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Home Proceedings NCKITE 2015 Number 1 Fuzzy based Image Enhancement Method

Fuzzy based Image Enhancement Method

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Abstract

Though, there has been an enormous research contribution on image de-noising methods which are also called as image enhancement methods that actually enhance the desired information and suppress unwanted portion in a digital image. However, robustness is still a major challenge in this area of digital image processing. The performance has been improved by several research papers using fuzzy approaches. This work proposed a non-linear method for removing impulse noise, that is salt and pepper noise in digital grayscale images. The modified fuzzy based decision algorithm (MFBDA) is used. The noisy pixels are detected and then fuzzy based filtering works to correct the pixel. The proposed method performs better than conventional and other non-linear fuzzy based image enhancement methods. The values of statistical parameters such as PSNR (Peak signal-to-noise ratio), IEF (Image Enhancement factor), IQI (Image quality index) and SSIM (Structural similarity index) were obtained better as compared to conventional fuzzy filters.

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Optical and Microstructural Studies on Laser Ablated Nanocrystalline CeO_2 Thin Films[1]

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Abstract—Cerium oxide thin films are deposited on quartz substrate using pulsed laser deposition technique at a substrate temperature 973 K with an oxygen partial pressure of 0.2 Pa. The properties of the grown films mainly depend on the quality of the deposition. In the present investigation the deposition is carried out using excimer laser (KrF). To improve the microstructure and crystallite properties the deposited thin films are annealed at 1073 K for 2 h. The prepared and annealed thin films characterized by X-ray diffraction, atomic force microscope (AFM) and UV-visible spectroscopy: X-ray diffraction analysis confirmed the polycrystalline nature of the thin films. Crystallite size, lattice constant and texture coefficient are calculated. The film thickness is measured using XP-1 stylus profiler, optical band gap has been carried out and surface roughness has been estimated from AFM.

Keywords: cerium oxide, pulsed laser deposition, microstructure, optical band gap, AFM

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INTRODUCTION

Ceria and ceria-based materials have been grabbing academic and technological attention due to a wide range of their applications in heterogeneous catalysis, oxygen gas sensors etc. [1]. However, the major interest in ceria-based ceramics has focused on their application in solid oxide fuel cells (SOFC) [2]. These applications require preparation of fine powders to be used as precursors for manufacturing bulk ceramics, coatings, thin films and composites [3]. Cerium oxide thin films have received great interest due to their high transparency in the visible and near IR region [4–6]. There are plenty of thin film preparation techniques available in the literature which includes sputtering [7], sol-gel method, electron beam evaporation [8], metal organic chemical vapour deposition (MOVCD) [9], atomic layer deposition (ALD) [10], spray pyrolysis [11] and pulsed laser deposition (PLD) [12–14]. Among all the aforesaid, pulsed laser deposition technique is well known for its sample uniformity and good stoichiometry. It is the most predominant method to prepare extremely pure films, multi-component materials that are difficult to process into thin film form by other methods but they can be prepared using pulsed laser deposition technique. In the present work, we would like to report optical and microstructural studies on laser ablated nanocrystalline cerium oxide thin films.

[1] The article is published in the original.

EXPERIMENTAL PROCEDURE

The laser ablation was carried out with 99.99% cerium oxide pellet. Cerium oxide powder of 5 g formed into pellet with 20 mm diameter and 5 mm thickness at a pressure of 3 t/cm^2 using hydraulic pelletizer. The prepared pellets are again sintered at 1673 K for 8 h. The target was investigated with X-ray diffraction that confirmed its composition and structure before being put it into the chamber for the laser ablation to produce cerium oxide thin films. In pulsed laser deposition technique, the laser beam is generated outside the chamber. Also the optical instruments like lenses, mirrors and apertures, whose objective are to guide and focus the laser beam, are placed before the port of the deposition chamber. In the chamber the laser beam is directed towards the target. The absorption of the laser radiation is followed by breaking of chemical bonds in the target material and ablation of atoms, ions, electrons, molecules, atomic clusters and even bigger particles. These evaporated species form a plasma plume, which expands in the vacuum and flows towards the substrate to form the deposit. Deposition parameters are shown in the following Table 1.

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Structural, electrical and magnetic characteristics of nickel substituted cobalt ferrite nano particles, synthesized by self combustion method

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ABSTRACT

Nickel-substituted cobalt ferrite nano-particles are synthesized using a self-combustion method. Aqueous metal nitrates and citric acid form the precursors. No external oxidizing agents are used to change the pH of the precursors; this resulted in a more environment friendly synthesis. Structural, magnetic and electrical characteristics of the nano ferrites are verified using X-ray diffractometer (XRD), VSM and impedance analyzer respectively. Phase formation, particle size, lattice parameter, X-ray density, saturation magnetization, coercivity, dielectric constant and electrical activation energy as function of nickel substitution in cobalt ferrite are studied. It is shown here that the magnetic and electrical properties can be tuned by varying the nickel concentration.

1. Introduction

Nano-ferrites have drawn wide spread attention in the past few decades due to their technological importance. Applications of ferrites are in as diverse fields as catalysts [1], micro-wave devices [2], high frequency transformer core, antenna material sand magnetically-guided drug delivery devices [3–8]. Preparation methods [9,10], doping and substitutions play a crucial role in controlling the properties of ferrites. Among these magnetic materials, spinel-type ferrite nanoparticles, MFe_2O_4 (M=Mn, Co, Ni, Zn, Mg, Fe, etc.), have gained great interest because of their good electromagnetic performance and wide range of applications in diverse fields. Soft magnetic properties, high electrical resistance, low eddy-current loss, high permeability at high frequencies make nickel ferrite technologically important material. Nickel-based mixed ferrites are also investigated extensively [11,12]. Cobalt ferrite with mixed spinel structure has high coercivity and lower resistivity. Bulk nickel ferrite has inverse spinel structure. Nickel substitution into cobalt ferrites allows us to tune the magnetic and electrical properties of ferrites as per the desired application. Ni–Co–Fe alloys are reported to be magnetostrictive and used as magneto resistance sensors. These can also be used for thin film magnetic heads for high-density recording [34]. The spinel structure is face-centered cubic with each unit cell containing 32 O^{2-}, 8 Ni^{2+} /Co^{2+} and 16 Fe^{3+} ions. The lattice of oxygen ions contains 64 tetrahedral and 32 octahedral vacancy sites. 24 cations are distributed into these sites. The eight Ni^{2+} /Co^{2+} and eight Fe^{3+} cations occupy half of the octahedral sites and the other eight Fe^{3+} ions occupy eight of the 64 tetrahedral sites [13,14]. This forms the inverse spinel structure. In the mixed spinel structures the number of Fe^{3+}ions at octahedral sites increase, while that of the Fe^{3+} ions at tetrahedral sites decrease because some divalent metal ions(Ni^{2+}/Co^{2+}) enter into tetrahedral sites.

In this study we report an environmentally benign synthesis for $Co_{1-x}Ni_xFe_2O_4$ nano particles. The ferrite powders are prepared by the sol–gel self-combustion synthesis method. This method is simple and results in stoichiometrically good compounds. There are several reports on use of this method of preparation with precursor solution changed to pH values 7, 9, 10 and 11 [34]. Here we are reporting the self-combustion method without altering the pH value of the precursor solution. Structural, electrical and magnetic characterization studies are done on the prepared ferrite nano-particles. This method of preparation is more environment friendly as it produces lesser amount of pollutant gases during the synthesis.

2. Experimental

Nickel-substituted cobalt Ferrite ($Co_{1-x}Ni_xFe_2O_4$/x=0, 0.25, 0.5, 0.75and 1.0) nano-particles are prepared by sol–gel auto-combustion method. All of the chemicals used are of analytical

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INFLUENCE OF THE SUBSTRATE TEMPERATURE ON THE STRUCTURAL, OPTICAL AND THERMOELECTRIC PROPERTIES OF SPRAYED V_2O_5 THIN FILMS

VPLIV TEMPERATURE PODLAGE NA STRUKTURNE, OPTIČNE IN TERMOELEKTRIČNE LASTNOSTI NAPRŠENE TANKE PLASTI V_2O_5

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Vanadium pentoxide (V_2O_5) thin films were deposited using the spray pyrolysis technique. An aqueous solution of ammonium vanadate with a 0.05 M concentration was used for depositing V_2O_5 thin films at three different substrate temperatures on glass substrates. The structural and optical characteristics of the V_2O_5 thin films were examined with X-ray diffraction (XRD) and double-beam UV-visible spectrophotometry. The X-ray diffraction study of the V_2O_5 thin films revealed a polycrystalline nature of the orthorhombic structure with the preferred orientation of (001). The crystallite size (d) was calculated from the (001) diffraction peak using the Debye-Scherrer formula. From the optical absorbance measurements, the optical band gap (E_g) was determined. A scanning electron microscope (SEM) was used to characterize the morphology of the films. Electrical measurements of the films indicated that the resistance decreases with an increase in the substrate temperature. From the thermoelectric measurements, the Seebeck coefficient was determined.

Keywords: V_2O_5 thin film, spray pyrolysis, optical band gap, activation energy, temperature coefficient of resistance, Seebeck coefficient

Tanka plast vanadijevega pentoksida (V_2O_5) je bila nanesena s tehniko piroliznega brizganja. Za nanos tanke plasti V_2O_5 na podlago iz stekla pri treh različnih temperaturah podlage je bila uporabljena koncentracija vodne raztopine amonijevega vanadata 0,05 M. Značilnosti strukture in optične značilnosti tanke plastiV_2O_5 so bile preiskovane z rentgensko difrakcijo in z dvožarkovno UV-vidno spektrofotometrijo. Rentgenska difrakcija tanke plasti V_2O_5 je odkrila polikristalno naravo ortorombične strukture s prednostno orientacijo (001). Velikost kristalitov (d) je bila izračunana iz difrakcijskega vrha (001) z Debye-Scherrerjevo formulo. Iz meritev optične absorbance je bila določena pasovna vrzel (E_g). Za karakterizacijo morfologije plasti je bil uporabljen vrstični elektronski mikroskop (SEM). Električne meritve tankih plasti so pokazale, da se upornost zmanjšuje z naraščanjem temperature podlage. Iz termoelektričnih meritev je bil določen Seebeckov koeficient.

Ključne besede: tanka plast V_2O_5, pirolizno brizganje, optična pasovna vrzel, aktivacijska energija, temperaturni koeficient upornosti, Seebeckov koeficient

1 INTRODUCTION

Vanadium oxide is of enormous research interest because of its multivalent nature. The VO_2, V_2O_3 and V_2O_5 multivalent oxides exhibit a lot of fascinating and novel properties. Among these vanadium pentoxide (V_2O_5) has been extensively studied and because of its highest oxidation state in the V – O system, a wide band gap, a better stability and its electrothermal effects it is useful for device applications. V_2O_5 is used in various devices, such as color filters, smart windows[1] and infrared detectors,[2] as well as gas sensing[3] and catalysis.[4]

Vanadium pentoxide thin films are prepared with different physical and chemical techniques, namely, thermal evaporation,[5] pulsed-laser deposition,[6] sputtering,[7] inorganic sol-gel method[8] and spray pyrolysis.[9] Being simple and less expensive, the spray-pyrolysis technique (SPT) is a better chemical technique, carried out at a lower cost, for the preparation of thin films with a larger area. In addition, it provides an easy way to dope any element in the ratio of a required proportion through the solution medium. This method is convenient for preparing pinhole-free, uniform thin films with the required thickness.[10] In the spray-pyrolysis technique, various deposition parameters like the compressed-air pressure, the spray rate, the substrate temperature, the distance between the nozzles and the substrate and the cooling rate after deposition also affect the physical, electrical and optical properties of thin films.[11] However, few efforts have been made to systematically investigate the effects of deposition parameters on the structural, electrical and optical properties of the vanadium oxide thin films deposited with SPT.[12]

In the present investigation, a synthesis of V_2O_5 made with the spray-pyrolysis technique was investigated at

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INTERNATIONAL JOURNAL OF REVIEWS ON RECENT ELECTRONICS AND COMPUTER SCIENCE

MANAGING OF PROCESSING BIG DATA FROM PERCEPTION OF DATA MINING

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ABSTRACT:

We consider Big Data as an upcoming trend and necessity for Big Data mining is taking place in quite a lot of domains. Driven by real-world applications/ initialized by agencies of national funding agencies, managing of Big Data has revealed to be a challenging and extremely compelling task. In the systems of distinctive data mining, the mining procedures necessitate intensive computing units for data analysis. A computing proposal is, thus, essential to have resourceful access to, not less than, two types of resources such as data as well as computing processors. For mining of Big Data, since data scale is far ahead of capacity that a particular personal computer can hold, a distinctive framework of Big Data processing will rely on cluster computers by a high-performance computing platform, with a task of data mining being deployed by functioning several parallel programming tools on huge number of computing nodes. For a system of intelligent learning database to hold Big Data, the necessary key is to expand remarkably huge volume of data and make available treatments for features featured by HACE theorem. In our work we put forward an approach of HACE that distinguish features of Big Data revolution, and study a mode of Big Data processing, from data mining viewpoint. The conceptual vision of Big Data processing structure includes three tiers from with consideration on data computing known as Tier I, privacy of data and domain knowledge known as Tier II, as well as Big Data mining algorithms specified as Tier III.

Keywords: Big Data, Data mining, HACE theorem, Intensive computing units, Cluster.

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INTERNATIONAL JOURNAL OF REVIEWS ON RECENT ELECTRONICS AND COMPUTER SCIENCE

IMPROVISATION OF PRIVACY CONCERNS IN ATTRIBUTE BASIS SYSTEMS

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ABSTRACT:

Ciphertext-policy attribute-based encryption is more appropriate to disruption- tolerant network since it enables encryptors to select an access policy above attributes and in the direction of encrypting private data in access structure by means of encrypting with equivalent attributes. In ciphertext-policy ABE, the cipher text is encrypted by an access policy preferred by an encryptor, however a key is merely created regarding an attributes set. In our work, we recommend a secure scheme of attribute-based data retrieval system by means of ciphertext-policy attribute-based encryption for decentralized disruption- tolerant network where numerous key authorities handle their attributes autonomously. In the introduced scheme immediate attribute revocation improves backward/forward confidentiality of private data by dropping windows of vulnerability. The data confidentiality as well as confidentiality can be cryptographically implemented against any curious key authorities in the projected system. Problem of Key escrow is worked out by escrow-free key issuing practice that utilizes characteristic of decentralized disruption- tolerant network construction.

