NATIONAL CONFERENCE

ON

SMART INNOVATIONS IN SCIENCE, COMMUNICATION & COMPUTING TECHNOLOGY

SISCT-2020

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SWAMI VIVEKANAND SUBHARTI UNIVERSITY

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NATIONAL CONFERENCE

ON

"SMART INNOVATIONS IN SCIENCE, COMMUNICATION & COMPUTING TECHNOLOGY"

(SISCT-2020)

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ABOUT UNIVERSITY

Swami Vivekanand Subharti University (SVSU) is a University under section 2(f) of the University Grant Commission (U.G.C.) Act, 1956 set up under the Swami Vivekanand Subharti Vishwavidhaylaya, Uttar Pradesh Adhiniyam, 2008 (U.P. Act No.29 of 2008) as passed by Uttar Pradesh Legislature and assented by the honorable Governor of Uttar Pradesh in September 2008. The University has been established under the aegis of Mahayana Theravada Vajrayana Buddhist Religious and Charitable Trust, Meerut, which has acquired a commendable record of service in the field of Education, Health care and Social Welfare. The main campus of the University is in the National Capital Region, strategically situated on National Highway 58, Delhi bypass road, Meerut, The campus aptly called 'Subhartipuram', is spread over a sprawling area of about 250 acres of land comprising magnificent buildings, lush green lawns and vibrant surroundings with over 5000 people, determined to make this a 'Jewel in the Crown' of the nation. The University has several constituent colleges which provide higher education in almost all the disciplines like Medical, Dental, Nursing, Physiotherapy, Paramedical, Pharmacy, Naturopathy, Yogic Sciences, Engineering, Management, Law, Journalism, Education, Library, Arts and Science, Hotel Management, Faculty of Science etc. thus engaged in creating academically and technically proficient professionals. The University boasts of highly qualified, dedicated and competent faculty from all walks of life, world class infrastructure, fully equipped Laboratories with latest state-of-the-art equipment and a huge library with recent knowledge resources including e-resources.

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ABOUT KVSCOS

Keral Verma Subharti College of Science, established in 2013 is well equipped with an extensive infrastructure, state of art laboratories, library and botanical garden. Keral Verma Subharti College of Science offers UG and PG courses in various disciplines viz: Computer Application, Biotechnology, Chemistry, Botany, Mathematics, Physics, Zoology and Agriculture. Faculty members are actively engaged in pursuing excellence and innovation in teaching and research. The student centric environment in the departments of KVSCOS is reflected in achievements of Students at State and National levels. KVSCOS inspires faculty members in engaging research activities for generating new knowledge. The faculty members of the department published Research Articles in various reputed research journals and participate in Conference/ Seminar/ Workshop. Student's participation in co-curricular and extra-curricular activities as cultural and sports activities brings applauds to KVSCOS.

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ABOUT SISCT

The National Conference aims to bring together scholars and academicians to share their experience and research activities about all aspects of Science, Communication and Technology. The Objective of this conference to help the participants to understand, learn and appreciate explores the new smart innovations in the different field of Science, Communication & Computing Technology. To focus upon advances / innovations and emerging trends in the above said fields

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ABOUT MEERUT

The Sports Capital of India, Meerut, is a "Historical Paradise", which stands at a strategic standpoint both geographically and culturally. This city has played a pivotal role in the first spark of Indian Independence. The long established Meerut Cantonment by the British East India Company in 1803 is still functional in its fundamental form. Owing to its inimitable geographical locations, the inhabitants of the city are not only privileged to experience all the four seasons but also in having some of the most rejuvenating weekend getaways and tourist destinations at their ease such as Hastinapur, Parikshitgarh, Haridwar, Rishikesh, Shukrataal. It serves as a hub for trading activities, agricultural products and industry including manufacturing, smelting, handicrafts as well as the milling of sugar, cotton, flour and oilseeds. The city is one of the largest producer of sports goods as well as musical instruments in India. The city has a well-developed tourism sector within western Uttar Pradesh with its imminent history and luxurious picturesque backdrop. The eminent landmarks of Meerut include Augharnath Temple, Gandhi Bagh and National sanctuaries for wildlife and sight-seeing lovers. Overall, the city caters the needs of souls of every hue and provides a plethora of historical chronicles for people having an interest in history.

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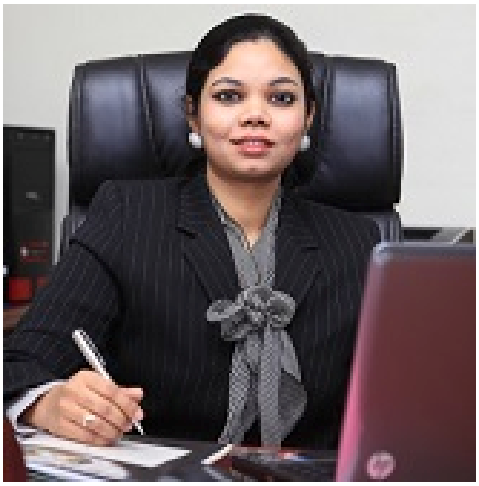
MESSAGE



I am very glad to know that Keral Verma Subharti College of Science, Swami Vivekanand Subharti University, Meerut is releasing an Abstract book on the occasion of its National Conference on Smart Innovations in Science, Communication & Computing Technology (SISCT-2020) on 14th& 15th Feb, 2020.

The theme of the conference are well thought topics and are very essential for upgrading & updating the knowledge required in the current scenario.

I welcome all the resource persons & delegates of the conference to our sprawling campus and wish them a pleasant stay. I am sure the Conference proceedings will benefit all graduate, post graduate students, faculty, academicians, clinicians and the Society at large.

I congratulate the efforts of the college& its whole team for its efforts in organizing this event & wish the Conference a great success.

✍ Dr. Shalya Raj
CEO
SVSU, Meerut

MESSAGE

Dear Dr. Pradeep Sharma,

Please accept and convey my congratulation and best wishes to your team for holding National Conference "Smart Innovations in Science, Communication and Computing Technology" (SISCT-2020) on 14th February & 15th February, 2020.

To have synergy of discipline from Science and Technologies, this kind of Conference can certainly prove to be boon for one and all.

I welcome all delegates to Subharti Campus and wish all delegates develop long standing relationships and form positive perception of University at large.

Love and Regards,

✍ *Dr. N.K. Ahuja*
Vice Chancellor
SVSU, Meerut

MESSAGE

I am very glad to share my view that the Keral Verma Subharti College of Science is releasing an Abstract book on the occasion of National Conference on Smart Innovations in Science, Communication & Computing Technology (SISCT-2020) on 14th& 15th Feb, 2020.

The theme of the conference will helpful for upgrading the knowledge in the field of Science, Computer and Communication.

Through this conference, Industry Expert, Academia, Research Associates and Students will share their own views together at the same platform.

On the occasion of this conference, I hearty welcome all the keynote speakers & delegates of the conference to our large and green campus and wish them a pleasant stay.

I also congratulate the effort of organizing team as well as all faculty members to organizing this conference.

✍ Dr. P.K.Sharma
Organizing Chairperson
SISCT-2020

MESSAGE

It gives me immense pleasure to be a part as Convener of "National Conference on Smart Innovation in Science, Communication and Computing Technology" being held at Keral Verma Subharti College of Science, Swami Vivekanand Subharti University Meerut, UP-250005 from 14-15 February 2020.

Keral Verma Subharti College of Science has developed a self-reliant and self-dependent human recourse to cope with the challenging world of tomorrow. We impart education to empower youth to create a space in the society. Our College inculcates the highest values of service among the students in the society to develop moral, culture and ethical values. To overcome new challenges and getting opportunities, we are organizing this conference to provide knowledge of new advance technologies in the various interdisciplinary fields of science and also getting a chance to interact with the experts of different fields from various parts of India. It will be very much helpful for our UG, PG students as well as researchers and faculties' members.

✍ *Dr. Vagish Mishra*
Convener
SISCT-2020

MESSAGE

It is a great privilege to me that I have got the opportunity to Organize Two-Days National Conference "Smart Innovations in Science, Communication and Computing Technology (SISCT-2020)" on 14 & 15 February 2020.

The inspiration and courage for organizing this type of event has come to me from the Honorable Vice Chancellor Dr. N.K.Ahuja and Honorable CEO Madam, Dr. Shalya Raj. I thank to both the eminent personalities.

I also thank my Respected Dean, Dr. P.K.Sharma, who has supported me from time to time with his experience and guidance from the beginning of the conference.

Along with this, I heartily congratulate our eminent speakers, faculty members and students coming to the conference.

