peripherals.

B. PI-CAMERA :

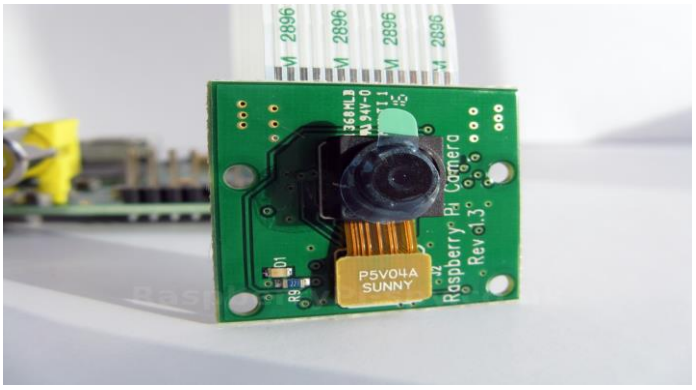

Fig-2: Raspberry pi Camera Board

The above shown figure is the Camera module of Raspberry pi camera which is and official product from Raspberry pi. We are using camera module 1 which has technical specifications of 5 Megapixel camera of resolution 2592*1944 and weighs around 3 grams which has an Omnivision OV5647 Sensor. We interface this sensor with Raspberry pi for image processing.

In an autonomous robot, it needs to perceive its environment through sensors in order to make logical decisions on how to act in the world. One important sensor in a robot is using a camera. There are different types of high-end camera that would be great for robots like a stereo camera, but for the purpose of introducing the basics, we are just using a simple cheap webcam or the built-in cameras in our laptops.

C. ARDUINO MEGA

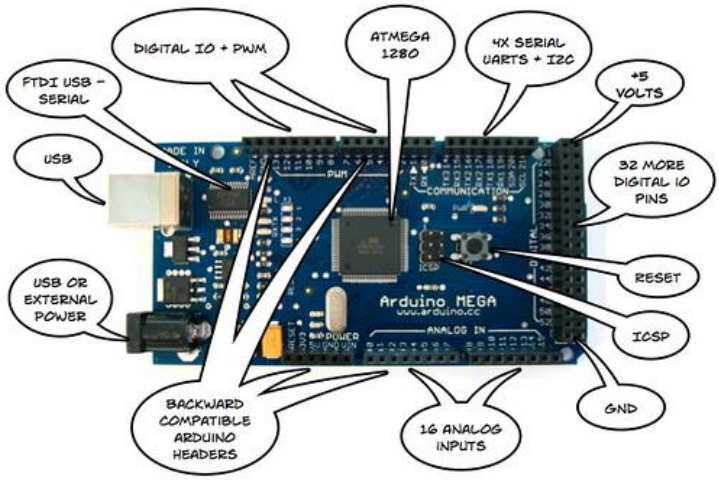

Fig-3: Arduino Mega

The Mega 2560 is a microcontroller board based on the ATmega2560. It has 54 digital input/output pins (of which 15 can be used as PWM outputs), 16 analog inputs, 4 UARTs (hardware serial ports), a 16 MHz crystal oscillator, a USB connection, a power jack, an ICSP header, and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get started. The Mega 2560 board is compatible with most shields designed for the Uno and the

former boards Duemilanove or Diecimila. This is used for controlling the servos which make the movement of the Robo.[6],[7]

The servo motors are connected to the Arduino Mega Board and programmed in such a way that they can be controlled by using the voice commands received by Easy Voice Recongnition (VR) shield. An Easy Voice Recognition shield is trained with unique voice such that the voice than has been programmed can only be used to control the movement.

D.VOICE RECOGNITION SHIELD

Fig-4: *Voice Recognition Shield*

The EasyVR Development Board can be used to program commands and sounds into an EasyVR module and quickly test it. Just put your EasyVR module on top of the DevBoard then connect the microphone and an 8 ohm speaker and you are ready to go. The DevBoard features a Freescale JS8 microcontroller programmed as a USB-Serial adapter to convert data sent between a PC and the EasyVR.[8]

IV. PROPOSED SYSTEM

The proposed system consists of both hardware units and software

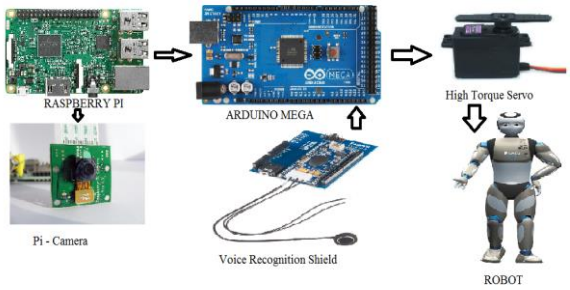

Fig-6 : Block Diagram of System

The Raspberry pi and Arduino Mega are combined in this system for interfacing with the humanoid robot and can be controlled wirelessly through voice recognition commands and the robot even had a capability of recognizing a person or and object which provides an artificial vision to the Robot and the entire system can be observed in fig: 1.

FACE RECONGITION:

The system is programmed using Python programming language. We have developed three algorithms, for face detection from a given image, from a folder of images and for real time face detection.[9],[10]

A. **Face detection** from a given image Histogram equalization is done on the input image. Haar classifier is used for image calculation process and once face is detected, a red bounding box is drawn on the detected face. Detected face and sub faces are saved and time taken for detection is printed.

B. **Face detection** from a folder of images After Histogram equalization of the given image, Haar classifier is again used for image calculation process. The difference from the first algorithm is that in addition to saving the detected face to a specified folder, the algorithm also checks if each image belongs to the source directory. If yes, the current file is named as a valid image with the file name. Otherwise, the file is named as an invalid image.

C. **Real time face detection** Video is captured real time using the webcam. As long as a face is detected, a red bounding box is drawn and the video is displayed in the output window.

Recognition is done using and image recognition algorithm which takes an image from the camera as input and verifies the image with the images in database and gives the output as image if any one matches from the database of else says the image is unrecognized. So for this recognition part we have to train the image recognition algorithm with as many as images available for each images such that the accuracy if the recognition increase. So for this part of recognition we can use a predefined algorithm or else we can develop a new algorithm of our own. Here we are creating a algorithm of my own for face recognition.