Keywords: Attribute-based encryption, Disruption- tolerant network, Key escrow, Attribute revocation, Key authority.

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INTERNATIONAL JOURNAL OF REVIEWS ON RECENT ELECTRONICS AND COMPUTER SCIENCE

MANAGING OF PROCESSING BIG DATA FROM PERCEPTION OF DATA MINING

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ABSTRACT:

We consider Big Data as an upcoming trend and necessity for Big Data mining is taking place in quite a lot of domains. Driven by real-world applications initialized by agencies of national funding agencies, managing of Big Data has revealed to be a challenging and extremely compelling task. In the systems of distinctive data mining, the mining procedures necessitate intensive computing units for data analysis. A computing proposal is, thus, essential to have resourceful access to, not less than, two types of resources such as data as well as computing processors. For mining of Big Data, since data scale is far ahead of capacity that a particular personal computer can hold, a distinctive framework of Big Data processing will rely on cluster computers by a high-performance computing platform, with a task of data mining being deployed by functioning several parallel programming tools on huge number of computing nodes. For a system of intelligent learning database to hold Big Data, the necessary key is to expand remarkably huge volume of data and make available treatments for features featured by HACE theorem. In our work we put forward an approach of HACE that distinguish features of Big Data revolution, and study a mode of Big Data processing, from data mining viewpoint. The conceptual vision of Big Data processing structure includes three tiers from with consideration on data computing known as Tier I, privacy of data and domain knowledge known as Tier II, as well as Big Data mining algorithms specified as Tier III.

Keywords: Big Data, Data mining, HACE theorem, Intensive computing units, Cluster.

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INTERNATIONAL JOURNAL OF REVIEWS ON RECENT ELECTRONICS AND COMPUTER SCIENCE

AN EXPOSURE TOWARDS RECOGNISING INTRUSION ATTEMPTS IN NETWORK SYSTEMS

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ABSTRACT:

For the most of efforts were made on improvisation for intrusion prevention as well as detection. To reduce the severity of attack damage that is resulting from postponed response, an automated intrusion reaction is mandatory that provides instantaneous response towards intrusion. We introduce an automated cost-sensitive intrusion response system known as response and recovery engine that model security battle among itself and attacker as hierarchical and sequential two-player stochastic game. The proposed system usually converts attack response trees into partly noticeable competitive Markov decision procedure that are solved to discover the most favourable response action against attacker. Attack-response tree put forward a recognized means to explain host system security on basis of promising intrusion and response scenarios for attacker and response engine, respectively. The system of response and recovery engine ultimate objective is to save the costs of intrusion response and system damages because of attacks that are compared to traditional solutions of intrusion response. It is computationally practical for comparatively large networks by means of prototyping.

Keywords: Response and recovery engine, Markov decision, Attack-response tree, Attacker, Intrusion prevention.

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INTERNATIONAL JOURNAL OF REVIEWS ON RECENT ELECTRONICS AND COMPUTER SCIENCE

REPRESENTING OF PRIVACY HANDLING IN SERVICES OF DATA PROVIDING

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ABSTRACT:

In Data-as-a-Service, the services symbolize calls over data sources. DaaS sits among services-based applications as well as enterprise's heterogeneous data sources which protect applications developers from directly interacting with a variety of data sources. A privacy representation for Web Services that goes ahead of conventional data-oriented models was described in our work which deals with privacy not only at data level but also service level. In our work, privacy resource is related to client, Data as well as Service provider's levels, and not only to the data provided. Contrary to existing approaches, introduced privacy representation goes ahead of conventional approaches of data-oriented privacy. The model introduced in our work is put into practice as PAIRSE task deal with privacy preservation issue in peer to peer settings of data sharing, particularly in epidemiological research where the necessity of data sharing is noticeable for making enhanced a health environment of people. Our privacy representation goes ahead of earlier privacy approaches and aims at making sure privacy compatibility of concerned services in composition devoid of any added over load. Additionally, it reconciles incompatibility of privacy concerns by means of a negotiation protocol.

Keywords: Data-as-a-Service, Privacy, Web Services, Service provider, PAIRSE.

1. INTRODUCTION:

Regardless of outsized research made towards service composition over the past few years, service composition remains as a demanding task in concerning privacy. Privacy relates to abundant domains of life

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A Comprehensive Investigation of Muscle Activations and Contractions for Behavioural Trait Detection through Human-Gait using Soft-Computing Technique

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Abstract

In the present research work a thorough investigation of muscle activation and contraction has been done for the detection of behavioural traits through human-gait images. Considerable amount of features have been extracted and relevant parameters have been computed for such investigation and a vast corpus of data sets have been developed. The data sets consist of a features and computed parameters extracted from human-gait images of different subjects of varying ages. The data sets have been formed in different covariant modes. The covariant modes mean capturing of human-gait images when the subject is walking with or without wearing shoes, and also the subject is walking with or without carrying loads and so on. Soft-computing techniques and forward-backward dynamic programming method have been applied for the best-fit selection of parameters and the complete matching process. The paretic and non-paretic characteristics have been classified through naïve baye's classification theory. The classification and recognition has been done in parallel with both test and trained data sets and the whole process of investigation has been successfully carried out through an algorithm developed in the present work. The success rate of behavioural trait detection is 89%.

Key words

Radon transforms, paretic characteristics, non-paretic characteristics, forward-backward dynamic programming, soft computing technique.

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Reliable Secure Data Storage in the Cloud Environments and De duplication

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ABSTRACT
Recent Developments in the organizations have witnessed the trend of leveraging cloud-based services for large scale content storage, processing, and distribution. Security and privacy are among Top concerns for the public cloud environments. Towards these security challenges a reliable propose and implementation on Open Stack Swift, a new client-side de duplication scheme for securely storing and sharing outsourced data via the public cloud. Security issues, requirements and challenges that cloud service providers (CSP) face during cloud engineering. Mainly this proposal has twofold. First, it ensures better confidentiality towards unauthorized users. Second, by integrating access rights in meta data file. That is, every client computes as per data key to encrypt the data that he intends to store in the cloud.

Key words- Content Storage, processing and Distribution, Security and privacy, De Duplication.

I. INTRODUCTION

Data de duplication refers to the elimination of redundant data. De duplication algorithms identify and delete duplicate, leaving only one copy (or 'single instance') of the data to be stored. However, indexing of all data is still retained should that data ever be needed. Towards this security, a new client-side de duplication scheme for securely storing and sharing outsourced data via the public cloud, an authorized user can decipher an encrypted file only with his private key. Cloud service providers (CSP) (e.g. Microsoft, Google, Amazon, Salesforce.com, Go Grid) re leveraging virtualization technologies combined with self-service capabilities for computing resources via the Internet. Today, enterprises are looking toward cloud computing horizons to expand their on-premises infrastructure, but most cannot afford the risk of compromising the security of their applications and data. Assume that there is an established secure channel between the client and the CSP. This secure channel supports mutual authentication and data confidentiality and integrity. Hence, after successfully. Authenticating with the CSP, these Cloud users share the same resources in a multi-tenant environment.

International Data Corporation (IDC) conducted a survey [1] (see Fig.1.) of 263 IT executives and their line-of-business colleagues to gauge their opinions and understand their companies' use of IT cloud services. Security ranked first as the greatest challenge or issue of cloud computing.

Corporations and individuals are concerned about how Security and compliance integrity can be maintained in this new environment. Even more concerning, though, is the corporations that are jumping to cloud computing while being oblivious to the implications of putting critical applications and data in the cloud. Moving critical applications and sensitive data to a public and shared cloud environment is a major concern for corporations that are moving beyond their data center's network perimeter defense. To alleviate these concerns, a cloud solution provider must ensure that customers can continue to have the same security and privacy controls over their applications and services, provide evidence to these customers that their organization and customers are secure and they can meet their service-level agreements, and show how can they prove compliance to their auditors.

Reliability

Servers in the cloud have the same problems as your own resident servers. The cloud servers also experience downtimes and slowdowns, what the difference is that users have a higher dependent on cloud service provider (CSP) in the model of cloud computing. There is a big difference in the CSP's service model, once you select a particular CSP, you may be locked-in, thus bring a potential business secure risk.

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International Journal of Advanced Research in Computer Science and Software Engineering

Research Paper

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Integrated for Security Issues with Possible Solutions in Cloud Computing

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Abstract: *Anomaly Software Agent system, the primary benefit of an Agent-based Information Leakage Detection system lies in the ability to modify and add detection capabilities, modularize those capabilities, and then conditionally employ such We propose an enhanced Dynamic security scheme in SaaS in Clouds using capabilities at the discretion of a central control mechanism (in our system, the Controller Agent). The use of mobile agents as described in this paper, and in general, reduces the per-host administrative complexity as once the initial agent environment is properly installed and configured; all further necessary actions are performed by the agents themselves. Additionally, mobile agents are able to provide unique reporting capabilities that, for the purposes of our research, may benefit the analysis of information leakage, protection and the underlying covert channels through which information has been leaked.*

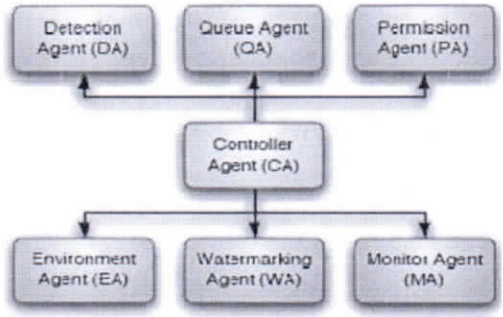
Keywords: dynamic protection schema, cloud computing, cloud service

I. INTRODUCTION

Cloud computing is an evolving concept that describes the development of many existing technologies and approaches to computing into something different. Cloud is the delivery of computing services over the Internet. Cloud services allow individuals and enterprises to use software and hardware that are managed by providers at remote locations. The cloud computing model allows access to information and computer resources from anywhere that a network connection is available. Also, it provides a shared pool of resources, including data storage space, networks and computer processing power. These components can be rapidly deployed, provisioned, implemented, and scaled up or down. It provides a model of allocation and consumption on demand. Cloud enhances collaboration, flexibility, scaling, and availability, and provides the potential for cost reduction through optimized and efficient computing. At the same time, the transformational nature of the cloud is associated with significant security and privacy risks. The fast growth of cloud computing technology introduces more of the vulnerabilities.

Security is considered to be one of the most critical aspects in cloud computing environment due to the confidential and important information stored in the cloud. Network security appliances, such as IDS and NIDS are widely deployed in advantage points and play an important role in protecting the network from attacks. Most of these appliances work without collaboration, their detection results are isolated, and cannot be collected and analyzed systematically. Therefore, we thought of a new security policy that allows the detection of distributed attacks such as deny of service (DoS) and Distributed Denial of Service (DDoS). In this paper, we present a new approach of collaborating Hybrid Intrusion Detection System (Hy-IDS) and Mobiles Agents in Cloud (offering IaaS). Our Hy-IDS based on two types of IDS; then this collaboration allows to the first type IDS which use mobile agents to collect evidences of an attack from all the attacked VM for further analysis and auditing. Moreover, after the detection of attacks by the first type of IDS this last notified second type of IDS by transfer mobile agents for generate new signatures.

Finally, the new signatures will be used to update the database IDS belonging to the neighboring domain under the direction of a cloud administrator. The rest of this paper is organized as follows: The section II presents theoretical background and discusses some related works in the area of Mobile Agent-based IDS and NIDS. The section III forms the core of this paper explains and describes in detail our approach.



International Journal of UbiComp (IJU), Vol.6, No.2, April 2015

SECURED SMART SYSTEM DESING IN PERVASIVE COMPUTING ENVIRONMENT USING VCS

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ABSTRACT

Ubiquitous Computing uses mobile phones or tiny devices for application development with sensors embedded in mobile phones. The information generated by these devices is a big task in collection and storage. For further, the data transmission to the intended destination is delay tolerant. In this paper, we made an attempt to propose a new security algorithm for providing security to Pervasive Computing Environment (PCE) system using Public-key Encryption (PKE) algorithm, Biometric Security (BS) algorithm and Visual Cryptography Scheme (VCS) algorithm. In the proposed PCE monitoring system it automates various home appliances using VCS and also provides security against intrusion using Zigbee IEEE 802.15.4 based Sensor Network, GSM and Wi-Fi networks are embedded through a standard Home gateway.

KEYWORDS

GSM, WI-Fi, Zigbee, Context-aware, Smart Sensor, and Pervasive Computing Environment, Public-Key Encryption, Visual Cryptography Scheme and MMS.

1. INTRODUCTION

Many approaches to design the user interfaces such as Interaction Design, User Experience Design (UX), Interactive Systems Design, Cognitive Ergonomics, Man-Machine Interface (MMI), User Interface Design (UI), Human Factors, Cognitive Task Design, Information Architecture (IA), Software Product Design, Usability Engineering, User-Centered Design (UCD) and Computer Supported Collaborative Work (CSCW). The PCE are getting saturated with computing and communication capability, and integrated with human users. The researchers proposed number of security systems based on new technologies such as GSM (Global System for Mobile Communication)[1], GPRS (General Packet Radio Service), Internet, Ubiquitous sensor networks and Microcontroller unit and ZigBee sensor network[5]. The PCE created by the smart Sensors [3], wireless networks and context-aware routing protocol for wireless sensor networks. Each smart Sensor node should have multipath routing protocol to automatically establish the wireless networks between Smart Nodes. This paper introduces the pervasive computing based smart home monitoring system's using VCS design; that provides secure smart services to users and demonstrates its implementation using a real time environment.