✍ *Mr. Shashiraj Teotia*
Organizing Secretary
SISCT-2020

MESSAGE

It is my pleasure to present the “Souvenir” of the selected abstracts for presentations at Two-Days National Conference on "Smart Innovations in Science, Communication and Computing Technology" on 14th & 15th Feb, 2020.

Though we have tried our best to remove as many errors as possible, yet there is a chance that some of them may have escaped error detection as the Souvenir had to completely literally within few days to meet publication deadlines.

I am indeed grateful to several friends who have assisted in making of the Souvenir reality.

✍ *Dr. Sunil Kumar*
Chief Editor
SISCT-2020

SISCT-2020

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LIST OF PAPERS

IDENTIFICATION OF QTLS AND GENES FOR SALT STRESS TOLERANCE IN RICE

Dr. Vandna Rai
Principal Scientists
ICAR – National Institute for Plant Biotechnology,
Pusa Campus, New Delhi, INDIA.

ABSTRACT

Rice is an important staple food crop and is a source of dietary supplement for more than half of the population (~3.5 billion) across the world. Although rice is sensitive both during seedling and reproductive stages, they apparently are governed by independent cascade of molecular entities. Salt-tolerant (CSR11 and CSR27) and salt-sensitive (MI48) cultivars were used for developing recombinant inbred lines (RILs), which would now be used for mapping the QTLs and identification of the potential genes that may have a role in conferring tolerance towards salinity at the seedling and /or reproductive stages. The bulked segregant analysis (BSA) was employed for QTL mapping using RILs. The efficacy of this approach has been demonstrated in our earlies studies in identifying Saltol and many other QTLs implicated in conferring tolerance to salinity stress at the seedling stage. However, one of the major limitations of Saltol QTL is its inability to confer tolerance to salinity at reproductive stage. Therefore, there is a need to identify novel QTLs that may provide tolerance to salinity stress to both the seedling and mature plants. High-density linkage map revealed specific genomics regions that may contribute potentially to the salinity stress tolerance at the reproductive stage. Randomly selected 96 RILs were used for the construction of a genetic linkage map, which encompassed 1401 markers spanning 1753.77 cM across 2 chromosomes. The genotyping data of these markers was further analyzed for their phenotypic traits, which led to the identification of 50 novel QTLs for yield -related traits. The phenotypic variance of these QTLs ranged from 15%-35%.

Keywords: RIL, QTL.

CHAOS AND BIOGEOGRAPHY BASED OPTIMIZATION ALGORITHM

Dr. Mamta Rani
Associate Professor, Department of Computer Science,
Central University of Rajasthan, Ajmer, Rajasthan, INDIA.

ABSTRACT

Chaotic maps have improved the performance of BBO algorithm as chaotic migration and chaotic mutation help in maintaining diversity of the population on a higher level to avoid habitat's entrapment in local optimal solutions. Many chaotic maps have been used in BBO algorithm in the previous researches. Recently, superior alternated method in discrete dynamics has emerged as a powerful tool for control and anti-control of chaos. In this paper, it is proposed to use superior alternated chaotic logistic map in BBO algorithm to improve the significant performance further. We have used ten benchmark functions to carry out extensive numerical calculations to study the efficiency and robust performance of the proposed approaches. The simulations thus obtained have confirmed the accuracy and higher convergence rates of our techniques.

Keywords: BBO, CBBO, SCBBO, ASCBBO, Alternated Logistic Map, Superior Iterations, Evolutionary Algorithms.

MATHEMATICAL ASPECT OF FUZZY LOGIC AND THEIR EXTENSION TO REAL LIFE SYSTEM

Dr. Mukesh Kumar Sharma
Associate Professor, Department of Mathematics,
Ch. Charan Singh University, Meerut, Uttar Pradesh, INDIA.

ABSTRACT

A model is a representation of actual object or simulation, showing the relationship and interrelationships of different actions in terms of cause and effect. A mathematical model employs a set of mathematical symbols to represent the decision variables. The relationship between them is given by either inequalities or equations. This process defines a mathematical form of the physical situation and can thus be solved by using available mathematical techniques. It can be said that a mathematical model is an abstract mathematical situation to solve the real life problems taken from any of the areas of study in physical sciences, biological sciences or social sciences. The complexity of biological system does not make the significant contribution by the traditional mathematical approach of analysis appropriate. To overcome such type of situation we have also to modify the mathematical techniques.

It is well known that the need of decision is always. There as almost all the aspects of research and regular functioning is the field of Science. These decisions are meted at various stages and are usually based on the available information. But sometimes the information is many class or cases may be vague or imprecise. It has also been observed that the mathematical models based on the classical set theory perform very poorly when the inputs are vague in nature. To find the most suitable decision we have to deploy the fuzzy aspect to the mathematical models but due to its function foe favourable vagueness the fuzzy logic also does not perform adequate performance in the solution of mathematical methods. To overcome such situations intuitionistic fuzzy logic may be used because it favours three functions i.e. membership, non-membership and the hesitation part. We may also propose the methods based on vague sets. But these two may also not give the most appropriate decision for the screening analysis so I propose to apply meditative fuzzy logic approach to mathematical modelling. Presently we will discuss these approaches to real life applications.

Keywords: Fuzzy Logic.

MINING SOFTWARE REPOSITORIES: OPPORTUNITIES, CHALLENGES AND RESEARCH DIMENSIONS

Dr. Tamanna Siddiqui
Associate Professor, Department of Computer Science,
Aligarh Muslim University, Aligarh, Uttar Pradesh, INDIA.

ABSTRACT

Source control repositories, bug repositories, archived communications, deployment logs, and code repositories are examples of software repositories that are commonly available for most software projects. The Mining Software Repositories (MSR) field analyzes and cross-links the rich data available in these repositories to uncover interesting and actionable information about software systems. We can guide decision-making processes in modern software projects by transforming these repositories from static record keeping ones into active repositories. For example, data in source control repositories, traditionally used to archive code, could be linked with data in bug repositories to help practitioners propagate complex changes and to warn them about risky code based on prior changes and bugs. In this conference lecture, I will present a brief history of the MSR field and discuss several recent achievements and results of using MSR techniques to support software research and practice along with the details of available tools to support MSR. After that, I will also discuss the various opportunities and challenges that lie in the road ahead for this important and emerging field.

Keywords: MSR, Data, Bugs.

WIRELESS SENSOR NETWORKS

Dr. MIH Ansari
Professor & Head, Department of Computer Science,
IFTM University, Moradabad, Uttar Pradesh, INDIA.

ABSTRACT

A Wireless Sensor Network (WSN) is an effective sensing technology that is used to replicate the human capability of sensing, collecting, computing, processing and transmitting the data that is collected from a very large area. In the recent past, sensor technology has shown tremendous development in the field of environment & health monitoring, military surveillance, vehicle tracking, and detection. The participating wireless sensor nodes form a network that is dynamic in nature because of the frequent failure of the participating sensor nodes. The Quality of Service support to such networks is one of the challenging tasks. This talk presents the most important open issues and challenges in providing QoS as QoS routing, energy consumptions, bandwidth utilization, security and mobility in wireless sensor networks. it will help the researchers to find new challenges and also help them to design new research problems for their future work.

Keywords: WSN, QOS.

APPLICATIONS OF DEVOPS AND ROLE OF DEVOPS ENGINEERS

Ms. Juhi Sharma
Manager, Department of Information Technology
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ABSTRACT

DevOps is a culture which promotes collaboration between Development and Operations Team to deploy code to production faster in an automated & repeatable way. The word 'DevOps' is a combination of two words 'development' and 'operations.'

DevOps helps to increases an organization's speed to deliver applications and services. It allows organizations to serve their customers better and compete more strongly in the market.

In simple words, DevOps can be defined as an alignment of development and IT operations with better communication and collaboration.

Keywords: Communication, Collaboration, Devops Automation Tool (Jenkins, Bamboo, Chef, Docker, etc).

DESIGN OF AN EFFICIENT MOBILITY MODEL FOR AD HOC WIRELESS NETWORKS

[1]Dr. P.K. Sharma, [2]Mr. Shashiraj Teotia
[1]Dean, College of Science,
[2]Head of Department, Department of Computer Application,
[1,2]Swami Vivekananda Subharti University, Meerut, Uttar Pradesh, INDIA.

ABSTRACT

The purpose of mobility models is to describe typical terminal movement so that the analysis for these purposes can be made. Thus, the movement pattern of users plays an important role in performance analysis of mobile and wireless networks, especially in third-generation mobile communications. In this paper we propose algorithms for generating different mobility scenarios in ad hoc networks. Generating different mobility scenarios is one of the first tasks to be able to generate the three types of mobility patterns. We make two assumptions, first, the mobility pattern followed by the nodes in any particular scenario is homogenous, which means, the entire set of nodes follow any one particular type of mobility pattern. Second, the speed of the nodes remains constant throughout the simulation. It is only the direction of the nodes which changes and hence resulting in various types of mobility patterns.