OBJECT DETECTION:

For Object detection we build a Haar Cascade with a set of “Positive” and “Negative” images. The set of positive images contains the images of the objects that we want to find. With these positive images we build a vector file which puts all these positive images together. So we can detect only images which are in the trained in the positive images set and the negative images may be thousands of images which are not positive and can be anything.

So with a single positive image we can use the command opencv_createsamples to create a bunch of positive examples, using your negative Images and positive images are superimposed on these negatives and will be angled in every direction.[11],[12] So after creating a set of positive images we can write python script which uses these set of positive images to recognize an object. So run the python script so objects can be detected

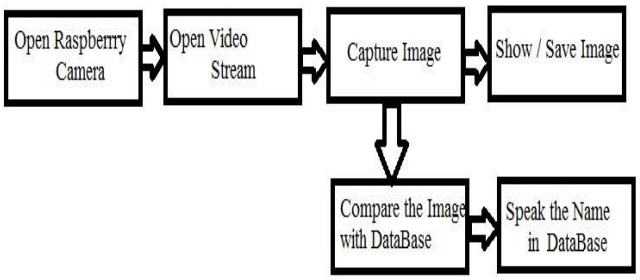

Fig-7 : Block diagram for Face and Object Recognition

So, Fig-6 shows the block diagram of face recognition and object detection using Raspberry pi. We connect Raspberry pi camera to Raspberry pi board and we write a python script using openCv library for face and object recognition and then we execute the python script such that the camera opens and captures the image from the video streaming for every second and process the captured image and compares the image within the DataBase to find out whether there are any positive samples of the captured image. If there are any positive samples then it recognizes the sample from and gives the name of the image as an audio output by using text-to–speech command in python. By this we will able to know the object or person which is in front of the Robot. Such that we can give a voice command to the robot to take further necessary action.

V. CONCLUSION

So, finally here we concluded that we are making a Humanoid robot which can interact with the human and gives a speech output which can is audible to humans such that basing on these voice output one can control the movement of the robot such that the robot can take necessary action. So, a physically handicapped people can't do there works by them and even a blind person cant recognize the person, so this robot can be used as an assistant and even to so tasks which humans cant able to do. So this robot is much more useful in these fields and not only in these fields the robot can be used in many other fields as our requirement.

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59. ANALOG TO DIGITAL CONVERTER USING SUCCESSIVE APPROXIMATION REGISTER METHOD

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The data converters are prerequisites in digital processing of analog signals. Now-a-days a larger percentage of mixed signal applications require energy limited system solutions. Analog-to-digital converters (ADCs) are critical component in such systems. Hence the stringent requirement on energy consumption requires the ADC design to be low power. Hence the circuits are to be designed with low power and low voltage to enhance the system for long sustainability, less power consumption and maintenance free operation, especially in the circuits like Analog to Digital converters (ADCs). So here is the selection of right architecture which is very crucial. Day by day more and more applications are built on the basis of power consumption. So SAR ADC will be useful for medium speed, medium resolution and low power consumption. The successive approximation technique uses a very efficient code search strategy to complete n-bit conversion in just n-clock periods. In this project, we propose a novel design for successive approximation register analog-to-digital converter. This analog-to-digital converter contains successive approximation register, Shift register, D-Flipflop, Transistor based R2R Ladder type digital-to-analog converter and a comparator. This circuit is simulated using Tanner EDA Tool.

Transistor-based R-2R ladder type digital-to Analog Converter (DAC), Transmission gate D-Flipflop, Comparator, Successive Approximation Register (SAR).

60. PROSPECTS AND ISSUES IN INTERNET MARKETING IN INDIA

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Though the Internet provides a new means for conducting business but fundamental of doing business remain unchanged. The present study has designed to examine the marketing strategy on Internet. For this purpose, it says that by integrating the Internet technology into the marketing strategy, business firms will be able to use the Internet as a tool to gain competitive advantage, this article explains Internet marketing mix, which consists five P's: product, price, promotion, place and personalization. The concept of marketing has not changed in essential has a result of using the Internet as a new marketing channel but Internet offers an unlimited opportunity for business. Internet marketing goes beyond banner advertising and e-mail marketing. It includes all the activity aimed at creating a distinct niche for the business like segmentation, differentiation etc.

ISBN No. 978-81-923607-3-7

61. DESIGN AND DEVELOPMENT OF COMPACT MICROSTRIP PATCH DUAL BAND ANTENNA FOR WIRELESS COMMUNICATIONS

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In this paper, a novel dual band microstrip patch antenna based on composite patch antenna and radiating part. By selecting a suitable offset feed position, it is feasible to provide 50 Ω characteristic impedance and thus making better impedance matching. The proposed antenna has been improved broader bandwidth by using RT Duroid substrate. The radiating part is plays a important role in creating a lower operating band (2.45 GHz) in addition to achieve miniaturization. The proposed antenna has to be fabricated with RT/Duroid substrate and dimensions of19X 22X 1.6 mm. The measured _10 dB andwidth of 200 MHz at 3.45 GHz and 990 MHz at 5.45 GHz, which is quite useful for Industrial, Scientific and Medical (ISM) and Wireless applications.

62.A SYSTEM FOR CHILD RESCUE FROM BORE WELL

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Bores yield water during drought. Hence more bore wells are drilled on the surface of the earth. When water gets depleted, the motor along with casing pipe are removed and the surface is left uncovered. As a result children fall into these abandoned bore wells and get trapped in them. It is a very difficult and risky process to rescue the child from the narrow hole of the bore well. Previously, the usual method followed is that the depth of the hole was found initially and later a parallel pit was dug to rescue the child. The digging process is expensive and time consuming. Any delay in the rescue process can cost the child his or her life. So the main objective is to design a portable system which is cost effective. It must also be capable of moving inside the narrow hole with the help of dc motors and operate according to the user's commands and avoiding any injuries to the body of the subject during the rescue process. Lack of visualization is the biggest difficulty in the rescue process. Therefore, a wireless night vision camera is attached to the system which aids in night vision. The entire system is controlled by controlled by Arduino Uno which helps in operating the dc motors based on the observations in the video streaming captured by the camera. The system also contains an Ultrasonic sensor to measure the distance at which the target is located, a temperature sensor and a gas sensor to measure the temperature and presence of any gas near the child along with water sensor to detect the presence of water. Control of the entire system is through Arduino Uno. On the whole this system can be named as a "Child Saver Machine" which helps in saving the child within a short period of time securely and without any difficulties.