The general Biometric system [3-5] is described in figure 1. As its foresights are Authentication has to be transparent, Trusted third party may not be available, Traditional key based systems will not scale well, Trust based models work well with devices and agents, and Trust is not well defined for human user. The advantages of biometrics are Uniqueness, No need to remember passwords or carry tokens, Biometrics cannot be lost, stolen or forgotten, More secure than a long

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INTERNATIONAL JOURNAL OF REVIEWS ON RECENT ELECTRONICS AND COMPUTER SCIENCE

MANAGING OF PROCESSING BIG DATA FROM PERCEPTION OF DATA MINING

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ABSTRACT:

We consider Big Data as an upcoming trend and necessity for Big Data mining is taking place in quite a lot of domains. Driven by real-world applications initialized by agencies of national funding agencies, managing of Big Data has revealed to be a challenging and extremely compelling task. In the systems of distinctive data mining, the mining procedures necessitate intensive computing units for data analysis. A computing proposal is, thus, essential to have resourceful access to, not less than, two types of resources such as data as well as computing processors. For mining of Big Data, since data scale is far ahead of capacity that a particular personal computer can hold, a distinctive framework of Big Data processing will rely on cluster computers by a high-performance computing platform, with a task of data mining being deployed by functioning several parallel programming tools on huge number of computing nodes. For a system of intelligent learning database to hold Big Data, the necessary key is to expand remarkably huge volume of data and make available treatments for features featured by HACE theorem. In our work we put forward an approach of HACE that distinguish features of Big Data revolution, and study a mode of Big Data processing, from data mining viewpoint. The conceptual vision of Big Data processing structure includes three tiers from with consideration on data computing known as Tier I, privacy of data and domain knowledge known as Tier II, as well as Big Data mining algorithms specified as Tier III.

Keywords: Big Data, Data mining, HACE theorem, Intensive computing units, Cluster.

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INTERNATIONAL JOURNAL OF REVIEWS ON RECENT ELECTRONICS AND COMPUTER SCIENCE

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Keywords: Big Data, Data mining, HACE theorem, Intensive computing units, Cluster.

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INTERNATIONAL JOURNAL OF REVIEWS ON RECENT ELECTRONICS AND COMPUTER SCIENCE

REPRESENTING OF PRIVACY HANDLING IN SERVICES OF DATA PROVIDING

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ABSTRACT:

In Data-as-a-Service, the services symbolize calls over data sources. DaaS sits among services-based applications as well as enterprise's heterogeneous data sources which protect applications developers from directly interacting with a variety of data sources. A privacy representation for Web Services that goes ahead of conventional data-oriented models was described in our work which deals with privacy not only at data level but also service level. In our work, privacy resource is related to client, Data as well as Service provider's levels, and not only to the data provided. Contrary to existing approaches, introduced privacy representation goes ahead of conventional approaches of data-oriented privacy. The model introduced in our work is put into practice as PAIRSE task deal with privacy preservation issue in peer to peer settings of data sharing, particularly in epidemiological research where the necessity of data sharing is noticeable for making enhanced a health environment of people. Our privacy representation goes ahead of earlier privacy approaches and aims at making sure privacy compatibility of concerned services in composition devoid of any added over load. Additionally, it reconciles incompatibility of privacy concerns by means of a negotiation protocol.

Keywords: Data-as-a-Service, Privacy, Web Services, Service provider, PAIRSE.

1. INTRODUCTION:

Regardless of outsized research made towards service composition over the past few years, service composition remains as a demanding task in concerning privacy. Privacy relates to abundant domains of life

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Community Enhanced De-anonymization of Anonymized Online Social Networks

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Abstract: Social network based trust relationships present a critical foundation for designing trustworthy systems, such as Sybil defenses, secure routing, and anonymous/censorshipresilient communications. A key issue in the design of such systems is the revelation of users' trusted social contacts to an adversary – information that is considered sensitive in today's society.

In this work, we focus on the challenge of preserving the privacy of users' social contacts, while still enabling the design of social trust based applications. First, we propose Link Mirage, a community detection based algorithm for anonymizing link s in social network topologies; LinkMirage preserves community structures in the social topology while anonymizing links within the communities. LinkMirage considers the evolution of the social network topologies, and minimizes privacy leakage due to temporal dynamics of the system.

Second, we define metrics for quantifying the privacy and utility of a time series of social topologies with anonymized links. We analyze the privacy and utility provided by LinkMirage both theoretically, as well as using real world social network topologies: a Facebook dataset with 870K links and a large-scale Google+ dataset with 940M links. We find that our approach significantly outperforms the existing state-of-art.

Finally, we demonstrate the applicability of LinkMirage in real-world applications such as Sybil defenses, reputation systems, anonymity systems and vertex anonymity. We also prototype LinkMirage as a Facebook application such that real world systems can bootstrap privacy-preserving trust relationships without the cooperation of the OSN operators.

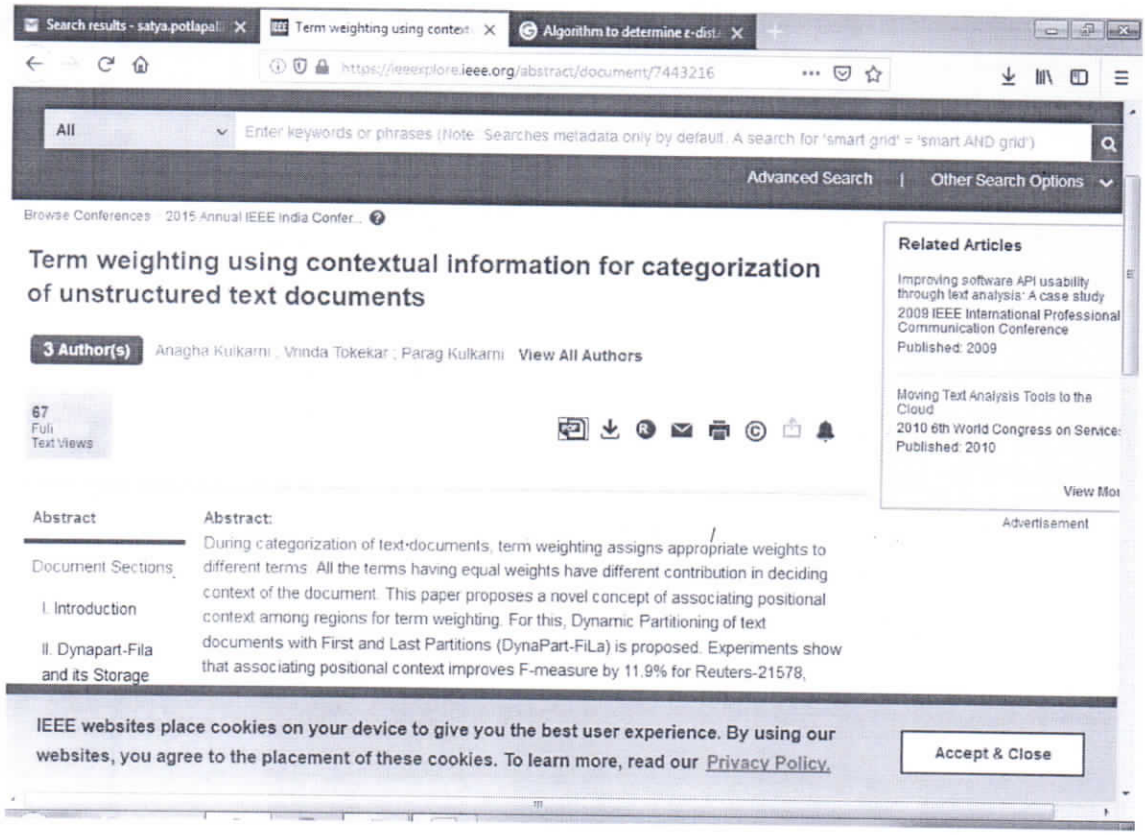
I. INTRODUCTION

Trust relationships between users in social networks can provide a foundation for the design of secure systems. Social networks have been leveraged in the design of anonymity systems [1][2], Sybil defenses [3][4], secure routing [5] [6], spam mitigation [7] and secure reputation systems [8].

However, users' social contacts are considered sensitive information in today's society. For instance, popular OSNs such as Facebook, Google+ and LinkedIn all provide privacy controls to limit access to this information, and a majority of users are exercising these options [9]. Unfortunately, the social network based systems discussed above do not protect the privacy of users' social contacts; this information is revealed to an adversary either explicitly or implicitly via traffic analysis. The lack of privacy for users' social contacts hinders the deployment of these social network based applications. For example, users facing Internet censorship, or users engaging in protest movements in Hong Kong/Ferguson/Ukraine would benefit from using their social trust relationships for anony mous and Sybil resilient communications, provided that the privacy of their social contacts is preserved.

How can we enable the design of social network based applications while preserving the privacy of users' social contacts? Previous work mostly focuses on vertex anonymity [10] [11], which does not preserve privacy of social trust relationships and thus is orthogonal to our work. Prior work on link privacy is very limited and only considers the static social network topology [12]–[13]. However, social network topologies are dynamic, and evolve over time – this introduces a new privacy challenge, as adversaries can combine information available in multiple anonymized graphs to infer users' social contacts.

In this work, we propose LinkMirage to address the challenge of preserving the privacy of users' social contacts (edge/link privacy, and not vertex privacy) in dynamic social network based systems. LinkMirage preserves community structures while anonymizing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Full
Text Views
Abstract
Document Sections
I. Introduction
II. Dynapart-Fila and its Storage
Abstract:
During categorization of text documents, term weighting assigns appropriate weights to different terms. All the terms having equal weights have different contribution in deciding context of the document. This paper proposes a novel concept of associating positional context among regions for term weighting. For this, Dynamic Partitioning of text documents with First and Last Partitions (DynaPart-FiLa) is proposed. Experiments show that associating positional context improves F-measure by 11.9% for Reuters-21578,
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RESEARCH ARTICLE OPEN ACCESS

Comparative Study on the Design of Square,Rectangular and Circular Concrete Water Tanks

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Abstract—
Reinforced concrete overhead water tanks are used to store and supply safe drinking water. Design and cost estimation of overhead water tanks is a time consuming task, which requires a great deal of expertise. This study therefore examines the efficiency of Rectangular and Circular tanks. Tanks of 30m3, 90m3, 140m3 and 170m3 capacities were used in order to draw reasonable inferences on tank"s shape design effectiveness, relative cost implications of tank types and structural capacities. Limit state design criteria were used for basic tank"s construction materials- steel reinforcement, concrete and formwork were taken-off from the prepared structural drawings. Results of the material take-offs showed that, for each of the shapes, the amount of each structural materials increase as the tank capacity increases. Also Circular-shaped tank consumed lesser individual material as compared to Rectangular ones. Hence, this will give Circular-shaped tanks a more favoured selection over the rectangular shaped tanks.

I. INTRODUCTION

One of the most important needs of any community development is a safe and adequate supply of potable water. Unfortunately, there is still a shortage of clean water supply in rural regions of many developing countries. A large proportion of the rural population in such countries, rely on the availability of man-made wells, natural springs and rivers, and recently on limited piped water supply schemes. The majority of such sources are not at economical distances from the dwellings. The effectiveness of piped water supply depends on the availability of water storage tanks (Shirima, 1996). According to Patentscope (1998), in small towns or in rapidly growing urban areas it is common place to use concrete water reservoirs of 2 to 50 megalitres or even greater as "header" or "surge" tanks to store water pumped from a remote source. The stored water is then distributed to a specific community at a generally constant head. Reinforced concrete overhead water tanks are used to store and supply safe drinking water. With the rapid speed of urbanization, demand for drinking water has increased by many folds. Also, due to shortage of electricity, it is not possible to supply water through pumps at peak hours. In such situations overhead water tanks become an indispensable part of life. As demand for water tanks will continue to increase in coming years, quick cost prediction of tanks before its design will be helpful in selection of tanks for real design. Quick cost prediction of tanks of different geometry and capacity is a difficult job and a time consuming task especially for less experienced design engineers (Pathak and Agarwal, 2003, and Pall and Pall, 2004). Many times it is required to know the cost of a tank of known capacity and geometry before its detailed design (Slatter, 1985). Gray and Manning (1964), Ludwig (2008), Manning (1967), Elliot (2006), Charles (2007) and Patentscope (1998) have also contributed to the stability and the economy of water tank design. This study attempted the achievement of some measure of the best practical solution, that is, the optimum design of elevated reinforced concrete water tanks for a specified performance in which the major objectives are to reveal the degree of effectiveness of the geometric shapes for the functional requirement, to assess the possible cost implications of each of the choices and to eventually generate Microsoft Excel Spreadsheet Design Programs as a tool for the rather quick assessment of various tank capacities.

II. DESIGN REQUIREMENT

A. IS:3370 is Indian code of practice for concrete structures for the storage of liquids.this was adopted dec 1967 .

- Part1: general requirements
- Part2:reinforcement concrete structures
- Part3:prestressed concrete structures

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ANALYSIS OF MULTISTOREYED STRUCTURES USING ETABS

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Abstract: **This paper describes the salient features of ETABS (i.e., Extended Three Dimensional Analysis of Building Systems) and its various applications in civil engineering. In this software the designer will be able to generate the geometry, define the boundary conditions, assign material properties, specify the loads and perform the analysis all conveniently and quickly. It helps in understanding the overall behaviour of the structure in terms of resulting bending moment, shear forces and deformations which can be viewed or plotted.**
This paper also presents illustration of a comparitive study of static loads for 5 and 10 storey multi storeyed structures. The significance of this work is to estimate the design loads of a structure.

Keywords: **ETABS, Bending moment, Shear force.**

I. INTRODUCTION

Computers are being extensively used to assist engineers in various aspects of design. Especially in the field of structural engineering, the early applications were in the areas of structural analysis of systems. With the advent of powerful graphic features this has been extended to various aspects of design, detailing, estimation and construction of structures.

A software integrating the analysis and design of R.C.C. Framed structures would be a highly desirable tool for trying out various alternate designs in order to arrive at an optimum design solution, which require minimum quantities of concrete and steel. With conventional programming practice, writing such a software would be quite complicated and even such software is written, it would be very difficult to modify or extend it. But, object oriented programming a conceptually new paradigm, offers several desirable features for the development of such complex application software.

There are many analysis packages available commercially for the analysis of high rise building frames. However, most of them are not easy to use with their rigid format and, it is required to key-in large amount of input data. Considerable amount of time is also required to interpret the results. In many cases it becomes really a tedious task to interpret the large volume of printed results. The main emphasis is on removing the drudgery of preparation of large amount of input data and helping in quick interpretation of the results through visual graphics.