Keywords: Ad hoc Network, Mobility Models, Mobile Communications, Mobility Patterns.

AN EMAIL AUTHENTICATION MECHANISM

[1]Suraj Shukla, [2]Ankit Kumar Agarwal
[1,2]Assistant Professor, Department of Computer Application
Swami Vivekanand Subharti University, Meerut, Uttar Pradesh, INDIA.

ABSTRACT

This document gives recommendations and guidelines for enhancing trust in email. The primary audience includes enterprise email administrators, information security specialists and network managers. This guideline applies to federal IT systems and will also be useful for small or medium sized organizations. Technologies recommended in support of core Simple Mail Transfer Protocol (SMTP) and the Domain Name System (DNS) include mechanisms for authenticating a sending domain: Sender Policy Framework (SPF), Domain Keys Identified Mail (DKIM) and Domain based Message Authentication, Reporting and Conformance (DMARC). Recommendations for email transmission security include Transport Layer Security (TLS) and associated certificate authentication protocols. Recommendations for email content security include the encryption and authentication of message content using S/MIME (Secure/Multipurpose Internet Mail Extensions) and associated certificate and key distribution protocols.

Keywords: Email; Simple Mail Transfer Protocol (SMTP); Transport Layer Security (TLS); Sender Policy Framework (SPF); Domain Keys Identified Mail (DKIM); Domain based Message Authentication.

A SURVEY ON MOBILITY MODELS IN MANET

[1]Sanjeev Panwar, [2]Shashiraj Teotia
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Swami Vivekanand Subharti University, Meerut, Uttar Pradesh, INDIA.

ABSTRACT

In Ad-hoc networks, routes are mostly multihop and network hosts communicate via packet radios. Each host moves in an arbitrary manner and thus routes are subject to frequent disconnections. In typical mobile networks, nodes exhibit some degree of regularity in the mobility pattern.

By exploiting a mobile user's non-random travelling pattern, we can predict the future state of network topology and thus provide a transparent network access during the period of topology changes.

The main characteristics of Ad-hoc wireless networks include mobility which is one of the major characteristics of most Ad-hoc wireless environments. There are several exceptions where mobility does not need to be considered, but when we want to construct the virtual backbone, it is necessary to take into account mobility. A global positioning system (GPS) can be used to handle the mobility problems, but its usage must be limited as secondary information because the location information such as latitude longitude and height does not directly relate to the connectivity

Keywords: Wireless Networks, MANET, Mobility Models.

APPLICATIONS OF WIRELESS SENSOR NETWORKS IN MILITARY, BATTLEFIELD AND EMERGENCY SERVICES

[1]Sanjeev Panwar, [2]Shashiraj Teotia
[1,2]Assistant Professor, Department of Computer Application
Swami Vivekanand Subharti University, Meerut, Uttar Pradesh, INDIA.

ABSTRACT

In this paper we will discuss about the Wireless Sensor Networks and its usage in Defence and Aerospace Applications at various levels. Wireless sensor networks consist of small nodes with sensing, computation, and wireless communications capabilities. In recent years an efficient design of a Wireless Sensor Network has become a leading area of research. A Sensor is a device that responds and detects some type of input from both the physical or environmental conditions, such as pressure, heat, light, etc. The output of the sensor is generally an electrical signal that is transmitted to a controller for further processing.

WSN is a wireless network that consists of base stations and numbers of nodes (wireless sensors).These networks are used to monitor physical or environmental conditions like sound, pressure, temperature and co-operatively pass data through the network to a main location.

Keywords: WSN.

RECENT DEVELOPMENTS IN HYPERSPECTRAL IMAGE ANALYSIS: A REVIEW

[1]Neeraj Pratap, [2]Himanshu Sirohi
[1,2]Assistant Professor, Department of Computer Application
Swami Vivekanand Subharti University, Meerut, Uttar Pradesh, INDIA.

ABSTRACT

Over the earlier three eras, major developments have been made in hyperspectral imaging due to which it has arisen as an effective tool in many civil, environmental, and military applications. Recent sensor technologies are skilled of covering large surfaces of earth with exceptional spatial, spectral and temporal resolutions. Due to these characteristics, hyperspectral imaging has been efficiently used in several remote sensing applications needingassessment of physical parameters of many complex surfaces and identification of visually like materials having acceptable spectral signatures. In the modern years, ground based hyperspectral imaging has gained huge interest in the research on electronic imaging for food inspection, forensic science, medical surgery and diagnosis and military applications. This paper focuses on the basics of hyperspectral image analysis and its recent applications such as food quality and safety assessment, medical diagnosis and image guided surgery, forensic document examination, defense and homeland security, remote sensing applications such as precision agriculture and water resource management and material identification and mapping of artworks. This analysis can be a valuable baseline for future research in hyperspectral image analysis.

Keywords: Hyperspectral Images, Spectral Signatures, Remote Sensing.

A REVIEW ON APPLICATIONS OF ARTIFICIAL INTELLIGENCE

[1]Himanshu Sirohi, [2]Sanjeev Panwar
[1,2]Assistant Professor, Department of Computer Application
Swami Vivekanand Subharti University, Meerut, Uttar Pradesh, INDIA.

ABSTRACT

The most exciting technology in artificial intelligence is Machine learning. Machine Learning provides systems for the machine and gives capability to automatically learn and improve from experience without being explicitly programmed. For Example the search engine Google is used for search something on internet, the main reasons its work well because of learning algorithm, Every time mailbox is used and it identify inbox, drafts box, sent box etc. That's also machines learning. The main aim of machine learning is the improvement of computer programs and to allow the computers learn automatically.

Keywords: AI, Machine Learning.

AN APPROACH FOR SMART GRID TECHNOLOGIES IN CYBER SECURITY

[1]Ankit Kumar Agarwal, [2]Himanshu Sirohi
[1,2]Assistant Professor, Department of Computer Application
Swami Vivekanand Subharti University, Meerut, Uttar Pradesh, INDIA.

ABSTRACT

We hear a lot about cybercrime, but what exactly is it? The simple answer is, "It's complicated!" Like traditional crime, cybercrime can take many shapes and can occur nearly anytime or anyplace. Criminals committing cybercrime use a number of methods, depending on their skill-set and their goal. This should not be surprising: cybercrime is, after all, simply 'crime' with some sort of 'computer' or 'cyber' aspect.

Cyber security must address not only deliberate attacks launched by disgruntled employees, agents of industrial espionage, and terrorists, but also inadvertent compromises of the information infrastructure due to user errors, equipment failures, and natural disasters. Vulnerabilities might allow an attacker to penetrate a network, gain access to control software, and alter load conditions to destabilize the grid in unpredictable ways.

In this paper, we discuss about the Public Key Infrastructure Certificates for improving the cyber security.

Keywords: Public Key, Vulnerability, Espionage, Deliberate.

DESIGN A HIGH SCALABLE ALGORITHM TO INTEGRATE THE DATA WITH THE HELP OF BIG DATA

[1]Shammi Saxena, [2]Naveen Chandra
[1,2]Assistant Professor, Department of Computer Application
Swami Vivekanand Subharti University, Meerut, Uttar Pradesh, INDIA.

ABSTRACT

Big data is a new driver of the world economic and societal changes. The world's data collection is reaching a tipping point for major technological changes that can bring new ways in decision making, managing our health, cities, finance and education. While the data complexities are increasing including data's volume, variety, velocity and veracity, the real impact hinges on our ability to uncover the `value' in the data through Big Data Analytics technologies. Big Data Analytics poses a grand challenge on the design of highly scalable algorithms and systems to integrate the data and uncover large hidden values from datasets that are diverse, complex, and of a massive scale. Potential breakthroughs include new algorithms, methodologies, systems and applications in Big Data Analytics that discover useful and hidden knowledge from the Big Data efficiently and effectively. Big Data Analytics is relevant to Hong Kong as it moves towards a digital economy and society. Hong Kong is already among the best in the world in Big Data Analytics, taking up such leadership positions as chairs and editor in chiefs of important conferences and journals in Big Data related areas. But to maintain such leadership positions, Hong Kong universities, government and industry must act quickly in addressing a number of major challenges. These challenges includes "foundations," which concerns new algorithms, theory and methodologies in knowledge discovery from large amounts of data and "systems and applications," which concerns innovative applications and systems useful for supporting Big Data practices. Big data analytics must also be team effort cutting across academic institutions, government and society and industry, and by researchers from multiple disciplines including computer science and engineering, health, data science and social and policy areas.

Keywords: Data Volume, Tipping, Veracity.