ISBN No. 978-81-923607-3-7

63. LOCATING BLOOD VEESELS IN RETINAL IMAGES BY USING VESSEL ENHANCEMENT FILTERING TECHNIQUE

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MOHINI DURGA. JUPUDI
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Automatic detection of retinal blood vessels are used for the diagnosis and the treatment of different ocular diseases including diabetic retinopathy (DR), glaucoma and hypertension. The blood vessels in the fundus retinal images are detected by using novel method. The pre processing of the retinal image is done by using image enhancement technique. The vesselness filter and Adaptive thresholding methods are used to detect the vessels. The performance of the algorithm is compared and analyzed with data bases of retinal images using accuracy. Mat lab is used to Implementation of algorithm.

Keywords—Data bases, vesselness filter, Accuracy.

64.HYBRID FRACTAL SLOTTED ANTENNA FOR WIDEBAND APPLICATIONS

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1,4,5,6 UG Students, 2 Professor and HOD, 3Assistant Professor, Department of ECE, PSCMR College of Engineering

This paper presents a design of microstrip patch antenna using a combination of Koch and Minkowski with ground plane variation for wideband application. Bandwidth and gain of the proposed antenna are optimized by varying the length of the ground plane. FR4 epoxy material has permittivity of 4.4 is used as a substrate and has thickness of 1.6mm. The operating frequency of proposed antenna is 3.2 GHz. The parameters like return loss, gain and VSWR are analyzed by simulating the design using HFSS15 software. The simulated result shows the designed antenna works on multiple frequencies where return loss is below -10dB with VSWR less than 2 is the desired condition for the antenna to work efficiently for practical application. The simulated results of proposed antenna are compared with measured results and observe the reasonable agreement with each other.

ISBN No. 978-81-923607-3-7

65. ANALYSIS OF MICROSTRIP PATCH ANTENNA USING DEFECTED GROUND STRUCTURE DGS

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The microstrip patch antenna is a metallic device, which contains a radiating metallic patch on one side of the dielectric substrate and a metallic ground plane on the other side of the substrate. In this paper a microstrip patch antenna has been designed with the Defected Ground Structures (DGS), which are used to miniaturize the size of patch antennas. This antenna is designed on a FR-4 substrate having the size of 27X30 mm2 and having the dielectric constant 4.4 and thickness 1.6 mm.

66. LOW POWER CARRY LOOK AHEAD ADDER USING ADIABATIC LOGIC

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For many years, designing of high speed low power circuits with CMOS technology was a difficult challenge for research community. There are various levels at which design problem related to low power and increased demand can be addressed; these levels are - software level, architecture level, algorithm level, circuit level and process technology level. In this paper we have designed a 4-bit Look Ahead Carry Adder using CMOS technology. The objective of this paper is to put different approaches that reduce the consumption of power of Look Ahead Carry Adder. Conventional Look Ahead Carry Adder is compared with Adiabatic Look Ahead Carry Adder.

67. AUTOMATED ATTENDANCE USING FACE DETECTION AND RASPBERRY-PI

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The traditional way of taking attendance in a class includes a pen, attendance book and a person. Thus the drawbacks arise as it consumes time, needs manual work and attendance can also be manipulated. Also, there are chances of students not responding to their attendance and later claiming for the attendance. The new procedure of taking attendance using face recognition is easier and therefore overcomes all the above mentioned drawbacks. The hardware platform includes the camera to capture the image. The main controller unit is Raspberry-pi. The software platform used is Python programming language and Open CV image processing library. The working procedure starts with a buzzer giving a beep sound which aims at attaining attention of the students towards the camera to capture the image. The camera then captures the snapshot of classroom in which, the Open CV detects the faces and thus are processed and are compared with the student image database. The matched faced students are marked present and the remaining students are considered to be absent. We also need to discuss the approach of

ISBN No. 978-81-923607-3-7

camera planning based on the result of the position estimation in order to improve face detection effectiveness.

68. DESIGN AND IMPLEMENTATION OF QPSK USING REVERSIBLE LOGIC

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In this present paper BPSK modulation technique, a subsystem module of digital communication utilizing reversible logic is proposed. Later on a QPSK modulation technique using reversible logic is executed and the QPSK modulator unit will be demonstrated using VHDL code and simulation will be done to confirm functionality in the framework. The advanced digital system arrangement of QPSK is composed using a reversible logic gates which yields in low power, less required zone and less measure of delay. Reversible logic is mostly used to develop low power circuits and furthermore utilized as a part of quantum computing, optical computing and DNA computing to create zero power dispersal. QPSK is generally used modulation technique in satellite radio applications.

69.AN ENHANCEMENT TECHNIQUE TO IMPROVE BER IN WIRELESS LAN USING MIMO-OFDM

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The Multiple Input Multiple Output and Orthogonal Frequency Division Multiplexing innovation is utilized for creating different remote correspondences in wireless. The mix of MIMO-OFDM gives change in Bit Error Rate, limit and unwavering quality in wireless transmission. To accomplish high throughput, MIMO with more prominent type of balance is utilized. The MIMO-OFDM innovation in remote uses most extreme data transfer capacity with less cost. Space time block coding along with MIMO gives improvement in Bit Error Rate. The performances of the various systems are calculated by comparing the BER and SNR.

70.DESIGN OF COMPARATOR USING CMOS LOGIC, DOMINO LOGIC AND GDI TECHNIQUE

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This paper implements a 8 bit comparator circuit using CMOS logic, DOMINO logic and GDI Technique. In CMOS logic during inverter circuit operation ,when voltage level shifts from high to low and vice versa, short circuit current occurs which leads to power loss. So GDI Technique is one of the

ISBN No. 978-81-923607-3-7

power saving technique and saves power consumption. So in this paper, a comparative analysis is done among Domino logic, GDI technique and CMOS logic for which comparator is used as reference circuit. Power consumption of Domino logic, GDI Technique, and CMOS logic at different voltage levels (voltage scaling) is being compared. EDA-Tanner tool version 14, 0.25µm technology is used to implement the circuit and for simulation purpose.