II. SALIENT FEATURES OF ETABS

- Fully integrated interface within Windows 95/98/NT/2000
- Optimized for modeling of multistory buildings
- 3D perspective, plan, elevation, developed elevation, and custom views
- 3D model generation using plans and elevations
- CAD drawing/editing for fast, intuitive framing layout

Gray level clustering and contrast enhancement (GLC–CE) of mammographic breast cancer images

Article · January 2015
DOI: 10.1007/s40012-015-0062-z

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Infinity Sciences

System Level Behavioral Modeling of CORDIC Based ORA of Built-in-Self-Test for Sigma-Delta Analog-to-Digital Converter

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Abstract - This paper gives a novel approach CORDIC technique and test generation for the testing of mixed signal circuits component such as analog-to-digital converter. The sigma delta modulator's static parameters such as gain and offset error and nonlinearity errors as well as dynamic parameter i.e. the degradation of signal-to-noise ratio(SNR) value are directly obtained by the Simsides (a MATLAB SIMULINK tool). Then, the obtained parameters are tested by using Built-in-self-test. BIST is desirable for the VLSI system in order to reduce the cost per chip of production –time testing by the manufacture, it can also provide the means to perform in-the field diagnostic. Therefore, this paper will demonstrate a possibility to simplify modeling and simulation of testing strategy of high-resolution sigma delta modulator using MATLAB SIMULINK environment. Here, we are concentrating towards the Output Response Analyzer (ORA) of the BIST. The appropriate approximation of testing parameters reduces the difficulties in designing the complete ORA circuit. In addition, the reusable features of hardware in the computation of different parameters further improve the ORA design. A sigma delta modulation based signal generator is considered which can produce analog sinusoidal test stimuli and digital reference signal on chip. By comparing the ADC output with that of the generator reference signal, the parameter can be determined on chip based on the standard equations in the proposed simulation environment.

Keywords: *On-Chip Signal Generator; Output Response Analyzer; CORDIC.*

I. INTRODUCTION

With the increase in functionality of integrated on a single chip is basically a digital-driven trend. In order, to communicate with the outside or say analog world, analog-to-digital (A/D) and digital-to-analog (D/A) converter plays an important role towards the interfacing between analog and digital domains [3-5]. Analog-to-digital Converter (ADC) is widely used as a mixed signal device in many of the system-on-chip designs. Now a day, a trend toward integrating the complete mixed signal system onto a single chip is in heights. So with reduced size, cost and power consumption, the promotion towards the development of new generation of electronics system accomplishing all major features for the interaction of real time world to the digital processing circuitry is in its great demand.

The task of testing a VLSI chip to guarantee its functionality is exceptionally complex and often very time taking. In addition to the difficulty of testing the chips (IC) themselves, the incorporation of the chips into systems has caused test generation's cost to grow highly. The broadly recognized methodology to deal with the testing

GUASSIAN AND SPECKLE NOISE REMOVAL FROM ULTRASOUND IMAGES USING BIVARIATE SHRINKAGE BY DUAL TREE COMPLEX WAVELET TRANSFORM

By

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* Assistant Professor, Department of EEE, Shri Shankaracharya Technical Campus Bhilai, India.
** Professor, Department of EEE, Chhatrapati Shivaji Innstitute of Technology, Durg, India.
*** Professor, Department of ETC, Shri Shankaracharya Technical Campus Bhilai, India.

ABSTRACT

This paper introduces bivariate thresholding based Dual Tree Complex Wavelet Transform (DTCWT) technique to remove both Gaussian and speckle noise signals. Since both types of noises are different in nature hence it is difficult to remove them by using single filter. In this paper DTCWT approach is used to denoise ultrasound images. DTCWT based filter removes Additive White Gaussian Noise (AWGN) effectively. Since speckle noise is multiplicative in nature; it is converted into logarithmic transform before applying wavelet transform. Bivariate shrinkage (soft thresholding) function is used.

Keywords: Dual Tree Complex Wavelet Transform (DTCWT), Bivariate Thresholding, Additive White Gaussian Noise (AWGN), Speckle Noise, Peak Signal to Noise Ration (PSNR).

INTRODUCTION

Many noise reduction techniques have been developed for removing noise and retaining details in different types of images. Medical imaging [1,2] is widely used to diagnose the diseases by the physicians or radiologists in human body. Medical images are used to observe any abnormality in different parts of human body which include Magnetic Resonance Imaging (MRI), Computed Tomography(CT) scan, x-ray images, Ultra Sound(US) images[1,3] etc. Noise is undesired information that contaminates the quality of image. In this paper two noises are considered which are different in nature from each other viz. AWGN and speckle noise [1, 4, 5, 6]. AWGN is additive while speckle noise is a multiplicative type of noise signal.

An additive noise observes the rule:

$$p(x, y) = s(x, y) + n(x, y) \quad (1)$$

and multiplicative noise has:

$$p(x, y) = s(x, y) \times n(x, y) \quad (2)$$

where s(x, y) is the original signal, n(x, y) denotes the noise introduced into the signal to produce the corrupted image p(x, y), and (x, y) represents the pixel location. Gaussian noise is distributed over the signal that means each pixel in the noisy image is the sum of the true pixel value and a random Gaussian distributed noise value. It has a bell shaped probability distribution function. Speckle noise [1,4,5,6] is a multiplicative noise. This type of noise occurs in almost all coherent imaging systems such as laser, acoustics and synthetic aperture radar (SAR) imagery. Speckle noise is a multiplicative noise hence it is required to convert a noisy image to its distribution.

Wavelet transform based filtering denoises the images in terms of improvement in picture signal to noise ratio (PSNR) [2,3,8,9]. AWGN and speckle noises are different in nature but the performance of the DTCWT [1,10,11] based filter is better to remove both types of noises efficiently. Different types of thresholding [9,11,12,13,14] techniques are available but bivariate shrinkage function outperforms all of them.

1. Previous Work

Kongo et al. (2012) implemented Dual-Tree Complex Wavelet Transform (DTCWT) to remove speckle from ultrasound images by combining DTCWT with bivariate-Shrink and Visu-shrink. It improves quality of image without generating any noticeable artifact and eliminates noise

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Segmentation of Computed Tomography Images Using HMRF-EM Algorithm with K-Means Clustering

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Abstract

Disease diagnosis through medical imaging involves segmentation of acquired medical images. The medical images contain noises, artifacts, distortions due to various factors. The imaging modalities like Magnetic Resonance Imaging (MRI), Computed Tomography (CT), Digital mammography etc. provide an effective means for noninvasively mapping the anatomy of the patient. These techniques have prominently increased the knowledge of medical researchers in normal and diseased anatomy of patients and are vital tool in diagnosis and treatment planning. MRF (Markov Random Field) model is a widely accepted tool for segmentation of medical images. In this paper, we proposed a modified HMRF algorithm and its application in segmentation of colored CT image and discussed its result.

Keywords: *CT, MRI, X-ray, MRF, SPECT*

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INTRODUCTION

Medical practitioners now days are normally using digital images during disease diagnosis. Several medical imaging devices which produces image of different body organs are used during various stages of analysis. Image segmentation methods in digital image processing aimed at the removal of distortion, which may corrupt an image during its acquisition or transmission by improving its quality [1–4]. Images obtained from MRI, CT and X-ray is the most common tool used for diagnosis in medical field. The distortions due to various factors degrade the quality of image and obscures important information. Segmentation of image recovers fine details of acquired medical image that may be hidden.

The imaging equipments that are producing images of different body organs are used in various stages of analysis. X-ray based optical imaging methods such as (Magnetic Resonance Imaging) MRI, (Positron Emission Tomography) PET, (Computed Tomography) CT, (Ultra Sound) US, SPECT etc. are used in treatment of patients. The distortion of visual signal due to imperfect acquisition and transmission error is the main problem occurred in medical imaging system [2–7]. The factors like lightning, movement of patients and sensitivity of capturing devices affects images in various ways like artifacts, blur and contrast sensitivity makes visual changes which have negative impact by making image complex for interpretation. This necessitates image segmentation techniques which improve these quality parameters for example: image sharpening, edge or boundary detection.

Segmentation methods vary, depending on the specific application, imaging techniques and other factors for example: the segmentation of liver tissue has different requirements from the segmentation of brain. General imaging artifacts such as noise, partial volume effects and motion can also have significant consequences on the performance of segmentation algorithms.

Furthermore, each imaging technique has its own idiosyncrasies with which to contend. Presently, no segmentation technique exists that gives appreciable results for each medical image [3, 8, 9]. Methods do exist that are more general and can be applied to variety of data. However, methods that are specialized to particular applications can often achieve better performance by taking into account prior knowledge. Selection of an appropriate

EFFICIENT DETECTION OF SUSPECTED AREAS IN MAMMOGRAPHIC BREAST CANCER IMAGES

By

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ABSTRACT

Breast cancer is the most common type of cancers found in women all across the world. Mammography is considered as an effective tool for early detection and diagnosis of breast cancer. The most common breast abnormalities that may indicate breast cancer are masses and micro-calcifications or calcifications. The abnormalities present in breast images are characterized by using a range of features that may be missed or misinterpreted by radiologists while reading large amount of mammographic images during cancer screening process. Computer-aided diagnosis (CAD) systems have been developed to assist radiologists to provide an accurate diagnosis. An attempt has been made to improve the classification performance of CAD system in which shape and texture are used in analyzing region of interest (ROI) of mammographic images of breast. The method detects ROI by combining edge and region criteria and then feature extraction method helps extract few statistical parameters such as sensitivity and specificity to evaluate the performance of the proposed method. The sensitivity of the proposed method is 97.5% and specificity is 91.2% that produced an accuracy of 96.6%. Size of tumor is also computed and classification stage of breast cancer is identified.

Keywords - Breast cancer, Mammography image, CAD, ROI, Feature extraction, Sensitivity, Specificity

INTRODUCTION

Breast cancer cases have been increasing in India and the number of women estimated to be dying of breast cancer every year has been increasing. The cure rate of breast cancer if properly detected earlier is 97%, but unfortunately, less than 10 % of all the 150000 new breast cancers diagnosed in India every year fall into this category. Despite the lower incidence of breast cancer in India than in the US, the number of women detected at an advanced stage of breast cancer is higher. This is due to low awareness among Indian women on breast screening and self- examination [1]. The radiologist describes the features or structures in the report. If an abnormality or suspicious area is found, the patient may undergo a diagnostic mammogram or biopsy. Detection and diagnosis of breast cancer in its early stage enhances the chances for successful treatment and complete recovery of the patient. Finding an accurate and efficient breast region segmentation technique still remains a challenging problem in digital mammography [2]. Masses of breast cancer images have different density: low density, iso-densed and high density; different margins: circumscribed, micro-lobular, obscured, indistinct, speculated; and different shape: round, oval, lobular, irregular. Round and oval shaped masses with smooth and circumscribed margins indicate benign changes. Malignant mass has a speculated, rough and blurry boundary [3]. Calcifications are the deposits of calcium in breast tissue. Malignant calcifications are clustered, small, varying in size and shape, angular, irregularly shaped and branching in orientation [4]. Masses appear as dense regions of different sizes and properties [5]. Various spectrum of mammography masses are shown in Figure 1. Depending on the morphology, the masses have dissimilar malignant property [6]. The ill-defined and speculated borders exhibit higher probability of malignancy, as shown in Figure 2.

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Image processing algorithm with the help of MATLAB and VHDL

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Abstract—There area unit completely different image process algorithms area unit gift like matlab process, giant scale process (VLSI) etc. we will use differing kinds rule to method any image. MATLAB is additionally a really powerful tool for this. during this paper we are going to show the comparison between MATLAB and VLSI technique. Field Programmable Gate Arrays area unit used for implementation of Image process rule attributable to its similarity and pipelining techniques. These techniques scale back quality, prototyping price and time to plug price. This additionally simplifies debugging and verification, thence FPGA's area unit a perfect alternative for implementation of image process rule.

Keywords—FPGA, VHDL, Xilinx, MATLAB.

I. INTRODUCTION

Digital image method is very wide and dynamic house with applications of our normal of living like medicine, industries, vehicles and many of areas. Digital image method is very usefull constraints in our routines. There unit many applications of digital image method like image sweetening and object detection.[1]

We can vogue on high of application really merely ordinarily purpose laptop, but ordinarily purpose laptop demand of memory and peripheral device is quite high.

There unit a pair of sorts of technologies on the marketplace for designing any hardware, initial is Full custom vogue to boot known as ASIC(Application Specific Integrated Circuits) and second is semi custom hardware device that unit programmable devices like DSP's or FPGA's(Field Programmable Gate Arrays)[1] [2].

Full custom design(ASIC) offers highest performance among all , but the standard and thus the worth of the look is quite high. The A Full custom vogue(ASIC) style can't be modify and thus the time to style is to boot really high. ASIC designs unit utilised in high volume industrial applications.

DSPs (Digital signal processors) unit specialised microprocessors, typically programmed in C, or with any artificial language code to reinforce performance. it's compatible to terribly sophisticated maths intensive tasks like image method.

ASIC vogue ways in which are going to be used for FPGA vogue, allowing the designer to implement designs at gate level. However, typically engineers use a hardware language like VHDL or Verilog, that allows for {a voguela methodla mode} methodology similar to software package style. This software package scan of hardware vogue permits for a lower overall support worth and magnificence abstraction.[6]

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CAD for Lung Cancer Detection: A Review

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Abstract— Lung cancer is the major cause of death in the world. Computer Tomography (CT) is the best imaging modality among various modalities for the detection of small pulmonary nodule. Computer-aided-diagnosis (CAD) system using images processing is used to extract the presence of lung cancer cell in CT image of patients. In order to increase radiologist's diagnosis performance and survival of patient, several CAD techniques have been implemented and developed to improve the detection of this disease. We have studied and reviewed several methods for detection and highlighted the limitation of the methods. Many results were tested over the real time databases of the images in consultation with a senior physician and radiologist. The images were collected of lung cancer CT images from Radio diagnosis department of Pt. J. N. M. Medical College, Raipur, India for research work.

Keywords— CAD, Computed tomography CT), lung cancer, medical image, diagnosis.