A RELIABLE APPROACH USE IN MOBILE ADHOC NETWORK FOR REAL TIME COMPUTATION

[1]Ankit Kumar Agarwal, [2]Suraj Shukla
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Swami Vivekanand Subharti University, Meerut, Uttar Pradesh, INDIA.

ABSTRACT

The recent years have witnessed considerable accomplishments in the design, development, and deployment of wireless communication networks. Personal and mobile communications are made possible by the convergence of several different technologies, specifically networking protocols, wireless/mobile communication systems, distributed computing and Internet.

Conventional wireless networks like cellular networks, WLAN, etc., require some form of fixed network infrastructure and centralized administration for their operation, potentially consuming a lot of time and money for set-up and maintenance. Furthermore, an increasing number of devices such as laptops, PDAs, tablet PCs, etc., are provided with short-range wireless interfaces that are smaller in size, cheaper, user friendly and powerful. This evolution is driving a new alternative way for mobile communication, in which mobile devices form a self-creating, self-organizing and self administering wireless networks, commonly known as mobile ad hoc networks.

Most of the problems in mobile adhoc networks are real-time based which require fast computation, real-time optimal solution and adaption to the situation of the network traffic to achieve the desired goals. Also some of them are combinatorial optimization problems which are NP hard, like optimal path finding, optimal path selection, optimal resources allocation, etc. Hence, heuristics are often used to provide rapid and near optimal solutions.

This paper describes a approach which is useful in finding the optimal solutions to these problems. This technique can be used to solve problems that require real-time, optimal and adaptive solutions. Also, they are intrinsically parallel, with much potential for rapid hardware implementation.

Keywords: WLAN, PDA, Ad-hoc Network.

OPTIMAL LOT SIZE FOR DETERIORATED ITEMS WITH EXPONENTIAL DEMAND RATE UNDER TRADE CREDIT POLICY

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ABSTRACT

In this article, an inventory model is considered with exponential demand rate and time dependent deterioration. Here, we have taken shortages which are fully backlogged. This model is studied under the condition of permissible delay in payments which is very important and necessary aspect for any business to smooth running. The optimal replenishment policy for the model is derived. At last, a numerical example is giving and convexity is also shown.

Keywords: Exponential Demand Rate, Inventory, Shortages, Trade Credit and Time Dependent Deterioration.

A DETERIORATING INVENTORY MODEL WITH SHORTAGES AND DELAY IN PAYMENT UNDER INFLATIONARY CONDITION

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ABSTRACT

The article has been developed with lot size model for the deteriorating material and the deterioration rate is taken to be time varying. Here the retailer is offered with the allowable delay in payment for the smooth running. Shortages occurred and the demand is expected to be exponentially increasing, time dependent. Model is developed under inflationary condition. Mathematical model is presented to formulate the problem and the optimal replenishment policies are derived to find the solution. Ultimately, a numerical investigation is given to illustrate the problem and the sensitivity examination is introduced to see the impact of the different parameters.

Keywords: Delay in Payment, Shortages, Deterioration and Inflation.

CLOSED LOOP SUPPLY CHAIN DETERIORATING INVENTORY MODEL WITH UNCERTAIN LEAD TIME AND SHORTAGES UNDER INFLATION

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ABSTRACT

In the presented model an integrated inventory model with deterioration considering the two players is developed; the supplier and the retailer. Here the supplier consists the three shops for production, remanufacturing and for the collection of the returned items. Production rate is considered as demand dependent also the demand is considered as price dependent. Shortages are permitted and assumed to be partially backlogged. Lead time is also considered which is assumed to be uncertain. The model is investigated under the inflationary conditions.

Keywords: Deterioration, Remanufacturing, Supply Chain, Inflation, Uncertain Lead Time, Shortages.

FORECASTING CROP PRODUCTION THROUGH FUZZY TIME SERIES

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ABSTRACT

This paper presents the development of fuzzy time invariant series model development and its implementation in forecasting the agricultural production. It contains a comparative study of three and its testing for the forecasting of crop production of agriculture farm. The time series forecasting is based on the historical data of 21 years of agriculture farm. The robustness of the models is examined on the basis of error estimates. The study reveals some interesting feature of time series forecasting crop production and provides a better platform for short term production forecast for the small area.

Keywords: Error estimates, Forecasting Production, Fuzzy Time Series.

DOUBLE DIFFUSIVE INSTABILITY OF STRATIFIED, VISCO-ELASTIC (MAXWELL) FLUID IN POROUS MEDIUM WITH SUSPENDED PARTICLES

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ABSTRACT

The Double- diffusive instability of stratified visco- elastic (Maxwel) fluid in porous medium with the effect of suspended particles is considered. In the present paper by a number of theorems providing conditions for instability bounds on the growth rate of unstable modes and the characterization of modes providing a clear cut effects of dust particles and other parameters.

Keywords: Double Diffusive Instability, Stratified Fluid, Visc-Elastic Fluid, Porous Medium and Suspended Particles.

A SEMI CLOSED LOOP STRUCTURE WITH REVERSE LOGISTICS OPERATIONS UNDER THE PERMISSIBLE DELAY IN PAYMENT

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ABSTRACT

Reverse logistics systems have become increasingly popular over the last decade in the business and academic community. Firms incorporate reverse flow to their systems for such reasons as ecological and economic factors, government regulations and social responsibilities. Reverse logistics manage the flow of returned used products for remanufacturing or repairing or other purposes. We developed a centralized open loop supply chain inventory model under the situation in which the supplier provides the retailer with a permissible delay of payments. The supplier offers different discount rates of price at different delay periods. Demand is taken to be price and stock dependent. As a result, in this article, we establish a mathematical model to determine the optimal inventory policies. Illustrative examples, which explain the application of the theoretical results, are given. Numerical and the sensitivity analysis are also reported.

Keywords: Numerical System.

SEASONAL EFFECT ON A REVERSE LOGISTICS INVENTORY MODEL FOR DETERIORATING ITEMS

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ABSTRACT

In this paper, we investigate the seasonal effect on reverse logistics inventory model for deteriorating products. The model is fairly general as the demand rate, up to the time point of its stabilization, is a general function of time. Here we determined the inventory model with coordinated procurement and remanufacturing. The system is subject to remanufacturing/refurbishment of the returned items with two different quality standard, remanufactured products whose quality standard is as good-as those of new products are delivered to the primary market and the refurbished products of inferior quality are delivered to the secondary market. As a result, in this article, we establish a mathematical model to determine the optimal replenishment cycle. Illustrative examples, which explain the application of the theoretical results as well as their numerical verifications, are also given. Finally the sensitivity analysis is reported.

Keywords: Quality.

A STUDY OF PRODUCTION OF A SUGAR PLANT & SEASONAL FLUCTUATIONS THROUGH TIME SERIES ANALYSIS

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ABSTRACT

This paper presents the production of a sugar plant and its Modeling and Analysis of the agricultural production. It contains a comparative study of three and its testing for the forecasting of sugar production of agriculture farm. The time series forecasting is based on the historical data of 14 years of agriculture farm. The robustness of the models is examined on the basis of estimates obtained by a sugar plant. The study reveals some interesting feature of time series forecasting sugar production and provides a better platform for short term production forecast for the small area.

Keywords: Variances, Forecasting Production, Time Series.

A NOTE ON NON-CONVEX MIXED-INTEGER NON-LINEAR PROGRAMMING

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ABSTRACT

A wide range of problems arising in practical applications can be formulated as mixed-integer nonlinear programs (MINLPs). For the case in which the objective and constraint functions are convex, some quite effective exact and heuristic algorithms are available. When non-convexities are present, however, things become much more difficult, since then even the continuous relaxation is a global optimization problem. We survey the literature on non-convex MINLPs, discussing applications, algorithms, and software. Special attention is paid to the case in which the objective and constraint functions are quadratic.

Keywords: MINLP's.

EFFECT OF MAGNETIC FIELD ON THERMAL INSTABILITY OF VISCO-ELASTIC WALTER'S (MODAL B′) NANOFLUID LAYER HEATED FROM BELOW

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ABSTRACT

Effect of magnetic field on thermal Instability of visco-elastic Walter's (modal B′) nanofluid layer heat from below is investigated for more realistic boundary conditions. By applying Perturbation method, Normal mode technique, the dispersion relation has been derived. Galerkin method is used in the solution of the Eigen value problem. The effects of the various physical parameters of the system, namely, Lewis number, modified diffusivity ratio, nano particle Rayleigh number and magnetic field on the stationary convection have been investigated both analytically and graphically. The Lewis number, modified diffusivity ratio and nano particle Rayleigh number are found to have destabilizing effect, whereas magnetic field has a stabilizing effect for stationary convection.