Keywords—Domino Logic, CMOS comparator, GDI comparator, voltage scaling, power saving mechanism

71. EFFICIENT ENERGY MINIMIZATION TECHNIQUE FOR MASSIVE MIMO UNDER PILOT CONTAMINATION

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Pilot Contamination is the main limiting factor of TDD (Time Division Duplexing) Massive MIMO (Multiple Input Multiple Output) system which limits the user capacity of down link massive MIMO. The capacity-achieving GWBE scheme, which can achieve the identified user capacity and satisfy the SINR requirements, has been proposed and compared with the non-capacity-achieving WBE and FOS schemes. Further, this project is enhanced by varying the carrier power based on distance of the user from antenna base station. First, need to measure the distance of the user through uplink access communication link. Based on the primary parameter, power up calculations can be calibrated and assigned to each received signal for more strengthening.

72.PEAK TO AVERAGE POWER RATIO REDUCTION WITH NEAR-OPTIMAL PERFORMANCE IN OFDM

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M. Naga Lakshmi Kalyani, Assistant Professor P.S.C.M.R College of engineering and technology

Chosen mapping SLM plans are broadly used to decrease the peak-to-average power ratio (PAPR) in orthogonal frequency division multiplexing (OFDM) frameworks. Different time domain approaches have been proposed for lessening the quantity of inverse fast Fourier transforms (IFFT) tasks required to create the applicant signals in customary SLM plans. Be that it may the subsequent time domain produced signals are fairly correlated and for this reason the PAPR depletion overall performance is severely degraded. As a consequence, the existing have a look at proposes a unique PAPR reduction method in which frequency-domain phase rotation, complex conjugate, sub-carrier reversal and cyclic shifting activities are altogether utilized so as to extend the range of the candidate signals. Furthermore, to bypass the multiple-IFFT drawback, all of the frequency-domain operations square measure born-again

ISBN No. 978-81-923607-3-7

into time-domain equivalents. It's shown that the sub-carrier partitioning and re-assembling processes square measure key to realizing low-complexity time-domain equivalent operations. Moreover, it is shown on paper and numerically that the machine complexness of the planned theme is considerably less than that of the standard SLM methodology and also the PAPR reduction performance is among 0.001 decibel of that of SLM. Overall, the results indicate that among all of the low-complexity architectures planned within the literature, the tactic planned during this study most closely approximates the PAPR reduction performance of the standard SLM theme. Index Terms Orthogonal frequency division multiplexing (OFDM), peak-to-average power ratio (PAPR), selected mapping (SLM).

73. FINGERPRINT RECOGNITION FOR PERSON IDENTIFICATION AND VERIFICATION BASED ON MINUTIAE MATCHING

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ANITHA.K
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There are various types of applications for fingerprint recognition which is used for different purposes. Fingerprint is one of the challenging pattern Recognition problem. The Fingerprint Recognition system is divided into four stages. First is Acquisition stage to capture the fingerprint image. The second is Pre-processing stage to enhancement , binarization ,thinning fingerprint image. The Third stage is Feature Extraction Stage to extract the feature from the thinning image by use minutiae extractor methods to extract ridge ending and ridge bifurcation from thinning. The fourth stage is matching(Identification, Verification) to match two minutiae points by using minutiae matcher method in which similarity and distance measure are used. The algorithm is tested accurately and reliably by using fingerprint images from different databases. In this paper the fingerprint databases used are FVC2000 and FVC2002 Databases, we see that ,the FVC2002 database perform better results compare with FVC2000 database. The recognition system evaluate with two factor FAR and FRR ,In this system the result of FAR is 0.0154 and FRR is 0.0137 with Accuracy equal to 98.55%.

74. RECONFIGURABLE PATCH ANTENNA FOR WIRELESS APPLICATIONS.

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This paper deals with the design of reconfigurable patch antenna. This design includes a patch which is placed on FR-4 substrate with relative permittivity of εr=4.4. This antenna can be used for wireless applications such as 4G, Satellite, and Radar applications by reconfiguring. In this work

ISBN No. 978-81-923607-3-7

rectangular patch is designed with U-shape slotted antenna using HFSS software and pin diodes are used for reconfiguration i.e. to select different frequency band depending upon wireless application. The design antenna is fed by 50-Ω line feed and substrate having dimensions 26.32(L) x 34(W) x 1.5(h) mm3.

75. IRREDUCIBLE AND STRONGLY IRREDUCIBLE IDEALS IN A REGULAR Γ-SO-RING

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The first and third authors introduced the notions of partial Γ-semiring and Γ-so-ring. Also they introduced the notions of prime and semiprime ideals in a Γ-so-ring R. In this paper the notions of irreducible and strongly irreducible ideals in a Γ-so-ring R are introduced. It is proved that "An ideal P of a complete Γ-so-ring R is prime if and only if it is semiprime and strongly irreducible". Also it is proved that "If R is a regular complete Γ-so-ring with left unity, then an ideal P of R is prime if and only if it is irreducible".

76. INTERNET OF THINGS (IoT) OPERATED ROBOTIC ARM

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GLADYS SHARON THELLA
JAYA MADHURI DANDU
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The design analysis of an IOT based "Pick and Place" Robotic arm has been presented in this paper. This work unravels the fact that man would always want to adhere to safety precautions at workplace and even in its environment, to be able to handle some specific tasks, like sending the robotic vehicle to hazardous environment to obtain samples for chemical analysis. It works in alliance with Internet. It can be accessed by Blynk app and the application can control the movement of vehicle as well as its robotic arms. This system comprises of a Wi-Fi module which work as the receiver for vehicle. This sends commands to the microcontroller unit which execute according to the signals received by Wi-Fi module. In this work, the design of a robot is presented which will move around in four directions and

ISBN No. 978-81-923607-3-7

is equipped with gripper for pick and place operation. These operations will be controlled by a user friendly interface called NODE MCU. Depending upon the button clicked on the Blynk app, proper motional commands are given to robot by microcontroller. This project is in aimed to design and develop a mobile robot which can move according to the button pressed on App. This prototype can be employed in chemical industry for handling of chemical materials of hazardous nature, or for movement of heavy objects in any industry and where humans can't survive.