I. INTRODUCTION

Lung cancer is the most common among other cancer diseases in the world. This is fatal cancer also. Despite the modest improvements in treatments during the last few decades, the prognosis of lung cancer is still poor and the survival rate is 15% in the United States, 10% in Europe and 9% in developing countries. The survival of lung cancer is closely related to the stage at the time of diagnosis, ranging from 70% for limited, stage I disease to less than 5% for stage IV disease [1-3]. Lung cancer does not show symptoms early in the disease process and is diagnosed at a late stage in a clinical setting, when the probability of cure is rare. It is expected that screening can detect lung cancer at an early stage and reduce mortality. A number of clinical trials have been performed to prove this hypothesis. The development of multi-detector spiral computed tomography (CT) has benefitted in the detection of small pulmonary nodules, the interest in lung cancer screening rekindled. The results of several observational CT screening trials showed that CT is effective in the detection of early stage lung cancer, with a percentage of stage I lung cancers ranged from 68% to 96% of all detected. Despite its efficiency on early detection, lung cancer CT screening is still not being recommended by any public health department due to the inherent biases in cohort studies, including lead-time bias, length-time bias and over-diagnosis bias. It is believed that only a randomized controlled lung cancer screening trial can eliminate these biases to the highest degree and answer the question about mortality reduction by comparing lung-cancer mortality in the screening arm (with CT screening) and the control arm (without CT screening) [3-9].

Computer-aided diagnosis (CAD) system is mainly used for detection of lung cancer. Recently, the image processing algorithms are used widely in several clinical examinations to improve early detection and diagnosis of disease. This system generally first segments the area of interest (lung) and then analyzes the separately obtained area for nodule detection in order to diagnosis the disease. Here, image segmentation plays an important role in medical image diagnosis and interpretation [10-17]. The segmentation method is applied in order to detect the cancer nodules from the extracted lung image. After segmentation, rule based technique or some appropriate method is applied to classify the cancer nodules [17-28].

To improve accuracy of CAD based systems for lung cancer detection and localization, the present work attempts to develop a CAD system that involves robust segmentation methods applied over

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A review on Image Processing Algorithms with Help of Field Programmable Gate Array

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Abstract—Field Programmable Gate Arrays are used for implementation of Image Processing Algorithm because of its parallelism and pipelining techniques. These techniques reduce complexity, prototyping cost and time to market cost. This also simplifies debugging and verification, hence FPGA's are an ideal choice for implementation of image processing algorithm. The Image processing algorithm consists median filtering and morphological processing. In this paper a review on median filtering and morphological processing is presented.

Keywords—FPGA, VHDL, Xilinx

I. INTRODUCTION

Digital image process is extremely wide and dynamic space with applications of our standard of living like drugs, industries, vehicles and plenty of areas. Digital image process is extremely useful constraints in our routines. There area unit several applications of digital image process like image sweetening and object detection.[1]

We can style on top of application terribly simply normally purpose pc, however normally purpose pc demand of memory and computer peripheral is kind of high.There area unit 2 varieties of technologies on the market for planning any hardware, initial is Full custom style additionally called ASIC(Application Specific Integrated Circuits) and second is semi custom hardware device that area unit programmable devices like DSP's or FPGA's(Field Programmable Gate Arrays)[1] [2].

Full custom design(ASIC) offers highest performance among all , however the quality and therefore the value of the planning is kind of high. The A Full custom style(ASIC) design can not be modify and therefore the time to style is additionally terribly high. ASIC styles area unit utilized in high volume industrial applications.

DSPs (Digital signal processors) area unit specialised microprocessors, usually programmed in C, or with any programming language code to enhance performance. it's similar temperament to very complicated maths intensive tasks like image process.

FPGAs have historically been designed by hardware engineers employing a Hardware style Language (HDL). the 2 hardware descriptive languages used area unit Verilog HDL (Verilog) and really High Speed Integrated Circuits (VHSIC) HDL (VHDL) that permits designers to style at numerous levels of abstraction.

So during this paper we have a tendency to propose to implement application like image sweetening and object detection on FPGA Field Programmable Gate Arrays area unit reconfigurable devices. Hardware style techniques like similarity and pipelining techniques will be developed on a

Histogram based Contrast Enhancement Method for Mammographic Breast Images

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ABSTRACT
Enhancement of images is applied over all the mammographic images before their diagnosis. The contrast of mammograms is always required to be good so that further investigation of breast cancer images is accurate. Here HE (histogram equalization), HS (histogram specification) and LE (local enhancement) methods are discussed for enhancing and improving the quality of mammographic images and their result and performance are compared with statistical parameter SNR (signal to noise ratio) and RMSE (root mean square error). In histogram techniques, the flexibility of this image processing approach is emphasized to enhance the images. The experimental result indicates that the algorithm can not only enhance image information effectively but also keep the original image luminance well enough fine structure of the image.

Keywords
Contrast enhancement, Mammographic images, Histogram, SNR (signal to noise ratio)

1. INTRODUCTION
Mammographic images do not have sufficient contrast between normal glandular and malignant tissues because of low attenuation between the tissues in the images; particularly in cases of breast cancer images of younger women that have denser breast tissues [1]. The main goal of image enhancement is to process an image so that the resulting image becomes better or more suitable than the original image for a particular application such as detection of abnormality or tumor in medical images. Image enhancement can improve the contrast or brightness of the input image by changing dynamic range of digital image features such as brightness values. Mammographic breast cancer images contain some noise and contrast is also poor due to X-ray quantum absorption. The noise in image acquisition system makes the detection of small and subtle structures more difficult [2]. It has been observed that noise increases with the increase in pixel intensities in images where local contrast and image intensity are interdependent [3]. The contrast enhancement techniques are classified as global, local and adaptive. A quantitative measurement is used to evaluate the performance of the image enhancement in terms of SNR, RMSE etc [4-7]. All of these measurements techniques were commonly used in medical image processing and applications by the radiologists in interpretation of x-ray images [8].

2. CONTRAST ENHANCEMENT
Histogram based methods for image enhancements are mostly based on equalizing the histogram of the image and increasing the dynamic range corresponding to the image [9-13]. Few important histogram methods are discussed below.

2.1 Histogram Processing
The histogram of an image generally is referred as representation of the pixel intensity values. This is drawn by using a graph that shows the number of pixels in an image at each different intensity value found in that image. For an 8-bit grayscale image there are 256 different possible intensities, and the histogram displays 256 numbers as the distribution of pixels amongst those grayscale values.

The histogram of digital image is the probability of occurrence associated with the gray level in the range 0 to 255, which can be expressed using discrete function:

$$P(r_k)=n_k/MN \quad (1)$$

$$\sum_{k=0}^{L-1} P(r_k) = 1 \quad (2)$$

where r_k, the kth gray level; n_k, the number of pixels in the image with that gray level; n, the total number of pixels in the image; and k=0,1,2,3,.....,255. The value of $P(r_k)$ gives an estimate of the probability of occurrence of gray level r_k. The image is scanned in a single pass and a running count of the number of pixels found at each intensity value is kept. This is used to construct a histogram [14].

2.2 Histogram Equalization (HE)
Histogram equalization is used to improve the contrasts in an intensity image. This is normally done for smaller images or images where almost all of the different intensity levels are represented. The equalization begins with the mask being cantered on the upper left pixel. A histogram is calculated for all pixels covered by the mask. The pixel in the centre of the mask will then be written to the resulting image. The mask is then moved one pixel to the right and a new histogram be computed. This is continued for each pixel of each row in the image [15]. When the mask is moved, the pixels that leave the mask and add the ones that enter are subtracted [16].

Let us assume that the 'r' represents the intensity of an input image in the range [0, L-1]: black to white. The intensity mapping takes place as:

$$S = T(r) \qquad 0 \le r \le L-1 \quad (3)$$

such that $T(r)$ is increases linearly in [0,L-1]. The image intensity level can be viewed as random variable in [0,L-1]. Let $P_r(r)$ and $P_s(s)$ represent the probability density function of r and s. A transformation which is used that would produce the

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Minutia Cylindrical Code Based Approach for Fingerprint Matching

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Abstract- Impression from the fingers and its matching is one of the important task of law enforcing body. Minutia extraction from the fingerprint image decides the accuracy of the matching. Method presented in this paper is also very efficient in matching the algorithm. Minutia cylindrical code(MCC) which is local descriptor of the fingerprint image is used for matching the fingerprint image. MCC, codes the local direction and distance between the minutia and hence invariants to the scale and rotation. False Acceptance ratio (FAR) and False Rejection ration(FRR) is also computed to test the accuracy of the proposed method.

Index Terms- Minutia, FFT, MCC, Euclidean distance

1. INTRODUCTION

Recognition of fingerprint is one of the complicated pattern recognition problems which is being studied for the last 40 years.

Though various efficient algorithm have been designed for fingerprint matching, it cannot be concluded that this problem has solved. Accuracy, interoperability and computational efficient algorithm are still an open issue [1] in fingerprinting matching.
Most of the current fingerprint matching algorithms are based on the minutia. Special ridge pattern are called minutia. Ridge ending and ridge bifurcation are some of the minutia.
In the past, minutia matching is considered as the two dimensional pattern matching problem for aligning the two minutia pair. This forced the researcher to find all the possible transformation for two minutia matching. Hough transform is one of the solution of this problem[2][3]. High computational cost and lack of robustness are some the problems of the global minutia matching algorithm.
In the last few years, these problem is addressed by introducing the local minutia descriptor and its matching.
The characteristics of the local minutia descriptor is such that it is invariants to the global transformation and therefore appropriate for matching without the need of global alignment.
Since local minutia descriptor based matching is based on the arrangement of the local property therefore it excludes the global feature and give better results. Global matching algorithms have some of the benefits which is not possible in case of local descriptor based matching and hence an hybrid approach can be applied to get the benefit of both the algorithm.
In this types of approach, first of all the local structure is used to match the minutia quickly and robustly. In the next step, matching at global level is performed for validation purpose.
The evaluation of the minutia matching based on the local structure passed in three stages. Stage one correspond to the earlier approach in which local structure are formed by considering the minutia lies inside some regions. In this approach no global validation was performed [4][5]. The approach adopted by the [6] and [7] comes in the second stage. [6] and [7] were the first to establishe a relationship between minutia and its neighbourhood in term of invariant angle distance and structure. In this stage, global validation was also performed .
Third stage comprises of the method proposed by Jiang and Yau[6] and Ratha [7]. These methods are variants of the method proposed by the same author. In this phase they extend the feature set of the fingerpring by incorporating local ridge, local frequency, shape its. [1] contain the exhaustive review in fingerprint matching and recognition. For further reference reader may go through the
[8]-[33].
Two types of local minutia structure were proposed. First one is based on the nearest neighbourhood while the other one is based on the fixed radius. In the nearest neighbourhood [6] approach, centre minutia is characterized by the K- closest minutia which are spatially arranged. This gives the fixed length descriptor which can be matched very efficiently. The later approach is given by the [7]. In this approach, neighbours are defined as the all the neighbours which are inside the radius R of the centre minutia. In this approach, the length of the descriptor is not fixed making it difficult to match the fingerprint locally. But this approach shows better tolerant against missing and spurious minutia.

Decomposable Pixel Filter Algorithm for Multispectral Satellite Image Denoising

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ABSTRACT

The multispectral images (MSI) convey high definition and authentic representation of the real world in comparison with the RGB or gray-scale images. MSI images help improve the performance measures for image processing and related information encoding tasks. Although, MSI images are often prone to corruption by various sources of noises either while procuring the images or during transmission. This paper studies an innovative MSI de-noising technique which is based on learning based morphology of bidirectional recurrent neural network. The algorithm used in the technique filters the inhomogeneous noisy pixels and the neighboring pixel bands with the noisy patches are corrected accordingly.

Keywords

Multi Spectral Image (MSI), Image De-noising, Spatial Regularity, Satellite Imagery, Noise Removal.

1. INTRODUCTION

The light reflectance and illumination of natural world scene is embedded with a wide stretch of array for each multi-spectral band. The MSI imaging system records the same with the aid of multi-spectrum arrays of sensors to record the multi-spectral signal. MSI images are different than standard RGB images in a sense that the usual multispectral images (MSI) convey an authentic representation of real world scenes, and hence the performance measures of remote sensing operations are enhanced. However, MSI imagery is often influenced noisy signals and thereby corrupting to the original image. Such noises can be due to the limitations of recording equipment, ranged sensitivity of sensors, calibration error and photon effects [1, 2]. Moreover, narrow bandwidth and insufficient radiance energy increases the probability of the pixel being influence by thermal noises significantly, where the energy obtained through the sensors might be low and prone to variation. These noises are inevitable to cope up with the satellite based remote sensing environment [3-5].

Generally, MSI imaging system consist of huge spectral redundancy [4], which implies towards the fact that the obtained image for a range of wide bands are correlated with each other; and the noise removal takes place as elimination of minor components of spectrum information [6-8]. Thus, denoising of MSI image remains a challenging task because of lack of robust approach. There are three basic approaches normally employed for denoising MSI images:

- 2D classical approach such as NLM (Non Local Means), K-SVD (K means-Singular Value Decomposition) and BM3D (Block Matching and 3D Filtering) [9-11] which works by using the correction algorithms applied over an image over several bands.
- Tensor based noise elimination which uses tensor factorization and can be considered as an extended form of multi-way filtering method involving Tucker factorization [4,12].The method proposed by Liu et al.[13,3] also have also produced good results but the performance is sensitive to noise types and ranges.
- By constructing small 3D cubes and then rendering it for noise removal [14]. This employs 3D cube based approach [8, 15].

2. LITERATURE SURVEY

Multispectral Imagery (MSI) is steadily growing in popularity as a digital means for remote sensing, detection of thermal signature and terrain analysis. It is commonly used as a feasible substitute for mapping applications when standard mapping & geodesy products are outdated or inadequate. The ability to record spectral reflectance in different portions of the electromagnetic spectrum is the primary & foremost attribute of MSI, which can be useful in a number of applications. However, thermal effects, sensor saturation, and transmission errors generate a noise that deteriorates the quality and are also affected by multiplicative noise in addition to additive noise; thereby creates a bad effect on image analysis.

Generally, the characteristics of such noises influencing the images depend on the type of the image to be processed and on the system of acquisition. This type of noise can be represented as a normal distribution (Gaussian), zero-mean random process which requires continuously varying thresholding based on the dependency between magnitude quaternionic coefficients in local neighborhoods and phase regularization through Gabor filters. Ultimately, noise reduction is mainly involves hours of tedious manual work to process by the researchers to put forth the denoised image for further analysis. The block-matching & BM3D algorithm is one of the high performance and an effective techniques for MSI denoising [16-19]. In addition with the Color BM3D algorithm meant for standard RGB images trailing the method based on luminance chrominance color transformation is applied over RGB data in order to exploit the self-similarity for structurally shared by the three color components [16, 20]. This requires a locally adaptive data driven spectral manipulation, where a basic approach to this problem, was assessed by several authors [21-25,27,29]; it meant to derive spectral components and its inter correlation through the method of finding principal component analysis[26,27].