Keywords: Nanofluid, Walter's (modal B′) Visco-Elastic Fluid, Normal Mode Technique, Oscillatory Convection, Galerkin Method, Rayleigh Number, Lewis Number, Modified Diffusivity Ratio, Magnetic Field.

COMBINED EFFECT OF ROTATION AND MAGNETIC FIELD ON THERMAL INSTABILITY OF COUPLE-STRESS FERROMAGNETIC FLUID IN THE PRESENCE OF VARIABLE GRAVITY FIELD

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ABSTRACT

This paper deals with the theortical investigation of the effect of couple-stress, rotation, magnetic field and magnetization on the thermal convection in a couple-stress ferromagnetic fluid in the presence of variable gravity field, rotation and uniform magnetic field. For a flat fluid layer contained between two free boundaries, an exact solution is obtained using a linearized stability theory and normal mode analysis. For the case of stationary convection, couple-stress and magnetic field have both stabilizing and destabilizing effect under certain conditions, while in the absence of rotation, both these parameters have stabilizing effect if $\lambda < 0$ *and destabilizing effect if* $\lambda < 0$ *. Also, rotation has a stabilizing effect on the system if* $\lambda > 0$ *and destabilizing effect if* $\lambda < 0$*. It is also found that magnetization has a stabilizing effect on the system for both* $\lambda > 0$ *and* $\lambda < 0$*. The critical Rayleigh number for the onset of instability is determined numerically and graphically also. The principle of exchange of stabilities is found to hold true in the absence of rotation and magnetic field under certain conditions.*

Keywords: Thermal Instability, Couple-Stress Fluid, Rotation, Magnetic Field, Ferromagnetic Fluid.

ON TRACES OF N-ADDITIVE MAPPINGS ON PRIME RINGS WITH INVOLUTION

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ABSTRACT

*Let R be a ring with centre Z(R). In this paper, we prove that a nonzero square closed *-Lie ideal L of a *-prime ring R of characteristic different from $(2^n - 2)$ is central if for all x; y in L then one of the following holds; (i) $f(x)f(y) \pm xoy \in Z(R)$; (ii) $[x; y] - f(xy)f(yx) \in Z(R)$; (iii) $f(x)of(y) \pm [x; y] \in Z(R)$; (iv) $f(x)\ of(y) \pm xy \in Z(R)$; (v) $f(x)f(y) \pm yx \in Z(R)$; where f is the trace of an n-additive map $F : R^n \to R$.*

Keywords: N-Additive Mappings.

USE OF ROUTING PROTOCOLS IN WIRELESS NETWORK

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ABSTRACT

A routing protocol specifies how routers communicate with one other; allocate information that enables them to select routes between any two nodes on a computer network. Routers are basically used for "traffic directing" functions on the Internet; data packets are forwarded from router to router through the network of internet until they reach their destination computer. Routing algorithms determine the specific choice of route. Each router contains the prior knowledge only of networks attached to it directly. A routing protocol shares this information first among immediate neighbors, and then throughout the network. This way, routers gain knowledge of the topology of the network. The ability of routing protocols to energetically adjust to changing conditions such as disabled data lines and computers and route data around obstructions is what gives the Internet its survivability and dependability.

The specific characteristics of routing protocols include the manner in which they avoid routing loops, the manner in which they select preferred routes, using information about hop costs, the time they require to reach routing convergence, their scalability, and other factors such as relay multiplexing and cloud access framework parameters. Certain additional characteristics such as multilayer interfacing may also be employed as a means of distributing uncompromised networking gateways to authorized ports.[1] This has the added benefit of preventing issues with routing protocol loops.

Keywords: Traffic Directing, Routing Protocol, Routing Convergence, Data Packets.

A SURVEY ON UTILITY OF APPLICATIONS OF JAVA PROGRAMMING

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ABSTRACT

Java applications are used in various fields, Java provides GUI development through various means like Abstract Windowing Toolkit, AWT contains a number of components such as menu, button, list, and many third-partycomponents.

Java Platform, Micro Edition (Java ME or J2ME) is a cross-platform framework to build applications that run across all Java supported devices, including feature phones and smart phones.

Embedded systems, ranging from tiny chips to specialized computers, are components of larger electromechanical systems performing dedicated tasks. Devices like Micro SD Card, Sim Cards.

Java provides support for web applications through Servlets, Struts or JSPs. The easy programming and higher security offered by the programming language.

The Java ecosystem today contains multiple Java web servers and application servers. While Apache Tomcat, Rimfaxe Web Server (RWS) dominate the web server space, WebLogic, and WebSphere dominate commercial application server space.

Java Enterprise Edition (Java EE) is a popular platform that provides API and runtime environment for scripting and running enterprise software, including network applications and web-services. Oracle claims Java is running in 97% of enterprise computers. The higher performance guarantee and faster computing in Java has resulted in high frequency trading systems.

Java is the choice of many software developers for writing applications involving scientific calculations and mathematical operations. These programs are generally considered to be fast and secure. They have a high degree of portability and low maintenance.

In conclusion, Java is widely used in different types of applications.

Keywords: Desktop GUI Applications, Mobile Applications, Embedded Systems, Web Server.

USE OF MOBILE DEVICES IN AD-HOC NETWORK

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ABSTRACT

A mobile ad hoc networks an independent collection of smart devices that communicate with each other over wireless links and cooperate in a distributed manner in order to provide the necessary network functionality in the absence of a particular framework.

In Ad hoc network each mobile host acts as an router which makes the ad hoc network begins with at least two nodes broadcasting their presence with their respective address information, they also have the capability and ability to include their location information if GPS required. This type of network, operating as a stand-alone network or with one or multiple points of attachment to cellular networks or the internet, paves the way for numerous new and exciting applications. Application scenarios include, but are not limited to: emergency and rescue operations, conference or campus settings, car networks, personal networking etc. This paper provides insight into the potential applications of ad hoc networks and discusses the technological challenges that protocol designers and network developers are faced with. These challenges include routing, service and resource discovery, internet connectivity, billing and security. Smart phone ad hoc networks use the existing hardware in commercial available smart phones to create pair-to-pair networks without relying on cellular carrier networks, wireless access points, or traditional network infrastructure.

Keywords: Mobile, Networks, Connection.

THE DESIGN ALGORITHM FOR COLLEGE MANAGEMENT SYSTEM IN PHP

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ABSTRACT

The focus of this project work is to automate the various tasks that are performed by any faculty in a department. This includes personal and academic details of each student of every course, marking attendance of each day, generation of list of detained students from exams (such as sessional, semester, practical etc), storing marks scored in exams and generation of score card (result) based on the marks.

For the ease of understanding the output data from different modules of this project work will mostly be shown in the tabular form. Not only the ease of understanding, the output will also be printer friendly so that is can be printed out in the form of a hardcopy for the ready reference of the interested parties.

This project will be based on PHP, MySQL will fulfill the database needs of this project work and HTML & CSS will be used to provide the better look and feel to the User Interface.

For the purpose of security, an admin panel will be created which will require a Login Id and Password. This will ensure that all the data is in safe hands.

Keywords: Automate, Department, Faculty, Students, PHP, MySQL.

SCOPE OF ENCRYPTION TECHNIQUES USED IN CRYPTOGRAPHY

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ABSTRACT

Data Security is a major issue which we are facing today in this digital world of communication. As we know that today unauthorized users and hackers are everywhere in the world in the search of our useful data which they used for different purposes. So, a mechanism or techniques is required to protect our data. It can be achieve by Encryption techniques. Encryption is the process of scramble a message so that only the intended recipient can read it. Encryption can provide a means of securing information. As more and more information is stored on computers or communicated via computers, the need to insure that this information is secure to interested or tamper becomes more relevant. With the fast progression of digital data exchange in electronic way, Information Security is becoming much more important in data storage and transmission. Information privacy has a prominent significance in the study of ethics, law and most recently in Information Systems. With the evolution of human intelligence, the art of cryptography has become more complex in order to make information more secure. Arrays of Encryption systems are being deployed in the world of Information Systems by various organizations. In this paper, a survey of various Encryption Algorithms is presented.

Keywords: Encryption, RSA, DES, 3DES, AES.

A SURVEY OF WIRELESS SENSOR NETWORK

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ABSTRACT

A wireless sensor network the existing cluster base techniques may result in increased network work. WSNs are spatially distributed self-directed sensors to monitor physical or environmental conditions, such as temperature, sound pressures etc. Sensor networks can contains hundreds or thousands of sensing notes. The development of wireless sensor networks was motivated by military applications such as battlefield surveillances; networks are used in many industrial and applications, such as industrial process and control, machine, health monitoring. Wireless sensor network refers to a group of spatially dispersed and dedicates sensor for monitoring and recording the physical conditions of the environment and organizing the collected data at a central locations. The more modern networks are bi-directional, also enabling control of sensor activity.