77. A NOVEL APPROACH TO DETECTION OF STATIC OBJECTS USING BACKGROUND SUBTRACTION METHOD

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This paper provides an attempt to develop an intelligent system to detect the unattended object using image processing technique. As there is a potential security threat nowadays due to the leaving unattended objects in public spaces like cinema halls, shopping malls, airports, railway stations, etc. and it is challenging task for the security personnel to check and react to the threat, there is a great need for automatic detection of unattended object in these areas. So, our project considers identifying the unattended object from a live stream of video, as the present automatic surveillance system cameras have higher processing capabilities and has made it possible to develop intelligent systems which can possibly detect the suspicious objects in the public places which can save lives of many and prevent damages of the public property. The technique we used in this proposed system is dual background segmentation approach.

78. SUSTAINABLE WATER MANAGEMENT SYSTEM FOR MULTIPLE CROPPING BASED ON IOT

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Farmers are utilizing more number of methods in smart agriculture to improve their crop production. But all the existed techniques are used for specific crop management system and cannot useful for yielding their crop according to seasonal basis and also affected due to water management system. By Influencing these factors concerned to introduce a new concept in the smart agriculture for utilizing the same equipment for different seasonal crops. The main objective of this paper is to design a new model for agricultural extension with a monitoring and controlling technique is used in smart agriculture along with to provide the water management facility in the system for growth of various types of crops based on season. This proposed concept is useful to support smallholder farmers in developing countries by providing customized information and services that increase their crop productivity with high efficiency, more profitability, and environmental sustainability without affecting the other factors,

ISBN No. 978-81-923607-3-7

able to reduce the more number of equipment for different crops by simply software compatibility in the proposed hardware and this will helpful to reduce the equipment cost for farmers.

79. THE CREATIVE ENTREPRENEUR

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Creativity and Entrepreneurship are close the related. Creativity is the generation of innovative and new ideas. Entrepreneurship is starting up of new Business on own. Entrepreneurship very risky job. Successful Entrepreneurs are all gifted with the trait of excellent creativity. Motivation is also very much related to creativity and Entrepreneurship. In this paper the relationship of creativity and Entrepreneurship has been studied in detail. Also the methods of creative Entrepreneurs have been highlighted.

80. WIRELESS ENERGY TRANSFER

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Wireless Energy Transfer (WET) is an electronic device which is used to transmit the electrical energy from one device to another device without using wires. During transmission and distribution the percentage of power loss is approximately 28% due to the resistance of wires used in grid. Due to overcome the above mentioned issue, a new technique was proposed for wireless charging and it mainly works on the principle of inductive coupling. With this idea of inductive coupling, the data can be easily transmitted through air from one device to another device eliminating the need of cables, wires, metals etc. Hence, the electrical energy can be easily delivered the wireless power to electronic devices without having any power loss during transmission and distribution. WET is very efficient, reliable and it has low maintenance cost. In this paper, Wireless Energy Transfer based product was designed with applicable safety standards and regulations and it can be used for number of applications like to charge the electronic devices like mobiles, laptops etc, at a certain distance with an efficiency of 40-95%. On the other hand, power loss of this technology is very less as compared to wired electricity transmission.

81. SYMMETRICAL AND ASYMMETRICAL MULTI-LEVEL INVERTER WITH REDUCED SWITCH COUNT FOR PERMANENT MAGNET SYNCHRONOUS MOTOR DRIVE

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ISBN No. 978-81-923607-3-7

95. A COMPARISON BETWEEN SFLA AND WAVELET BASED ZERO ACTIVE POWER TRACKING TECHNIQUE FOR IMPROVING DVR CAPABILITY AND VOLTAGE SAG

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ANDHRA PRADESH TALANGANA

In this paper we enhance the power quality problems in terms of voltage sag. To protect the system this paper proposes a concept of DVR. Here wavelet based zero active power tracking technique for enhancement of DVR capability has been proposed. The main aim is to enhance the abilities of DVR to maintain acceptable voltages and last longer during compensation. The discrete wavelet transform uses filter banks for the analysis and synthesis of a signal. By this technique we can gain the less energy being taken out of the dc-link capacitor, resulting in smaller size requirements. The Shuffle Frog Leaping Algorithm (SFLA) combines the benefits of the genetic- based and the social behavior-based PSO algorithms. Here a comparison is made between SFLA and wavelet. These systems are verified using mat lab/simulink. Here THD values are compared.

96. AN ACCIDENT OR INCIDENT REPORTING DEVICE USING IOT

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Technology is getting advanced day by day, we should utilise that in an advantageous way such that we should implement something useful in a practical way for our life. The society is in need to reach people, who are close enough to solve real problems such as accidents, incidents, unwanted situations due to many reasons are heading high and we are in red alert. In this context, we are putting an end point to the accidents/incidents in public.In the time of an accident the vehicles could send a message to the nearby ambulance drivers, police stations as a notification or as an alert in the mobile application we developed. Other general public gets it as a notification in their newsfeed in the mobile application. For this, the people who have the mobile application should have their respective user accounts in it. In this scenario, we have designed a product that can stick to the vehicle and communicate with the people mentioned above, within the seconds of the accident. This device may hold the neighbour information and also gives the geographical location and obtain the information to communicate.

97. HUMAN BRAIN TUMOR DETECTION USING FAST BOUNDING BOX AND SUPPORT VECTOR MACHINE

Ch. Amala, Asssistant professor, ECE Department, PSCMR College of Engineering & Technology
M. Nagaraju, Assitant Professor, IT Department, Gudlavalleru Engineering College,
Navvena Meka, Student, ECE Department, PSCMR College of Engineering & Technology ,
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ISBN No. 978-81-923607-3-7

As the internet is evolving rapidly in this technological world the representation of data and information over website is a must and is the front face for any organization. The website that contains everything represents the process, presentation, results, Gallery and many other facilities helps to project the website at its maximum for the better understanding of the user. In this scenario the PSCMR POLYTECHNIC College is a fastest growing organization at its best among the recent debuted colleges in the state. The organization possesses excellent facilities, experienced faculty with full of energy and talented students who are admitted from POLYCET of AP. The organization is at its best to provide the students with energetic activities and enlightening academic events along with annual extravaganza. In order to project and propel the good works of the organization a website with latest technology and advanced features can only spot light the best of the organizations and students efforts. We have decided to prepare a website that meets the standards of the latest technology and also user friendly to communicate and the student body and also this culminating society. We are using the 1HTML5, 2CSS 3, 3PHP 5, 4MYSQL 5 for Website design and database management and the XAMPP for hosting the website in local host. After completion of the local development we deploy in the respective web hosting for the POLYTECHNIC College. We also use 5WORDPRESS 3 for better development of the website.