Thus, in the study we summarize several denoising algorithm for the scenario of multi-spectral image denoising using several statistical and learning based techniques; for which its performances is measured based on the two factors such as its computational workload and the denoised output image which readily aid the users in the process to use the well-known algorithms for detection, segmentation, and classification.[30,31] The study tend to give a very good division of the coefficients in terms of magnitude and three-phase angles to generalizes better the concept of analytic signal to image promises an easy transformation for the

Improved SNR and ENOB of Sigma-Delta Modulator for Post Simulation and High Level Modeling of Built-in-Self-Test Scheme

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ABSTRACT

This paper demonstrates a Graphical User Interface (GUI) of 2nd order Sigma-Delta modulator which is used to check the non-idealities of the circuit in BIST Scheme. High -level modeling of the parameters is done with the help of Matlab - Simulink and the parameters like Signal to Noise Ratio (SNR) & Effective Number of Bits (ENOB) are calculated. The value of SNR and ENOB are found to be 108 dB and 18 bits respectively Since the value of SNR and ENOB are increased it makes the respective signal power and Resolution better. The Graphical User Interface (GUI) of overall model has been successfully implemented after modeling of non-idealities for BIST technique not only avoids depending on the off-chip automatic test equipment (ATE) and reduces the test cost but increases the controllability and observability of the circuit under test also that improves the fault coverage .

Keywords

Sigma-Delta ADC; GUI; SNR; ENOB; BIST; DUT.

1. INTRODUCTION

Compared with Nyquist-rate ADCs, oversampling ADCs gets high resolution in spite of analog components it uses digital signal processing for performing analog-to-digital conversion and due to the oversampling delta-sigma ADCs, they do not need steep roll-off anti-alias filtering[4-5], which is the prime requirement of Nyquist-rate ADCs. Thus, higher order with better and higher linearity are hard to design and manufactured.

2. LOW-PASS SIGMA DELTA ADC

ADC based on 2nd order sigma-delta modulators is attractive for VLSI implementation because they are resistant to the circuit non- idealities and component mismatch. However, issues such as clock jitter and excess loop delay become great challenges to the designer [16], especially at high sampling frequency. Special design should be applied to overcome these problems. Sigma-delta modulation has demonstrated to be very suited interfaces for the implementation of various Analog to Digital in many electronic systems such as audio, biomedical . fig.1 below showing the different type of ADC in different frequency range.

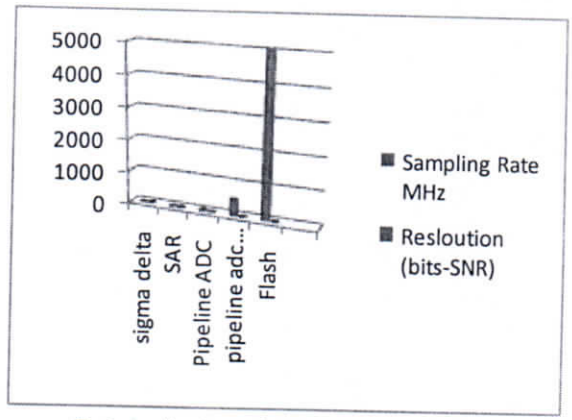

Fig 1: Applications of different types of ADC

Testing ADCs is mostly limited to conventional static and dynamic testing. Signal generator needs to generate a stimulus with resolution at least four times higher than that of the ADC under test in static test whereas in the case of dynamic testing, the test stimulus with known characteristics is applied to the ADC.

However, testing such high-precision ADCs requires high performance and expensive test-platforms, which further increases the test cost and final product as compared to all the kinds of ADCs[20]. One novel solution to this problem is built-in-self-test (BIST) which utilizes on-chip resources to perform on-chip stimulus generation and response acquisition under the BIST approach. With the advent of complementary-metal-oxide-semiconductor (CMOS) technology, BIST using digital signal; processing has become a viable solution for analog mixed-signal and SoC[22].

SIMULATION STUDY OF RF SIGNAL AND POWER LEVEL VARIATIONS IN RAYLEIGH AND RICIAN FADING CHANNEL MODELS

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Abstract:

The signal from transmitter to receiver is required to have little variation on original information (signal) in terms of changes in amplitude, frequency and phase of the signal. Sincethe characteristics of the channel are dynamic, the transmitted signal undergoes fading and attenuation.Faithfull reproduction of signal is a great challenging task in wireless communication system. Fading occurs by either reflections, diffractions, scattering orDopplershift, inter symbol interference etc. Inthis paperwe discuss/evaluate/show how the signal varies with reflections.Rayleigh and Ricianfading model are used and simulated results with variation of f_d is presented

Keywords:Rayleigh Fading, RicianFading,Doppler shift

I.INTRODUCTION

In wireless communication the signal travels from transmitter to receiver would take diversity or different paths, i.e., propagation paths are different being chosen by the signal from transmitter to receiver. Channel characteristics are differ from one path to the other path, channel fading arises from so many factors like, reflection, diffraction, attenuation, atmospheric ducting , ionosphere reflection, correlative functions of transmitter , receiver and channel parameters.

Usually Rayleigh fading is considered as a reference statistical model to measure the propagation effete in wireless devices. Rayleigh fading is the sum of two Uncorrelated Gaussian random variables. If there is no dominant propagation between transmitter and receiver in line of sight environment, Rayleigh fading is applicable, such as the process will have zero mean and phase evenly distributed between and2π radians.

The envelope of the channel will be Rayleigh distributed. In addition to the scattering if there is strong dominant signal present at the receiver than is called as Rician fading. In line of sight environment the mean of the random process will no longer be zero, power level of dominant path varies, such a condition is called Rician fading.

II. Literature survey

Channel estimation [2] done by using minimize mean square error in orthogonal frequency division multiplexing signals which are corrupted by fading. Has defined[8] and examined fading rapidity in channel. wireless communication experiences packet drops, which mightlead to a serious down grade of the safe ty critical connected vehicle approach applications. Thus, the wireless communication simulators used to emulate the communications performance need to be properly [3] calibrated to replicate the real world vehicular communication environments.

The parameters such as source velocity and outage probability play [9] very important role in the performance analysis and design of the digital communication systems over the multipath fading environment.the outage probability in the Rician fading channel is lower than that of the Rayleigh fading channel, which is due to the presence of line-of-sight path in the Rician channel.

As the vehicle speed of the user increases, fading also increases. While speed increases most of the signal goes below threshold and amount of fading increases. Sum of sinusoids[11] statistical simulation models directly used to generate multiple uncorrelated fading waveforms for frequency selective channels, multiple input and multiple output channels, found good agreement among these.

III. OBJECTIVES OF THIS WORK

This study can be used to

(i)Analyze the performance of a mobile device under varying channel fading scenarios

(ii) Determine the RF Signal, power variations, outage probability for different channel fading scenarios

(iii) Design decision feedback equalizer / channel compensator based on the values measured in (ii)

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EFFECT OF WIND FORCES ON MULTISTOREYED STRUCTURES

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Abstract—***It is very essential to consider the effects of lateral loads induced from wind and earthquakes in the design of reinforced concrete structures, especially for high-rise buildings. A computer program is developed to analyze the structural buildings behavior under wind pressure defined considering all factors in the codes. In present study, Multi-storey buildings with 5 and 10 storeys have been modeled using software package ETABS. This paper also deals with the effect of the variation of the building height on the structural response of the building. The significant of this work is to estimate the design loads of a structure which is subjected to wind loads in a particular region.***

Keywords— ETABS, Lateral loads, Earthquakes, Reinforced concrete structures, High-rise buildings, Wind pressure.

I. INTRODUCTION

In order to design a structure to resist wind loads, the forces on the structure must be specified. The exact forces that will occur during the life of the structure cannot be anticipated. Most National Building Codes identify some factors according to the boundary conditions of each building considered in the analysis to provide for life safety. A realistic estimate for these factors is important, however the cost of construction and therefore the economic viability of the project is essential.

Many times, wind engineering is being misunderstood as wind energy in india. On the other hand, wind engineering is unique part of engineering where the impact of wind on structures and its environment being studied. More specifically related to buildings, wind loads on claddings are required for the selection of the cladding systems and wind loads on the structural frames are required for the design of beams, columns, lateral bracing and foundations. For the analysis purpose a 5 and 10 storey building is selected. The wind loads are estimated by Indian code IS: 875 (Part-3) - 1987.

A. Wind analysis

The basic wind speed (Vb) for any site shall be obtained from IS 875 and shall be modified to get the design wind velocity at any height (Vz) for a chosen structure.

$$Vz = Vbk1k2k3$$

Where, Vz = design wind speed at any height z in m/s, Vb= Basic wind speed in m/s, k1 = probability factor (risk coefficient), k2= terrain roughness and height factor and k3= topography factor.

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RESEARCH ARTICLE OPEN ACCESS

Design of Simulink Model For OSTBC And Performance Evaluation of Ieee 802.16 OFDM Phy Link With And Without Space-Time Block Coding For Wireless Communication

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ABSTRACT

Because of the rapid growth of Digital Communication in recent years, the need for high speed data transmission is increased. Orthogonal frequency division multiplexing (OFDM) technique is suitable for high speed communication because of its resistance to ISI (inter symbol interference) and it utilizes the bandwidth efficiently. OSTBCs are an attractive technique for MIMO wireless communications. They exploit full spatial diversity order and enjoy symbol-wise maximum likelihood (ML) decoding. However, they offer no coding gain. The combiner for OSTBC at the receiver side provides soft information of the transmitted symbols, which can be utilized for decoding or demodulation of an outer code.TCM is a bandwidth efficient scheme that integrates coding and modulation to provide a large coding gain. Concatenating TCM with an inner code will usually offer an improved performance. This illustrates the advantages of an OSTBC and TCM concatenation scheme: the spatial diversity gain offered by OSTBC and the coding gain offered by TCM. For comparison, two reference models containing only TCM or OSTBC are also provided. The diversity and coding gains of the concatenation scheme over the reference models can be clearly observed from the simulation results. Also this includes an end-to-end baseband model of the physical layer of a wireless metropolitan area network (WMAN), according to the IEEE® 802.16-2004 standard . More specifically, it models the OFDM-based physical layer, called Wireless MAN-OFDM, supporting all of the mandatory coding and modulation options.

Keywords: OFDM, MIMO, OSTBC, TCM, BER

I. INTRODUCTION

In earlier days we have Single Input Single Output (SISO) systems available, which consist of a single transmitting antenna and a single receiving antenna of a communication system. Speed of such SISO systems is not sufficient for the applications which require very high speed due to the increasing demands of the user in communication systems like internet etc. In order to attain high speed wireless reliable communication links we have the need for MIMO systems. Later on we have different configurations like SIMO, MISO [2] etc.

MIMO has multiple Input transmitting antennas and multiple output receiving antennas and, finally, MIMOmultiuser (MIMO-MU), which refers to a Configuration, that comprises a base station with multiple transmit/receive antennas interacting with multiple users, each with one or more antennas [1]. MIMO antenna cam be either at transmitter or receiver or at both. This system consists of several antenna elements, plus adaptive signal processing, at both transmitter and receiver. It exploits multipath instead of mitigating it [3]. Multiple input multiple output (MIMO) systems have attracted much attention because of high spectrum efficiency. The single most effective technique to accomplish reliable communication over a wireless channel is diversity which attempts to provide the receiver with the independently faded copies of transmitted signal with the hope that at least one of the replicas will be received correctly.

Diversity may be realized in many different ways, including frequency diversity, time diversity, antenna diversity, modulation diversity, etc. Many different detection techniques are developed to get the diversity gain introduced by MIMO techniques [9]. One of them is spatial Diversity technique in terms of Spatial Time Block codes (STBC) which is a old technique .As an advancement of this codes we designed Orthogonal Space Time Block codes and compared the performance with OSTBC to achieve high BER.

The paper is organized as follows. In Section II, importance and requirement of OSTBC is highlighted, Next, different STBC techniques are explained in Section III. The simulation methodology is discussed in Section IV. Results and analysis are presented in Section V. Finally, Section VI concludes this paper.

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Smart Antennas for Communications in Line of Sight

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ABSTRACT: Throughout the world, including the United States, there is significant research and development on smart antennas for wireless systems. This is because smart antennas have tremendous potential to enhance the performance of future generation wireless systems as evidenced by the antennas' recent deployment in many systems. It covers smart antenna technology, including software and system aspects. First the two basic types of smart antennas, adaptive and phased arrays are described and then their current use and proposed use in future wireless systems is discussed. A smart antenna is therefore a phased or adaptive array that adjusts to the environment. That is, for the adaptive array, the beam pattern changes as the desired user and the interference move; and for the phased array the beam is steered or different beams are selected as the desired user moves. We describe and analyze adaptive antenna array technology to improve naval communications systems to beyond line-of-sight at microwave frequencies by using the ducting layer as a leaky waveguide and the adaptive array to resolve and coherently combine multipath in this layer.

KEYWORDS: Adaptive, Array, Naval, HF , Ducting

1 .INTRODUCTION

Future wireless systems generally may require higher data rates with better coverage for a wide variety of users operating with a large variety of different systems. To achieve these goals, greater power, interference suppression, and multipath mitigation are needed. As users operate at higher data rates, they need higher power for adequate reliability. For higher bandwidths, higher carrier frequencies that have higher propagation and circuit losses are needed. So some way to recover this power must be developed. In addition, interference suppression is needed for higher capacities. Particularly as higher frequency reuse is used to increase capacity, there will be more .Co-channel interference, which requires greater interference suppression. Finally, multipath mitigation to have more reliable and robust communications is necessary. We can provide a communications link between naval assets using a ship-based communications suite using adaptive array antennas under various fading and shadowing conditions. The ability to provide line-of-sight (using the 4/3 earth model) is limited to relays (airborne platforms) located at higher altitudes for these extended ranges; during operations and under hostile conditions this high altitude requirement may be prohibitive (see Figure 1). Aerosols cause high losses in the ducting layer; however, the ducting layer can be considered a leaky waveguide, lossy due to the absorptive effects of the sea surface and penetration of the duct by the EM field.