Keywords: Sensor, Terrestrial, Reliability.

IMPACT OF INTERNET ON OUR SOCIETY

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ABSTRACT

Internet is a large network of computer networks spread around the world. Its main is to help in communication and share resources. If we talk about the humans who develop it, come so far with changing time with various inventions for the development of human needs. We humans started the journey from Stone Age and end with the modern technological 21st century witnessing numerous innovations from fire to firearms, from stone to buildings, from wood to massive ships, from a small pin to a big aeroplane and internet brought a revolution in bringing unpredictable changes in our lives. It really proves to be the most important and useful part of our lives and stands out amongst us.

As internet grows high and high, its security concerns also rises like cyber threat, cyber war, cyber terrorism whereby the privacy as well as lives of people always hinges on potential danger. With connectivity, it enables people to commit some societal things like drinking, smoking or abusing which affects the goodness of an individual in society. Sometimes it facilitates the abuse of freedom of expression which may result in spoiling image or dignity of a person. You can see the real example of Facebook, it decreases its value because of its privacy settings. Another major problem is addiction of internet which affects people badly. They have less interaction with real world, less physical activities and now they have leading an unreal life which moves around the internet only. But the thing is when a new technology has come, it comes with its security and precautions.

Keywords: Internet, Cyber Security, Privacy Aspects, Internet Addiction.

REUSE OF A USABILITY FUNCTIONALITY IMPLEMENTATION IN WEB APPLICATIONS

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ABSTRACT

Software system usability is recognized as a quality attribute related not only to the user interface but also to applications design. In this paper we analyze the feasibility of designing and programming reusable solutions for implementing usability features that have a major impact on design. We develop case studies to find common application scenarios, responsibilities, classes, methods, attributes and block of code, which we use to propose reusable solutions specified as patterns. In this paper we report the results for the progress feedback usability functionality.

Keywords: Software Engineering, Reuse, Usability, Design Pattern, Programming Pattern.

A NEW COPPER ION SELECTIVE ELECTRODE BASED ON BIS-THIOUREA IONOPHORE

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ABSTRACT

A copper ion selective poly(aniline) solid contact electrode based on 1,4-bis(N'-benzylthioureido) benzene ionophore was successfully developed. The electrode exhibits a good linear response of 27.4 mV / decade (at 20 ± 0.2°C, r^2=0.9987) within the concentration range of 1 x 10^{-1} ~ 1 x 10^{-6} M copper solution. The composition of this electrode was: ionophore 2.5, polyvinylchloride 16.5, 2-nitrophenyloctylether 30.5, KTpClPB 2.0 (mass). This 2-nitrophenyloctylether plasticizer provides the best response characteristics. The electrode shows good selectivity for copper ion in comparison with other cations and this is a significant improvement compared to ISEs with other ionophores. This electrode is suitable for use with aqueous solutions of pH 3.0 ~ 7.0 and the standard deviations of the measured emf difference were 2.01 and 1.99 mV for copper sample solutions of 1.0 x 10^{-2} M and 1.0 x 10^{-4} M, respectively. The stabilization time was less than 65 seconds and response time was less than 55 seconds.Having applied this electrode to artificial human serum directly, we could get same satisfactory results [response slope : 27.1 mV/decade, response range : 1.0 × $10^{-1.0}$ ~ 1.0 × $10^{-5.3}$ M (r^2=0.9960) in artificial human serum].

Keywords: Copper ion, SCEs, ISEs, Bis-Thiourea Ionophore, Potentiometry.

EFFECT OF ALCOHOLIC EXTRACT OF SAPINDUS MUKOROSSI ON SOME BIOCHEMICAL PARAMETERS OF TESTES OF MALE ALBINO RATS

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ABSTRACT

Alcoholic extract of fruit of Sapindus mukorossi 25 mg/100g body weight caused increase in the body weight but decrease in the weight of testes after 15 and 30 days of treatment in male albino rats. Decrease in the level of sugar, cholesterol, total protein and acid phosphatase but increase in the level of alkaline phosphatase in testes were observed. Sperm count showed highly significant decrease. One group of experimental animals was kept on normal diet for 30 days after 30 days of extract feeding. In this reversibility group, recovery was seen in sperm count and the levels of sugar, cholesterol, total protein, alkaline phosphatase, acid phosphatase showed increase in comparison with 30 days but remain decrease to the normal control level.

Keywords: Sugar, Acid Phosphate.

DESIGN AND MODELING OF HYDRO ELECTRIC POWER PLANT USING MATLAB SIMULATOR

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ABSTRACT

Hydro power plant is one of the non- conventional renewable energy sources for power generation where the electrical energy is produced with the help of storage water. There are many hydro power plants in our nation which share the 10 % of the total power generation in the country. The hydro power plants include the penstock, governor, turbine and alternator/generator. This paper focus on to design, develop and modeling a hydro power plant. The power plant modeling has been done with the help of mat lab simulation simulator. Modeling the dynamic aspect of water flowing through the penstock as well as the opening and closing of wicket gate has been done. The modeling of hydraulic turbine, governor and synchronous machine (3 phase alternator) is also done with the simulator. To check the stability of the modeled hydro power plant a three phase to ground fault have been introduced in the model at t= 0.4s and removed after t= 0.6s. The result shows that the generated voltage regained its stability as a PID controller is incorporated in the hydraulic turbine model. The speed of machine also regained stability within the specified time interval.

Keywords: PID.

A PERFORMANCE ANALYSIS OF TRUSTED SYSTEM FOR SECURE NETWORK

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ABSTRACT

This paper present a performance analysis based on critical path analysis. The proposed approach is used as modified approach of Remote method invocation used in two phase. In the first phase Method is used to create a trusted center. The trusted centre is used to obtain for a wide range of parameter checking before associated to request workstation overcome the vulnerability and second phase allocate all the machine, a scheme for authentication of user and secure the network by man– in – middle attack . The algorithms concentrate to reduce overall delay by applying powerful and robust features .The performance verified by NS2.

Keywords: Trusted Centre, Remote Method Invocation, Vulnerability, NS2.

NACL STRESS INDUCED ANTIOXIDANT ENZYMES REVEALED SALINITY TOLERANCE IN PIGEON PEA

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ABSTRACT

Two contrasting pigeon pea (Cajanus cajan) cultivars for salt stress were exposed to NaCl (25, 50, 100 and 150 mM). NaCl stress inhibits seedling growth (shoot-root length, fresh and dry mass) significantly in sensitive cultivars at 100 mM concentration. However, in tolerant cultivar inhibition observed at 150 mM. Photosynthetic pigment, chlorophyll was also showed similar response. However, carotenoids content showed varied response. In contrast to growth and pigment content, production of superoxide radicals ($O_2^{\circ-}$) and hydrogen peroxide (H_2O_2) were higher in sensitive cultivars. Whereas, in tolerant cultivars superoxide radicals ($O_2^{\circ-}$) and hydrogen peroxide (H_2O_2) were low. To scavenge free radicals, various antioxidant enzymes were produced, which protect from inhibitory effect of NaCl. Higher Superoxide dismutase (SOD), Peroxidase (GPOD), Proline and Ascorbate content were recorded compare to control. Production of antioxidant enzyme was higher in tolerant cultivars, whereas in sensitive cultivars production of antioxidant cultivars were relatively less. Present study showed that production of higher antioxidant enzyme scavenge the free radicals thus protect from toxic effect of NaCl. Sensitive cultivars unable to produce antioxidant enzyme in such ratio which was not sufficient to mitigate the reactive oxygen species.

Keywords: Sensitive Cultivars.

IMPORTANCE OF BIOINFORMATICS TOOLS IN MOLECULAR BIOLOGY

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ABSTRACT

Bioinformatics is an interdisciplinary science, emerged by the combination of various other disciplines like biology, mathematics, computer science, and statistics, to develop methods for storage, retrieval and analyses of biological data. Computational tools are routinely used for characterization of genes, determining structural and physiochemical properties of proteins, phylogenetic analyses, and performing simulations to study how biomolecule interact in a living cell. Bioinformatics approaches can easily identify secondary structure elements in a protein sequence such as helices, sheets, domains, strands and coils. Proteins adopt a specific structure due to the presence of weaker electrostatic forces such as hydrogen bonds between these elements. Therefore, the propensity of appearing certain residues in a particular region of protein such as sheets or coils can be useful to predict a secondary structure of a protein. The most straightforward approach to predict a 3D structure of a protein molecule is comparative modeling. In this approach, a related template is selected to predict the unknown structure. Since, the 3D structural information is scant, and it is not possible to infer tertiary structures from similarity searches. Therefore, targets not having sufficient identity can be modeled by using different approaches such as known as threading or fold-recognition. In case where these tools fail to generate a reliable structure, then a combination of various physical principles is applied.