100. TURBO CODED STBC MIMO OFDM WITH DWT BASED I/Q BALANCING SYSTEM

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The MIMO-OFDM technology is used for developing various wireless communications. The concept proposes a turbo-detected multi antenna- multi-carrier (OFDM) receiver scheme. The combination of MIMO and OFDM gives improvement in Bit error rate, capacity and reliability. To achieve high throughput, MIMO with higher orders of modulations is used. The MIMO-OFDM technology in wireless helps to use maximum bandwidth with less cost. Space time block coding along with MIMO gives improvement in Bit Error Rate. The performances of the various systems are evaluated by comparing the BER and SNR. Here a good performance in terms of low BER is achieved with the use of better channel coding technique. To improve the efficiency in terms of data transmission, Orthogonal Frequency Division Multiplexing (OFDM) is integrated into MIMO for digital modulation. DWT based MIMO-OFDM with turbo decoding overcomes the drawbacks in FFT based method like low data transmission and hard decision decoding systems. Discrete Wavelet Transform (DWT) is presented as an alternative for the Fast Fourier Transform FFT since there is no necessity for Cyclic Prefix (CP) due to the overlapping properties of DWT.

101. PROJECT STATUS INFORMATION SYSTEM(PSIS)

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ISBN No. 978-81-923607-3-7

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Paper - I Circuit Theory & Electronics Components

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Paper - II Electronic Devicws & Circuits

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Paper - III Digital Electronics & Computer Fundamentals

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As per the latest Syllabus

PROBLEM SOLVING AND PYTHON PROGRAMMING

K. Nageswara Rao
Shaik Akbar
Immadi Murali Krishna

```
from Tkinter import *
m1 = PanedWindow()
m1.pack(fill=BOTH, expand=1)
left = Label(m1, text="left pane")
m1.add(left)
m2 = PanedWindow(m1, orient=VERTICAL)
m1.add(m2)
top = Label(m2, text="top pane")
m2.add(top)
bottom = Label(m2, text="bottom pane")
m2.add(bottom)
mainloop()
```

Winners Wisdom
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Performance Preview on Image Super Resolution Using Wavelets Transform Based on Samples

Vicharapu Balaji, Ch. Anuradha, P.S.R. Chandra Murty and Grandhe Padmaja

Abstract In Image analysis with Wavelet change, super resolution is amazingly critical. In our proposed work to acquire Super resolution of the input image two prominent wavelet transforms are used namely Discrete and Stationary Wavelet Transform. In general Single frame resolution can be refined by different augmentation procedures like interpolation also leads to Blur and obscure edges. Thus, this paper input is taken as any sample image from the set and then applying basic wavelet filters as specified, i.e., DWT and SWT to get a super resolved image. Then on the super resolved image wavelet filters are applied.

Keywords Super resolution · DWT and SWT · Interpolation · High frequency (HF) · Low frequency (LF)

1 Introduction

The method to reconstruct a high resolution images assumes an essential part in various medical imaging and electronic applications as high resolution images are craved and often required. Pixel density is more in high resolution images as it gives more subtle elements of data which is required in the basic application, for example, medical diagnosis, satellite perception and mammography images. One essential methodology for single edge super determination in interjection in which

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N. Chaki et al. (eds.), *Proceedings of International Conference on Computational Intelligence and Data Engineering*, Lecture Notes on Data Engineering and Communications Technologies 9, https://doi.org/10.1007/978-981-10-6319-0_24

Automatic Brain Tumor Detection Using Fast Fuzzy C-Means Algorithm

Srikanth Busa, Navya Sree Vangala, Padmaja Grandhe and V. Balaji

Abstract Brain tumor is an uncontrolled development of tissue in any piece of the brain. The tumor is of diverse sorts, and they have disparate particular and divergent taking care of. At present, most of the existing algorithms detect only single tumors and does not serve the need for multitumor detection. This paper is to execute of simple algorithm for recognition of extent and state of multiple tumors in brain magnetic resonance images. Divergent sorts of calculation were created for brain tumor recognition. In any case, they may have a couple of deficiencies in identification and extraction. After the division, which is done through fuzzy c-means calculations the brain tumor is recognized and its definite area is distinguished. Looking at toward alternate calculations, the execution of fuzzy c-means gives a sufficient result on brain tumor images. The persistent stage is controlled by this procedure.

Keywords Brain tumor · Fuzzy C-Means · Thresholding · Median filter Region of interest (ROI)

1 Introduction

Brain, a part of the central nervous system, regulates and controls all the functionalities of the body like talking, walking, sensations, and so on. It as well has control on our thought process, emotions, intellectual, balance, and autonomic functions. The brain is a soft malleable mass consisting of two cerebral hemispheres within the skull. The brain contains cerebrospinal fluid which circulates through

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H. S. Saini et al. (eds.), *Innovations in Computer Science and Engineering*,
Lecture Notes in Networks and Systems 32,
https://doi.org/10.1007/978-981-10-8201-6_28

is equipped with gripper for pick and place operation. These operations will be controlled by a user friendly interface called NODE MCU. Depending upon the button clicked on the Blynk app, proper motional commands are given to robot by microcontroller. This project is in aimed to design and develop a mobile robot which can move according to the button pressed on App. This prototype can be employed in chemical industry for handling of chemical materials of hazardous nature, or for movement of heavy objects in any industry and where humans can't survive.

77. A NOVEL APPROACH TO DETECTION OF STATIC OBJECTS USING BACKGROUND SUBTRACTION METHOD

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Ponnuru Sravani, IVth year Student
Oleti Sravani, IVth year Student
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This paper provides an attempt to develop an intelligent system to detect the unattended object using image processing technique. As there is a potential security threat nowadays due to the leaving unattended objects in public spaces like cinema halls, shopping malls, airports, railway stations, etc. and it is challenging task for the security personnel to check and react to the threat, there is a great need for automatic detection of unattended object in these areas. So, our project considers identifying the unattended object from a live stream of video, as the present automatic surveillance system cameras have higher processing capabilities and has made it possible to develop intelligent systems which can possibly detect the suspicious objects in the public places which can save lives of many and prevent damages of the public property. The technique we used in this proposed system is dual background segmentation approach.