Even with these losses, a marine boundary ducting layer acting as a waveguide propagation advantages over isotropic propagation. Since the ducting layer is a disk that confines the signal to the volume of a disk, the spreading loss for the duct-confined propagation path is linearly proportional to the range, versus at least the range squared for line of line-of-sight propagation. For specific conditions, the use of ducting can provide as much as a 40 dB stronger signal at 1000 km. However, the ducting layer also creates multipath, since the duct acts as a leaky waveguide, with the signal reflecting or being absorbed into the sea surface (the bottom of the duct) and the ill-defined duct transition. Additionally, intersymbol interference (ISI) due to the arrival of separate copies arriving will degrade the signal; one or more delayed copies of a pulse may arrive at the same time as the primary pulse for a subsequent bit.

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Android-Based Vehicle Monitoring and Tracking System Using ARM7 and CAN Technology.

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Abstract: This system aims to provide a low-cost means of monitoring a vehicle's performance and tracking by communicating the obtained data to a mobile device via Bluetooth. Then the results can be viewed by the user to monitor Temperature, Humidity and Fuel consumption .Data can also be sent to the vehicle's maintenance department which may be used to detect and predict faults in the vehicle. This is done by collecting live readings from the engine control unit (ECU) utilizing the vehicle's built in liquid crystal display (LCD). An electronic hardware unit is built to carry-out the interface between the vehicle's LCD board and a Bluetooth module, which in part communicates with an Android-based mobile device. The mobile device is capable of transmitting data to a server using GPS (global positioning system) and cellular internet connection.

I. Introduction

As the increasing of the amount of electronic controller and instruments in the modern automotive, the vehicle reliability is largely influenced by the complexity of circuit deployed in the control system. The high quality vehicles use CAN (Controller Area network) bus system to link all the controllers in a system to achieve unified management. This leads to easy data sharing and interoperability between different control systems. However, due to the complexity of vehicles, for example, sensors are deployed throughout the entire vehicle with diversified standards, the data within an automotive system are varied such as complex data format, heterogeneous data so to fulfill the gap among different systems one gateway is used which is a bridge to connect various CAN bus with different speed ratio. Furthermore, the vehicle system requires the information for the maintainer and driver. It is necessary to design an efficient, reliable gateway as well as its data processing system.

ARM is high-performance, low-cost, low power consumption RISC processor. For a variety of areas, such as embedded control, multimedia, DSP and mobile applications, ARM architecture is the first RISC microprocessor designed for low-budget market. The embedded operating system will be subject to certain restrictions. But because of its low price, reliability and other factors, it is widely used in various industrial controllers. The most important is the physical connectivity reduction. Only two wires are required to manage a different system, which necessitates an exchange of data between them. This is only done by networking using CAN (Controller Area Network) bus. CAN (Controller Area Network) is a serial bus system, which was originally developed for automotive applications in the early 1980's.Controller Area Network (CAN) is a serial communication protocol that may be used to transfer up to 8 data bytes within a single message. CAN offers high-speed communication rate up to 1M bits/sec thus allows in real-time control applications. In addition, the error confinement and the error detection feature make it more reliable in noise critical environment. Common sensor data such as Engine control unit, Anti Lock System and etc., are available on the network, so the data can be shared, thus eliminating the need for redundant sensors.

CAN is a two-wire, Half duplex, high-speed network system and is well suited for high-speed applications using short messages With the help of the ARM Controller. We can control range of functions. The CAN transceiver is used to transmit and receive data. These Transceivers are specially designed for high-speed differential data transmission between the CAN controllers and the physical differential bus lines.

In this project we are designing a monitoring application within the vehicle by using CAN bus which will be used for communicating between 4 different nodes. Node1 is used for monitoring and giving instructions to the remaining nodes based on the sensors information and also it will be used as display in front of the driver so driver can control the vehicle from his position. In node4 fuel gauge is used for measuring the fuel percentage present in the vehicle fuel tank and it will update to the node1. Node2 consists of temperature sensor which is used to measure the engine temperature and update this information to the node1. Node3 is having the humidity sensor which is used to measure the humidity values and send those values to the node1. In node1 all sensors set points are programmed. After reading the nodes information then it is giving proper instruction to the related sub nodes. Based on the instruction LED will ON in that specific node. In this application Node1 will make use of ARM processor and all other nodes

Journal of Computer Science

Original Research Paper

Multicast Node Communication Using Virtual Queue with Process Scheduling

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Abstract: Multicast technique is used to transmit node data from one source node to many destination nodes simultaneously and establish a communication in the network. In multicasting communication, node network packet collision occurrence is a frequent problem in real time network system. The node packet collision avoidance using virtual queue with process scheduling is discussed in this study and proposed central queue process scheduling and intermediate leader node avoids traffic and congestion avoidance between node packets in this research work. The results are discovered reliable path for node network approach using node location to receive an accurate and shortest path of destination nodes.

Keywords: Virtual Queue Acknowledgement, Multicast Node Network, Process Scheduling

Introduction

The multicasting network is multi-hop relaying in which messages are sent from the source node to the destination node by relaying through the intermediate nodes. In multi-hop wireless networks, communication between two end nodes is carried out through a number of intermediate nodes whose function is to relay information from one node point to another. The focused on multicast networks, in which relaying nodes are in general mobile and communication needs are primarily between nodes within the same network. It is a dynamic autonomous wireless network formed by node with wireless communication capability, where each node carries out basic operation routing and packet forwarding. All nodes are connected dynamically in an arbitrary manner, where no default router available and potentially every node behaves as a router (must be able to forward traffic on behalf of others) as well as an end host. Frequent changes in node network topology and features in multicast network leads to communication disturbance like packet collisions i.e., network colliding allowing intermediate nodes to combine packets before forwarding. If network having the ability to analyze the direction on which packets would send without collision which improves the throughput of the system.

Previous Work

Faritha and Ramachandran (2012) proposed efficient bandwidth estimation management for VoIP concurrent multipath transfer. The multiple paths for packet dispersion are computed using grouping-based multipath selection and bandwidth on each path is elected based on west wood approach. Dongmei and Guangzhi (2008) proposed bandwidth management technique for multiprotocol label switched networks to assign and contribute to the bandwidth among many switched backup paths. It distributed nodes to estimate the shared bandwidth. Dimitrova *et al.* (2011) presented to compare the performance of different packet schedulers for different uplink transmission in a node network with relaying and measure the performance to use the received power at the base station, instantaneous data rates and mean flow transfer times. Amir *et al.* (1998) proposed an efficient packet scheduling algorithm. It also presented Packetized Dynamic Batch Co-Scheduling

Single Instruction Multiple Data (SIMD) approach for Efficient Fractal Image Encoding using Distributed Architecture

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Abstract

There are several application areas where tremendous computational resources are required including image processing, big data and genetic mapping which are computing resources are required to solve such complex problems and powerful computing environment is needed. An emphas w solve. Single Instruction Multiple Data approach is followed using distributed architecture. The research compares the perf e compression requires more computing power to solve in lesser time. In this paper, the parallel algorithms are developed using Distributed Fractal Image Encoding Architec Data approach

Keywords

Distributed Fractal Image Compression, Computing Nodes, Encoding and Contractive Mapping.

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Improving node to node communication to achieve throughput paripex

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ABSTRACT

Mobile Ad-hoc Networks (MANETS) consists of a collection of mobile nodes without having a central coordination. In MANET, node mobility and dynamic topology play an important role in the performance. MANET provide a solution for network connection at anywhere and at any time. The major features of MANET are quick set up, self organization and self maintenance. Routing is a major challenge in MANET due to it's dynamic topology and high mobility. Several routing algorithms have been developed for routing. This paper studies the AODV protocol and how AODV is performed under multiple connections in the network. Several issues have been identified. The bandwidth is recognized as the prominent factor reducing the performance of the network. This paper gives an improvement of normal AODV for simultaneous multiple connections under the consideration of bandwidth of node.

KEYWORDS

Mobile Network, MANET, AODV, Multiple connections, Bandwidth

1. INTRODUCTION

Nowadays, the usage of wireless devices like PDA, mobile phones and laptops etc. and its available services are tremendously increased. MANET plays important roles in these areas. MANET is a self organizing network without having a predefined infrastructure. The nodes are highly mobile in MANET and the placement of node is depend on the application and is unpredictable. The nodes and routing are not controlled by any central node or router. Every node is acting as router or source and the control is distributed among nodes.

In spite of this rising interest MANET imposes serious challenges in routing due to unlimited mobility of nodes and dynamic topology. Due to the limited bandwidth path failures are very frequent in nature. This degrades the performance and throughput of the network significantly. Wireless medium is shared by many users so number collisions, contentions and chances of errors are more in MAMET. Routing is a major issue in MANET due to the lack of central coordination. In multicasting the same message is transmitted to group of nodes. In multiple connection scenario one node send different messages to different destinations. Multiple connections are used when one node want to communicate to another node at the same time if it wants to share some files to some other node. In this case the same node should connect to two different nodes.

Reestablishment also depends on computational power, battery power and time. Simultaneous attempt to establish more than one connection could deteriorate the performance of the network adversely. If more than one connection exists from a node in the network then which connection should establish first is an important question. In order to avoid this crisis we can assign priorities to each process. Real time process has given higher priorities.

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FPGA Based Design and Implementation of Image Edge Detection Using Xilinx System Generator

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Abstract *– The proposed concept of Fpga based design and Implementation of image Architecture Using Xilinx System generator. Recent advances in synthesis tools for SIMULINK suggest a feasible high-level approach to algorithm implementation for embedded DSP systems. An efficient FPGA based hardware design for enhancement of color and grey scale images in image and video processing. The top model – based visual development process of SIMULINK facilitates host side simulation and validation, as well as synthesis of target specific code, furthermore, legacy code written in MATLAB or ANCI C can be reuse in custom blocks. However, the code generated for DSP platforms is often not very efficient. We are implemented the Image processing applications on FPGA it can be easily design.*

Keywords *-Digital image processing; Xilinx system generator; Matlab.*

I. INTRODUCTION

The handling of digital images has become in recent decades a subject of wide spread interest in different areas such as medical and technological application, among others. Image processing is used to modify pictures to improve them(enhancement,restoration),extractinformation(analysis,recognition), and change their structure (composition, image editing) [1]. Images can be a by optical, photographic, and electronic means, but image processing using digital computers is the most common Method because digital methods are fast, flexible, and precise. We may cite lot of examples where image processing helps to analyze infer and make decision. The main objective of image processing is to improve the quality of the images for human interpretation or the perception of the machines independent of the images for human interpretation or the perception of the machines independently. This paper focuses in the processing pixel to pixel of an image and in the modification of pixel neighborhoods and of course the transformation can be applied to the whole image or only a partial region. The need to process the image in real time, leading to the implementation level hardware, which offers parallelism, Thus significantly reduces the processing time, which was why decided to use Xilinx System Generator, a tool with graphical interface under the Matlab Simulink, based blocks which makes it very easy to handle with respect to other software for hardware description. In addition to offering all the tools for easy graphical simulation level. This article presents architecture of image processing application generator, which is an extension of Simulink and consists of a bookstore called "Blocks Xilinx", whichare mapped architectures, entities, signs, ports and attributes, which script file to produce synthesis in FPGAs, HDL simulation and development tools. The tool retains the hierarchy of Simulink when it is converted intoVHDL.

II. XILINX SYSTEM GENERATOR BASED DESIGN

It is requirement of an efficient rapid prototyping system to develop an environment targeting the hardware design platform. Although the Xilinx ISE 10.1 foundation software is not directly utilized, it is required due to the fact that it is running in the background when the System Generator blocks are implemented [2,3]. The System Generator environment allows for the Xilinx line of FPGAs to be interface directly with Simulink. In addition there are several cost effective development boards available on the market that can be utilized for the software design development phase. Xilinx System Generator (XSG) is an integrator design environment (IDE) for FPGAs, which uses Simulink , as a development environment, it is presenting in the form of block set. It has an integrated design flow, to move directly to the configuration file (*.bit) necessary for programming the FPGA. One of the most important features of Xilinx System Generator is possessed abstraction arithmetic, which is working with representation in fixed point with a precision arbitrary, including quantization and overflow. You can also perform simulation both as a fixed-point double precision. XSG automatically generates VHDL code and a draft of the ISE model being develop. Make hierarchical VHDL Synthesis, expansion and mapping hardware, in addition to generating a user constraint file (UCF), simulation and test bench and test vectors among other things. Xilinx System Generator has created primarily **to** deal with complex Digital signal **processing** (DSP) applications, but it has other application like the theme of this work [6]. The blocks in Xilinx System Generator operate with Boolean values or arbitrary values in fixed point, for a better approach to hardware implementation. In contrast Simulink works with numbers of double-precision floating point. The

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Nanostructured flower like V_2O_5 thin films and its room temperature sensing characteristics

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Abstract

Vanadium pentoxide (V_2O_5) thin films were deposited on glass substrates using spray pyrolysis technique. Aqueous solution of ammonium vanadate with 0.1 M concentration was used to deposit V_2O_5 thin films at different substrate temperatures. The structural, morphological, electrical, optical and vapour sensing properties of the films were investigated. XRD patterns confirmed the polycrystalline nature of the films with orthorhombic structure. Crystallite size increased with an increase in the substrate temperature. SEM images showed the formation of films with flower like morphology. From the optical absorbance spectra, the optical band gap was determined and varied between 3.34 and 3.24 eV. The charge carrier concentration was found to be increased with substrate temperature. Room temperature xylene sensing characteristics of the films were investigated. The influence of substrate temperature on the vapour sensing characteristics of V_2O_5 is reported.