Keywords: Bioinformatics, Computer Science, Biomolecules, 3D structure, Hydrogen Bond.

APPLICATION OF MODERN TOOLS IN APPLIED BIOLOGY

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ABSTRACT

Applied biology is the understanding of how organism works from sub-cellular to whole levels. It also involves the use of living organism (microbes) to produce useful products, study of life and living organism, including their physical and chemical structures, functions, development and evolution. Tools in this category including those dedicated toward DNA synthesis, generation of new chemical diversity. Analyzing the basic modules of synthetic gene circuit, which like legos, can be sliced together, synthetic biologist develop efficient biochemical logic boards capable of controlling both intra as well as extra cellular activities. Prototype of 'DNA computers' capable of rationally examining m-RNA disease including invitra have been designed. The technology requires nanoparticles to be injucted each of which operates as a tiny computer individually interrogating cells and arresting the presence of diagnostic DNA markers like over expressed m-RNA.

Keywords: Applied Biology, Evolution, Genetic Engineering, Gene Circuit, Prototype, DNA Marker.

THERMOSOLUTAL INSTABILITY IN AN OLDROYD-B NANOFLUID IN A POROUS MEDIUM

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ABSTRACT

Thermosolutal instability in an Oldroyd-B nanofluid in porous medium is investigated by incorporating the effect of Brownian-diffusion and thermophoretic. The flux of volume fraction of nanoparticle is zero at the boundaries. Perturbation method, normal mode technique and Galerkin method is employed and the stability criteria for stationary and oscillatory convection have been derived and graphs have been traced to thermal Rayleigh-Darcy number, wave number, modified diffusivity ratio, Lewis number, thermosolutal Lewis number, nanoparticle concentration Rayleigh-Darcy number and solutal Rayleigh-Darcy number on the stationary and oscillatory convection.

Keywords: Thermosolutal Instability, Oldroyd-B Viscoelastic Nanofluid, Porous Medium.

INTERNET OF THINGS

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ABSTRACT

The Internet of Things (IoT) is the internetworking of vehicles, physical devices and other objects which consists of an embedded system with actuators, sensors and network connectivity that enable to collect and exchange data. The IoT allows objects to be sensed and controlled remotely across existing infrastructure of network, creating best opportunities for more and more integration of the real world into machine -based systems, and result in improved efficiency, accuracy, and economic benefit. The IoT is a fasting increasing and promising technology which becomes more and more present in our everyday lives. Furthermore, the technology is an instance of the more general class of cyber-physical systems, which also encompasses technologies such as smart homes, smart grids, and smart cities. Considering the high-rate development of IoT technologies, and the significant increment in the number of the connected devices, comprehensive overview of the IoT system challenges, aims, architecture, applications, protocols, and market overview were discussed. An example of IoT solution, a simple IoT demo was implemented using the current cloud efficient software and hardware. With this demo, the effective design flexibility and simplicity of IoT solution were very large scale highlighted and two of the IBM IoT software, Bluemix and Node-RED were examined.

Keywords: IoT.

2-ARYLBENZOTHIAZOLES BASED FLUORESCENT AND CHROMOGENIC PROBES FOR THE SELECTIVE DETECTION OF PICRIC ACID

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ABSTRACT

*Picric acid (PA) has noteworthy importance in rocket fuels, pharmaceuticals, dye and chemical industries, etc. Apart from its significance, it is carcinogenic in nature, skin and eye irritant, and causes potential damage to lungs and other organs in respiratory system. Its exposure can also contaminate ground water and soil due to its high water solubility. Therefore, it is highly essential to develop sensors for detection of PA even at low concentrations. Fluorescent probes are preferred for detection of PA because of its high sensitivity and selectivity, easy sample preparation, etc. Most of the PA sensors have several disadvantages such as cumbersome synthesis of sensors, lack of selective detection of PA, low binding constant and detection limit towards PA, etc. Therefore, designing of efficient organic chemosensors with high sensitivity and selectivity for PA is still a challenge that needs to be addressed.A novel protocol for the synthesis of 2-arylbenzothiazole precursors under metal- and base- free conditions with wide skeletal diversity was reported. All 2-arylbenzothiazoles **3** could efficiently sense PA, a strong explosive, at micromolar levels over other nitro analytes. Best results were obtained with **3c** which showed 95% quenching of emission with a detection limit of the order of 19.0 μm. The hydrogen bonding between the imidazole ring of **3c** and PA as well as the formation of charge transfer complex in ground state from picrate anion to benzothiazole ring of **3c** is responsible for fluorescence quenching. This mechanism was supported by 1:2 stoichiometry obtained by Job's plot and ^{1}H NMR titration studies of **3c**.*

Keywords: Hydrogen Bonding.

STUDY OF ELECTRICAL PROPERTIES OF POLYCRYSTALINE SILCON THIN FILM SOLAR CELL BASED ON HEAT TREATMENT

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ABSTRACT

The solar cells manufactured based on polycrystalline silicon are affected by the presence of grain boundaries. The grain boundaries form electrical shunts and increase the series resistance; they thus decrease the photovoltaic performance of these devices. The effect of electrical properties of the solar cell affected by the grain boundries is studied in this article. The electrical properties of thin film polycrsatline silicon, which is investigated based on heat treatment, have been studied. The results in the work based on two dopant boron and arsenic. The whole work is reported with help of COMSOL and matlab plateform. It has been studied that the arsenic based thin film is more resistive than the thin film based on boron becasuse of free charge carriers. We also noticed that the heat treatment before implantation reduces the number of trap carriers and the quantity of doping atoms at the grain boundaries. For low doping, the concentration of the freecharge carriers improves after the heat treatment for arsenic and boron doping respectively.

Keywords: COMSOL, MatLab, Solar Cell, Dopant.

MOBILE TRANSMISSION BASED BIOLOGICAL HAZARDS

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ABSTRACT

Mobile phone have now become an essential gadget for all the people of this society and the people can't refrain themselves from the various uses of mobile phones. These mobile phones and their base stations are continuously emitting non-ionizing and electromagnetic radiations which causes various hazardous effects on different biological system. These effects of electromagnetic waves may cause many problems and diseases in the human body like brain cancer, headache, nausea etc. The authority of health department is aware of the situation and they have implemented various laws to check the dose of radiation in the environment. But for providing better quality of service and to catter to the various needs of customers, the mobile phone service provider companies cannot always follow the laws seriously; as a result, humans are exposed to various biological hazards caused by radiations. This adverse effect may be minimized by the use of various nutritional supplements.All mobile companies can reduce microwave systems and use the best alternative which fiber optic cables, alternative using fiber optic system instead of microwave link, there are many advantages like increase in data rate transmission, radiation risks atmosphere effects on the system and reduction in radiation effects on human.

Keywords: Radiations.

WATER QUALITY INDEX (WQI): A TOOL FOR RANKING THE WATER BODIES BASED ON POLLUTION LEVEL

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ABSTRACT

The health status of the mankind directly or indirectly depends on quality of water. When we discuss the quality of water, it depends on different parameters. Water quality parameters are categorised into physical, chemical, microbiological, and heavy metals. But knowledge of all these parameters is restricted to scientific communities. Knowledge about all these parameters is out of reach of most of the common people, they know only about two or three parameters (pH, TDS). But these two parameters are insufficient to understand the pollution level of water. Thus WQI is applied on the raw data of pollution level of water bodies to make it easy for common people to understand. The WQI was first developed by Horton in the early 1970s. The basic aim of WQI is to give a single value to the water quality of a source on the basis of one or the other system which translates the list of constituents and their concentrations present in a sample in to a single value. The index result represents the level of water quality in a given water basin, such as lake, river or stream. To get a comprehensive picture of overall quality of water bodies, the WQI was used. WQI is defined as a rating reflecting the composite influence of different water quality parameters on the overall quality of water.In the present study we focussed on seasonal changes in the water quality of river Hindon using water quality index (WQI). WQI value shows that water quality of River Hindon during all the season was in very bad condition (WQI<25).

Keywords: Seasonal Variation, Water Quality, Eutrophic, COD, BOD, EC, Turbidity, WQI.