78. SUSTAINABLE WATER MANAGEMENT SYSTEM FOR MULTIPLE CROPPING BASED ON IOT

U. Bhagyasree1, T.Sireesha2, V. Veeranjaneyalu3, V. Lidia4,, V. Dileep5

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Farmers are utilizing more number of methods in smart agriculture to improve their crop production. But all the existed techniques are used for specific crop management system and cannot useful for yielding their crop according to seasonal basis and also affected due to water management system. By Influencing these factors concerned to introduce a new concept in the smart agriculture for utilizing the same equipment for different seasonal crops. The main objective of this paper is to design a new model for agricultural extension with a monitoring and controlling technique is used in smart agriculture along with to provide the water management facility in the system for growth of various types of crops based on season. This proposed concept is useful to support smallholder farmers in developing countries by providing customized information and services that increase their crop productivity with high efficiency, more profitability, and environmental sustainability without affecting the other factors,

ISBN No. 978-81-923607-3-7

95. A COMPARISON BETWEEN SFLA AND WAVELET BASED ZERO ACTIVE POWER TRACKING TECHNIQUE FOR IMPROVING DVR CAPABILITY AND VOLTAGE SAG

First author Second author V.PRAVEEN EEE Department SNV.GANESH EEE Department PSCMRCET VBIT ANDHRA PRADESH TALANGANA

In this paper we enhance the power quality problems in terms of voltage sag. To protect the system this paper proposes a concept of DVR. Here wavelet based zero active power tracking technique for enhancement of DVR capability has been proposed. The main aim is to enhance the abilities of DVR to maintain acceptable voltages and last longer during compensation. The discrete wavelet transform uses filter banks for the analysis and synthesis of a signal. By this technique we can gain the less energy being taken out of the dc-link capacitor, resulting in smaller size requirements. The Shuffle Frog Leaping Algorithm (SFLA) combines the benefits of the genetic- based and the social behavior-based PSO algorithms. Here a comparison is made between SFLA and wavelet. These systems are verified using mat lab/simulink. Here THD values are compared.

96. AN ACCIDENT OR INCIDENT REPORTING DEVICE USING IOT

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Technology is getting advanced day by day, we should utilise that in an advantageous way such that we should implement something useful in a practical way for our life. The society is in need to reach people, who are close enough to solve real problems such as accidents, incidents, unwanted situations due to many reasons are heading high and we are in red alert. In this context, we are putting an end point to the accidents/incidents in public.In the time of an accident the vehicles could send a message to the nearby ambulance drivers, police stations as a notification or as an alert in the mobile application we developed. Other general public gets it as a notification in their newsfeed in the mobile application. For this, the people who have the mobile application should have their respective user accounts in it. In this scenario, we have designed a product that can stick to the vehicle and communicate with the people mentioned above, within the seconds of the accident. This device may hold the neighbour information and also gives the geographical location and obtain the information to communicate.

97. HUMAN BRAIN TUMOR DETECTION USING FAST BOUNDING BOX AND SUPPORT VECTOR MACHINE

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M. Nagaraju, Assitant Professor, IT Department, Gudlavalleru Engineering College,
Navvena Meka, Student, ECE Department, PSCMR College of Engineering & Technology ,
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ISBN No. 978-81-923607-3-7

PSCMR Polytechnic Website using Open Source Wordpress CMS Tool

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***Abstract*—** As the internet is evolving rapidly in this technological world the representation of data and information over website is a must and is the front face for any organization. The website that contains everything represents the process, presentation, results, Gallery and many other facilities helps to project the website at its maximum for the better understanding of the user. In this scenario the PSCMR POLYTECHNIC College is a fastest growing organization at its best among the recent debuted colleges in the state.

The organization possesses excellent facilities, experienced faculty with full of energy and talented students who are admitted from POLYCET of AP. The organization is at its best to provide the students with energetic activities and enlightening academic events along with annual extravaganza. In order to project and propel the good works of the organization a website with latest technology and advanced features can only spot light the best of the organizations and students efforts. We have decided to prepare a website that meets the standards of the latest technology and also user friendly to communicate and the student body and also this culminating society. We are using the [1]HTML5, [2]CSS 3, [3]PHP 5, [4]MYSQL 5 for Website design and database management and the XAMPP for hosting the website in local host. After completion of the local development we deploy in the respective web hosting for the POLYTECHNIC College. We also use [5]WORDPRESS 3 for better development of the website.

Keywords*—[6]*XAMPP, Website, Wordpress, MySql, CSS, PHP., Introduction (*Heading 1*)

This template, modified in MS Word 2007 and saved as a "Word 97-2003 Document" for the PC, provides authors with most of the formatting specifications needed for preparing electronic versions of their papers. All standard paper components have been specified for three reasons: (1) ease of use when formatting individual papers, (2) automatic compliance to electronic requirements that facilitate the concurrent or later production of electronic products, and (3) conformity of style throughout a conference proceedings. Margins, column widths, line spacing, and type styles are built-in; examples of the type styles are provided throughout this document and are identified in italic type, within parentheses, following the example. Some components, such as multi-leveled equations, graphics, and tables are not prescribed, although the various table text styles are provided. The formatter will need to create these components, incorporating the applicable criteria that follow.

I. INTRODUCTION

The website for any organization is a mandatory to represent the academic and student information to be available to the user all the time. The PSCMR Polytechnic College at Vijayawada makes the difference in representing the college activities and the student performance to the society at its best. In this scenario they follow the manual procedures and record everything in a huge pile of records that sits in the shelves. Unless the user have to have some handy information in the form of a website, mobile app it would be difficult for anyone to understand and estimate the career path for student career. The polytechnic college admissions are crucial for the students who pass through SSC and have to possess POLYCET RANK. The POLYCET RANK is the key part of the admission process that differs with candidates who join with NRI or Management quota.