Keywords: Vanadium pentoxide; Thin films; Spray pyrolysis; Gas sensors; Xylene

1. Introduction

Large quantities of volatile organic compounds (VOCs) such as benzene, ethanol, xylene, toluene, ethanolamine, acetone, acetaldehyde and methanol are emitted into the atmosphere by petroleum and other industries [1,2]. The indoor VOCs mostly come from the use of paints, gas boilers, oil stoves, garages and automotive fuels [3]. VOCs present in atmosphere even at ppm level concentration range are most hazardous to environment as well as to human health [4]. Detection of VOCs in environment is one of the major challenges due to their complex nature. Hence, in the recent past, much attention has been given by the researchers to design and develop sensors with desired figure of merits for the detection of specific VOCs. There are different VOC detection techniques reported in the literature based on surface-acoustic-wave [5], chemi-resistive [6], chemi-capacitive [7] and optical [8] sensors. However, development of sensors which can be operated at low power with high sensitivity, selectivity and stability is still a challenge. Xylene is a colourless, sweet smelling aromatic hydrocarbon existing in the form a liquid or gas. It is used as a solvent in industries such as rubber, paint, leather and printing. Exposure to relatively low concentrations of xylene for long durations may lead to severe health hazards, mainly nervous breakdown [9].

Attempts have been made to detect VOCs in environment using different metal oxides [10,11]. Among the various metal oxide sensors, V_2O_5 has attracted considerable interest due to its unique structural, optical and electronic properties [12]. It has high response and selective interaction with gases [13]. V_2O_5 especially in thin film form has also been used in different solid state devices such as infrared detectors [14], colour filters as smart windows [15], gas sensors [16] and in the making of thin film batteries [17]. The deposition parameters play a vital role in modifying the structural and morphological properties of the thin films. For V_2O_5 thin films, it is essential to choose the suitable technique and deposition parameters for

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FPGA Based Design and Implementation of Image Edge Detection Using Xilinx System Generator

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Abstract – The proposed concept of Fpga based design and Implementation of image Architecture Using Xilinx System generator. Recent advances in synthesis tools for SIMULINK suggest a feasible high-level approach to algorithm implementation for embedded DSP systems. An efficient FPGA based hardware design for enhancement of color and grey scale images in image and video processing. The top model – based visual development process of SIMULINK facilitates host side simulation and validation, as well as synthesis of target specific code, furthermore, legacy code written in MATLAB or ANCI C can be reuse in custom blocks. However, the code generated for DSP platforms is often not very efficient. We are implemented the Image processing applications on FPGA it can be easily design.

Keywords -Digital image processing; Xilinx system generator; Matlab.

I. INTRODUCTION

The handling of digital images has become in recent decades a subject of wide spread interest in different areas such as medical and technological application, among others. Image processing is used to modify pictures to improve them(enhancement,restoration),extractinformation(analysis,recognition), and change their structure (composition, image editing) [1]. Images can be a by optical, photographic, and electronic means, but image processing using digital computers is the most common Method because digital methods are fast, flexible, and precise. We may cite lot of examples where image processing helps to analyze infer and make decision. The main objective of image processing is to improve the quality of the images for human interpretation or the perception of the machines independent of the images for human interpretation or the perception of the machines independently. This paper focuses in the processing pixel to pixel of an image and in the modification of pixel neighborhoods and of course the transformation can be applied to the whole image or only a partial region. The need to process the image in real time, leading to the implementation level hardware, which offers parallelism, Thus significantly reduces the processing time, which was why decided to use Xilinx System Generator, a tool with graphical interface under the Matlab Simulink, based blocks which makes it very easy to handle with respect to other software for hardware description. In addition to offering all the tools for easy graphical simulation level. This article presents architecture of image processing application generator, which is an extension of Simulink and consists of a bookstore called "Blocks Xilinx", whichare mapped architectures, entities, signs, ports and attributes, which script file to produce synthesis in FPGAs, HDL simulation and development tools. The tool retains the hierarchy of Simulink when it is converted intoVHDL.

II. XILINX SYSTEM GENERATOR BASED DESIGN

It is requirement of an efficient rapid prototyping system to develop an environment targeting the hardware design platform. Although the Xilinx ISE 10.1 foundation software is not directly utilized, it is required due to the fact that it is running in the background when the System Generator blocks are implemented [2,3]. The System Generator environment allows for the Xilinx line of FPGAs to be interface directly with Simulink. In addition there are several cost effective development boards available on the market that can be utilized for the software design development phase. Xilinx System Generator (XSG) is an integrator design environment (IDE) for FPGAs, which uses Simulink , as a development environment, it is presenting in the form of block set. It has an integrated design flow, to move directly to the configuration file (*.bit) necessary for programming the FPGA. One of the most important features of Xilinx System Generator is possessed abstraction arithmetic, which is working with representation in fixed point with a precision arbitrary, including quantization and overflow. You can also perform simulation both as a fixed-point double precision. XSG automatically generates VHDL code and a draft of the ISE model being develop. Make hierarchical VHDL Synthesis, expansion and mapping hardware, in addition to generating a user constraint file (UCF), simulation and test bench and test vectors among other things. Xilinx System Generator has created primarily **to** deal with complex Digital signal **processing** (DSP) applications, but it has other application like the theme of this work [6]. The blocks in Xilinx System Generator operate with Boolean values or arbitrary values in fixed point, for a better approach to hardware implementation. In contrast Simulink works with numbers of double-precision floating point. The

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Image Segmentation Using Mamdani Rule Base

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Abstract - One of the biggest problems in computer vision systems, analyzing images having high uncertainty/vagueness degree, is the treatment of such uncertainty. This problem is even clearest in the segmentation process. Fuzzy set theory and fuzzy logic are ideally suited for dealing with such uncertainty. On the other hand image segmentation and subsequent extraction from a noise-affected background, with the help of various soft computing methods, are relatively new and quite popular due to various reasons. These methods include various Artificial Neural Network (ANN) models (primarily supervised in nature),providing an extraction solution working in unsupervised mode happens to be even more interesting problem. Literature suggests that effort in this respect appears to be quite rudimentary. In the present article, we propose a fuzzy rule guided novel technique that is functional devoid of any external intervention during execution. Experimental results suggest that this approach is an efficient one in comparison to different other techniques extensively addressed in literature. In order to justify the supremacy of performance of our proposed technique in respect of its competitors, we take recourse to effective metrics like Peak Signal to Noise Ratio (PSNR).

Index Terms - Fuzzy Rule Base, Image Extraction, Fuzzy Inference System (FIS), Membership Functions, Threshold methods, Soft Computing, Fuzzy Image Processing, Feature based modeling.

I. INTRODUCTION

In traditional computing methodology, the prime considerations are precision, certainty, and rigor. By contrast, the principal guidelines of soft computing revolve around the following: tolerance for imprecision, Uncertainty, partial truth and approximation. It will help to achieve tractability, robustness and low solution cost. Although fuzzy methods are not a solution to all problems, they are useful in situations in which the concepts (features, criteria, or rules) are vague. This is often the situation in computer vision. There is uncertainty in many aspects of image processing and computer vision [8]. Visual patterns are inherently ambiguous, image features are corrupted and distorted by the acquisition process, and object definitions are not always crisp. Moreover, knowledge about the objects in the scene can be described only in vague terms, and the outputs of low level processes provide vague, conflicting, or erroneous inputs to higher level algorithms.

In Fuzzy Image processing, fuzzy set theory [14] is applied to the task of image processing. Fuzzy Image Processing depends upon membership values of Fuzzy Logic [15]. All membership functions are in the form of a *triangular* function [17]. Fuzzy set theory and fuzzy logic are ideally suited for dealing with such uncertainty. The fuzzy approaches for image segmentation are divided into four approaches as outlined in [18]. The approaches are 'Segmentation via thresholding', 'Segmentation via clustering', 'Supervised Segmentation' and 'Rule-based Segmentation'.Medical image segmentation techniques typically require some form ofexpert human supervision to provide accurate and consistent identification of anatomic structures of interest[11].

In many medical image segmentation applications identifying and extracting the region of interest (ROI) accurately is an important step[19] .Naturally, the extraction of objects prevalent in image content from a noise affected background. The result of image segmentation is a set of segments that collectively cover the entire image, or a set of contours extracted from the image. Each of the pixels in a region is similar with respect to some characteristic or computed property, such as color, intensity, or texture [12]. Despite the fact that grey-level distributions, small objects, and object overlapping are some of the most complicated issues that create several challenging difficulties for multilevel threshold selection in images, a thresholding technique must be able to segment a digitized image into different objects with similar properties[5][13]. In this correspondence, we will present an extension of Otsu's approach.

Generally, two steps have to be considered in order to address any segmentation problem:

Step 1: To formalize the segmentation problem, a mathematical notion of homogeneity or similarity between image regions need to be considered.

Step 2: An efficient algorithm for partitioning or clustering has to be derived particularly to carry the earlier step out in a computationally efficient manner.

The problems of image segmentation become more uncertain and severe when it comes to dealing with noisy

Images. A formal definition of segmentation of an image can be defined as, Segmentation of image I is a partition P of I into a set of M regions {Rm, m=1, 2…M} such that,

RESEARCH ARTICLE OPEN ACCESS

Approaches for Keyword Query Routing

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Abstract-
The growing number of datasets published on the Web as linked data brings both opportunities for high data availability of data. As the data increases challenges for querying also increases. It is very difficult to search linked data using structured languages. Hence, we use Keyword Query searching for linked data. In this paper, we propose different approaches for keyword query routing through which the efficiency of keyword search can be improved greatly. By routing the keywords to the relevant data sources the processing cost of keyword search queries can be greatly reduced. In this paper, we contrast and compare four models – Keyword level, Element level, Set level and query expansion using semantic and linguistic analysis. These models are used for keyword query routing in keyword search.
Index terms: Keyword search, Keyword query routing, Graph-structured data, linguistic and semantic analysis

I. Introduction

The web is no longer a collection of textual data but also a web of interlinked data sources. One project that largely contributes to this develop- ment is Linking Open Data. Through this, a vast amount of structured information was made publicly available. Querying that huge amount of data in an intuitive way is challenging.

Collectively, Linked Data comprise hundreds of sources containing billions of RDF triples, which are connected by millions of links. While different kinds of links can be established, the ones frequently published are *sameAs* links, which denote that two RDF resources represent the same real-world object. The representation of the linked data on the web is shown in figure 1.

The linked data Web already contains valuable data in diverse areas, such as e-government, e-commerce, and the biosciences. Additionally, the number of available datasets has grown solidly since its inception. [1]

In order to search such data we use keyword search techniques which employ keyword query routing. To decrease the high cost incurred in searching structured results that span multiple sources, we propose routing of the keywords to the relevant databases. As opposed to the source selection problem [2], which is focusing on computing *the most relevant sources*, the problem here is to compute the *most relevant combinations of sources*. The goal is to produce routing plans, which can be used to compute results from multiple sources.

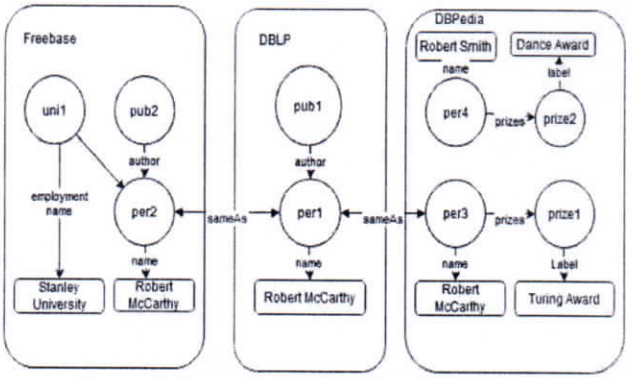

Figure 1: Example of Linked data on web

For selecting the correct routing plan, we use graphs that are developed based on the relationships between the keywords present in the keyword query. This relationship is considered at the various levels such as keyword level, element level, set level e.t.c.,

The rest of paper is organized as follows. Section 2 provides the brief outline on the existing work. The different approaches are listed along with the some examples explaining how the routing is considered in the section 3 before we conclude in the section 4.

II. Related work:

Keyword Query Search can be divided into two directions of work. They are: 1) keyword search approaches compute the most relevant structured results and 2) Solutions for source selection compute the most relevant sources.

ENHANCED DUPLICATE DETECTION USING GENETIC ALGORITHM WITH PARTICLE SWARM OPTIMIZATION

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ABSTRACT:

We present a new method to detect duplicates with genetic algorithm and particle swarm optimization. Many similarity techniques we used for detection of duplicate records. After remove the duplicate records some of the useless documents are available in the results. Using genetic algorithm with particle swarm optimization accurately detects the all duplicates and removes useless documents information also. Here we can apply algorithms on different datasets like restaurant and cora. Our proposed algorithms show the better performance on real time two datasets. Evolution metrics are better compare to previous systems.

KEYWORDS: De-duplication, duplicate record detection, similarity functions, genetic algorithm, particle swarm optimization.

I.INTRODUCTION

All organization need and expect the quality data. Erroneous duplicate data occurs under heterogeneous data sources information. Data cleaning is required for removing the errors and redundancy. Data cleaning only can perform the major role under process environment for detection of duplicates.

Similarity techniques we can apply on heterogeneous data sources and recognize the duplicates. Previous many approaches are not removing the useless records information. In this paper we can

SSD CLOUD HOSTING AND PERCEPTION OF VIRTUAL DATA CENTRE

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ABSTRACT:

It exists as an alternative to hosting websites on single servers (either dedicated or shared servers) and can be considered as an extension of the concept of clustered hosting where websites are hosted on multiple servers. With cloud hosting however, the network of servers that are used is vast and often pulled from different data centres in different locations. Cloud hosting services provide hosting for websites on virtual servers which pull their computing resource from extensive underlying networks of physical web servers. It follows the utility model of computing in that it is available as a service rather than a product and is therefore comparable with traditional utilities such as electricity and gas. Broadly speaking the client can tap into their service as much as they need, depending on the demands of their website, and they will only pay for what they use. A development of the concept of cloud hosting for enterprise customers is the Virtual Data Centre (VDC). This employs a virtualized network of servers in the cloud which can be used to host all of a business's IT operations including its websites.

KEYWORDS: Physical Security; Scalability and Flexibility; Utility style costing; Virtual Data Centre (VDC); Responsive load balancing;

I.INTRODUCTION

Practical examples of cloud hosting can fall under both the Infrastructure as a Service (IaaS) and Platform as a Service (PaaS) classifications. Under IaaS offerings the client is simply provided with the virtualised hardware resource on which they can install their own choice of software environment before building their web application. On a PaaS service however, the client is also provided with this software environment, for example, as a solution stack (operating system, database support, web server software, and programming support), on which they can go straight to installing and developing their web application. Businesses with complex IT infrastructures and experienced IT professionals may wish to opt for the more