Proposed System: In this system we have designed a special process for the students who have enrolled and are studying the Polytechnic study for various branches of engineering. The courses available on campus are Civil Engineering, Mechanical Engineering. The students with capacity of 60 in each are worth more for the industries from small scale to huge government organizations. The website provides a unique platform that provides the students in formation, their achievements, activities, events, research, faculty credibility's etc.,

II. REQUIREMENTS SPECIFICATION

Functional Requirements: Functional Requirements specify which output file should be produced from the given file they describe the relationship between the input and output of the system, for each functional requirement a detailed description

 ISBN No. 978-81-923607-3-7

GETTING TO OPERATING SYSTEM USING FINGER GESTURE

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ABSTRACT: In today's modern age of technology the Human Computer Interaction is at its zenith of innovation. However, there is lack of interfacing technologies to manipulate real-time behaviour for operating various computer systems, software or devices. Even though to overcome this problem there are several alternative solutions, like speech recognition system, colour marker based or glove based interfacing devices. But these devices are less portable have complex structure and less accuracy. So to recover these disadvantages, we are introducing the concept of hand gesture recognition system using only web camera of laptop. This will help to use real time interfacing in digital world without any additional sensors or additional hardware. Its simplicity improves efficiency and portability of system, making the project extensively useful.

KEYWORDS: Human Computer Interaction, speech recognition, colour detection, real-time behaviour, software, hardware.

INTRODUCTION

In everyday life we use various communication tools to communicate with the world surrounding us. One might think that the word or language is the one of the most important tool that is used during communication. But there are lots of other important factors present in process of communication, these factors are as important as word or language. Some of these factors are facial expressions, eye contact, speaking tone, body movement or hand gestures. These aspects of communication help us to express our message in more natural and straightforward way than other way of communications like letters or emails does. If these elements of communications are so important in everyday interaction, why not to try and use this factors to communicate with the digital world? Some factors of communication mentioned above, are already being used to interact with computers and other systems. Some examples are face detection, speech recognition system, retina scanning biometrics and motion detection sensors. But one of the most common elements of communication is not widely used for computer interaction, hand gesture. We often use hand gesture in communication with people in real world, we can use hand gesture to interact with the digital world also. This will give the field of Human Computer Interaction the natural method to interact with computer systems, and will make interaction with computer more real-life and easy. There are some existing technologies that use hand gesture to interact with computer, but they are either highly expensive or cumbersome to use in

 ISBN No. 978-81-923607-3-7

Project Status Information System(PSIS)

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***Abstract* - The Project entitled "Project Status Information System (PSIS)" deals with the various levels of project development and will account for time used in analysis, design programming, testing and verification etc. Information systems development projects range from one-person projects that take very little time and effort to multiple person, many year efforts costing millions of dollars. The goal of Project Status Information System (PSIS) is to prevent projects from coming in late and going over budget. Project Status Information System (PSIS) gives the management a clear picture of the usage of time by various projects i.e. utilized time and unutilized time. Every activity, no matter how small or large, requires use of the commodity called time. There is no substitute for time as there are substitutes for other resources. As such it is one of the most precious of resources. By analyzing the results provided by the software they might rectify the defects in utilizing time and take remedial actions.**

Project Status Information System (PSIS) takes time sheet as input. The input may be in non-standard format differing from project to project. Project Status Information System (PSIS) produces output in the form of reports. This output gives a clear picture of the time used at various levels of the project.

In Project Status Information System (PSIS) new project information is entered by the technical manager, based on the project information project manager will assign activities to employees who are working under him.

***Keywords* – Project Status Information System (PSIS), Project management, Project monitoring, Project modules.**

I.INTRODUCTION

By manual system projects, clients, project time details information is stored in different registers, while retrieving the information it is every time taking process to search the information in each register as it is very fast through the computerized Project Time Analysis and *Reporting System.*

In manual system after each and every transaction the updating in the registers is little bit different in computerized system. The process of updating is automatic according to the new system. Human errors can be avoided due to the less manual involvement. The system provides different report and getting reports of the required requirements is very fast and easy in computerized system. But using simple web portal anyone can carry out their project related work which is the main aim of Project Status Information System (PSIS) [1]. It provides clients, users and developers a simple web portal to manage and monitor the overall project activities. All the modules of the system have a unique user id and password. Then any module can login into the system using their id and password to get authenticated further. PSIS allows the group of users to provide at least three project domains and then the system will automatically assign the team leaders [2] to the groups of

 ISBN No. 978-81-923607-3-7

Adaptive ROI Search for 3D Visualization of MRI medical images

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Abstract. **To smooth the progress of high point study of medical image data in research and in clinical medical environment, a covering for the 3D toolkit is developed to overcome the drawback of searching mechanism in medical images. The main aim of this application is to develop a scalable search engine for the three dimensional medical images. User can choose a Region of Interest (ROI) and repeatedly detect the equivalent region among all the return images. Magnetic resonance imaging (MRI) is an extremely developed medical imaging method used to extract information about the human soft tissue structure. So we propose a new algorithm, namely Cluster Based Image Search and Retrieve-CBISR, is randomly reduce searching time and provide accuracy result for MRI Images.**

Keywords: Cluster Based Image Search and Retrieve (CBISR); Medical Imaging; Image retrieval; Region Of Interest (ROI).

1. INTRODUCTION

Brain Tumor is a frequent brain disorder, according to a survey almost 60 million people effected approximately around the world. The Brain tumor is the result of a fleeting and unexpected electrical trouble of the brain and extreme neuronal free that is obvious in the MRI signal representative of the electrical action of the brain. In the proposed algorithm, a variety of brain signal are taken out from the MRI sign alone or in presentation with the MRI signal pending. The patients are clandestine into two classes, Tumor and non-Tumor. In adding, some other linked issues, Such as dataset and evaluation measures are also discussed. Lastly, the appearance of algorithms is evaluated, and their capability and limits are described.[10].

2. RELATED WORK

1. R. Eswaraiah: In telemedicine, normally medical images are transmitted via the internet. During this move tamper may be introduced deliberately or by accident into medical images. Proposed a new WaterMarking, technique in telemedicine to detect tamper in medical images while transferring in unsecured networks like the internet [4]

2. Koulaouzidis: Proposed to describe the use of MATLAB in three-dimensional reconstruction in capsule endoscopy. The programmed that were intended enables us to observe dissections of the gain 3D structure along three axes. [7]

3. Kimor: Proposed to Magnetic Resonance Imaging is turn out to be an extensively use a method of high quality medical imaging. Magnetic resonance imaging (MRI) is an higher medical imaging method as long as rich in order about the human yielding tissue structure. Mathematical morphology provides a methodical move toward to analyze.[2]

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