HEALTH ASSESSMENT IN HUMAN BEING ON THE EXPOSURE OF INDOOR AIR POLLUTION DUE TO BIOMASS COMBUSTION IN RURAL AREA

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ABSTRACT

Accumulated research shows that Biomass fuels are some materials, derived from plants or animals, which are deliberately burnt by human. China, South Africa and some other countries also use coal extensively for domestic needs. About three billion people worldwide use biomass fuel (e.g. wood, agricultural residues, dung) for cooking and household energy. These biomass fuels are usually burnt as open fire which results high indoor and outdoor air pollution and harmful for women and young children. Biomass smoke contains many harmful components such as particulate matters and carbon monoxide gas, which can cause acute respiratory infections, pneumonia, tuberculosis, lower birth weights, cataract, nervous and muscular tissue fatigue. Smoke, also contains sulphur and nitrogen oxides and hydrocarbons which can lead to cancer. In rural areas, women and children are highly exposed to harmful smoke and suffer the most serious health damage. Respiratory infections alone, caused four to five million deaths per year among small children, which is equal to deaths from diarrhea diseases. Some 1.9 million additional deaths in rural, and another 0.45 million deaths in urban are attributed to indoor air pollution per year are blamed through suspended particulate matter. In developing countries, the problem of indoor air pollution far outweighs the ambient air pollution. There are four principal sources of indoor air pollution (i) combustion (ii) building material (iii) the ground under the building and (iv) bioaerosole .Woman, who cooks with these bio fuels and children living in these homes, face high risk from such exposures.

Keywords: Bioaerosole.

DESIGN PATTERNS IN VARIOUS DEFINING ASPECTS

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ABSTRACT

As you know that design pattern gives a general reusable answer for the regular issues happen in software design. The patterns regularly show connections and co-operations between classes or items. The thought is to accelerate the advancement procedure by giving all around tried, demonstrated improvement/design worldview. Design patterns are modifying language free systems for taking care of a typical issue. That implies a design pattern speaks to a thought, not a specific usage. By utilizing the design patterns you can make your code increasingly adaptable, reusable and viable.It's not compulsory to execute design patterns in your task consistently. Design patterns are not implied for venture improvement. Design patterns are intended for regular critical thinking.

This paper contains all defining aspects and issues of design pattern and their uses in forward engineering.

Keywords: Design Pattern, Detection, Critical Thinking Etc.

DISCOVERY OF THE POTENTIAL ANTI-LEISHMANIAL AGENTS THROUGH THE USE OF ADVANCE TOOLS

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ABSTRACT

Visceral leishmaniasis is caused by the protozoan parasite Leishmania donovani. Research over the past decade has identified a number of drugs and formulations that offer improved treatment for this disease. The drugs for leishmaniasis's treatment are sodium stibogluconate (pentostam) and meglumine antimonate (glucantime), but they exhibit renal and cardiac toxicity. Although newer treatments exist, they are not optimal due to problems of toxicity, high price or difficulty in administration. Given the problems of toxicity, need for hospitalization, associated with the currently available drugs for leishmaniasis, it is clear that patients urgently need new, improved, treatments to replace or complement these drugs. So it will be beneficial to optimize existing anti-leishmanial agents using QSAR modeling techniques to identify the important molecular properties required for the effective inhibition of parasite. In view of this we decided to develop 3D pharmacophore models from the ligand based approach are very useful for analyzing the ligand–receptor interactions. Therefore, it is sensible to identify a series of structurally diverse set of putative active compounds with known binding affinities to understand the structural requirements for the potent and selective drugs against this target.

Keywords: Visceral Leishmaniasis, Leishmania Donovani, 3D Pharmacophore Model, Ligand Based Approach.

DEVELOPMENT OF SOME INVENTORY MODELS FOR INSTANTANEOUS DECAYING ITEMS WITH SHORTAGES

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ABSTRACT

It is a very necessary way for moving business world smoothly that we must satisfied our customer properly with the restriction of maximize our profit and minimize the cost of production. So we should keep a balance between over stocking and under stoking and this balance should be made by inventory. Inventory constitutes the principle items in the working capital of the majority of trading and industrial companies.

The effect of deterioration is very important in inventory systems. It is important to control and maintain the inventories of decaying items for the modern corporation. One of the most unrealistic assumptions in traditional inventory models was that items preserved their physical characteristics while they were kept stored in inventory.

Most of the inventory models were formulated in a static environment where the demand is assumed to be constant and steady. In fact, the constant demand rate is only valid during the maturity phase of time. Many inventoried items such as electronic products, fashionable clothes, food products and domestic goods generate increasing sales after gaining consumer's acceptance. The sales for the other products may decline drastically due to the introduction of more competitive products or due to the change of consumer's preferences. Therefore, the demand of the product during its growth and decline phases can be well approximated by variable -time-dependent function. We will study the effect of deterioration and lost sales on different variable demand rates with the combination of other realistic factors.

Keywords: Time-Dependent Function.

ANALYSIS OF SOME INVENTORY SYSTEMS WITH STOCK DEPENDENT DEMAND AND DETERIORATION

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ABSTRACT

Inventory is the sum of the value raw materials, fuels, lubricants, spare parts, maintenance, consumables, semi-processed materials and finished goods at any given point of time. Inventory control is one of the key activities of business logistics, has always been a major preoccupation for the company's survival and growth. A corporation can earn income actually from using mathematical modeling for inventory. This modeling help to maximize income and maintain having inactive products, preserve the production in formatting the finest phase to manufacture goods and they also update the quantity of the manufactured goods that should be produced in order to preserve costs down. Using the modeling we can choose the finest phase and amounts of the products to produce. There are different mechanisms of inventory models counting: the costs of manufacturing, storage costs, shortage penalty costs, revenues, salvage costs, and discount rates. These methods and others form equations that are used to optimize the corporation profits and mostly production. The attitude of the estimated learning is to construct and assess some inventory models for decaying material in the production process situations with stock dependent demand and other practical combinations. We hope that our work will present a real base for the advance understanding of this environment of inventory models.

Keywords: Inventory Models.

SYNTHESIS AND APPLICATION OF MOLECULARLY IMPRINTED POLYMER ON SELECTIVE SOLID-PHASE EXTRACTION FOR THE DETERMINATION OF ENDOSULFAN PESTICIDE RESIDUE IN SOIL

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ABSTRACT

A novel sample clean-up procedure using molecularly imprinted polymer as the solid-phase extraction material for the determination of endosulfan residue in soil samples has been developed. The molecularly imprinted polymer (MIP) was synthesized by non-covalent method with endosulfan as the template. The selectivity and affinity of the MIP was evaluated by equilibrium adsorption and HPLC experiments, which demonstrated that the MIP has specific affinity for the template. The template-MIP interaction was studied by investigating the influence of different mobile phases on the retention of the template, which provided basic knowledge for the selection of the washing and elution solutions in the molecularly imprinted solid-phase extraction (MISPE) process. The study indicated that polar organic solvents with hydrogen bonding abilities have stronger eluting strength for the endosulfan. After the MISPE procedure, a clean baseline was obtained in the HPLC quantification analysis. The recoveries of the method using the combination of MISPE and HPLC were above 95% and the R.S.D. was less than 3.0% in the soil sample determinations. Low detection limit (0.09 μg g−1, when defined as 3 times of the noise) was also obtained in the method evaluation study.

Keywords: Molecular Imprinted Polymer, HPLC, Quantification Analysis.

ROBOTICS AND WIRELESS SENSOR NETWORKS

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ABSTRACT

Robotics and Wireless sensor networks have gained much attention these last years thanks to the great set of applications that accelerated the technological advances. Such networks have been widely investigated and many books and articles have been published about the new challenges they pose and how to address them. One of these challenges is node mobility: sensors could be moved unexpectedly if deployed in an uncontrolled environment or hold by moving object/animals.

Beyond all this, a new dimension arises when this mobility is controlled, i.e. if these sensors are embedded in robots. These robots cohabit with sensors and cooperate together to perform a given task collectively by presenting hardware constraints: they still rely on batteries; they communicate through short radio links and have limited capacities.

Robotics and Wireless Sensor Networks (WSN) which we refer to as Robotic Wireless Sensor Networks (RWSN). We define a Robotic Wireless Sensor Net- work as an autonomous networked multi-robot system that aims to achieve certain sensing goals while meeting and maintaining certain communication performance requirements, through cooperative control, learning and adap-tation. While both of the component areas, i.e., Robotics and WSN, are very well-known and well-explored, there exist a whole set of new opportunities and dimensions at the intersection of these two fields which are relatively or even completely unexplored. One such example would be the use of a set of robotic routers to set up a temporary communication path between a sender and a receiver that uses the controlled mobility to the advantage of packet routing. More and more researches focus on development of mobile wireless sensor networks (MWSNs) due to its favorable advantages and applications. In WSNs robotics can play a crucial role, and integrating static nodes with mobile robots enhances the capabilities of both types of devices and enables new applications. In this paper we present an overview on mobile sensor networks in robotics and vice versa and robotic sensor network applications.

Keywords: WSN.

PRESENTING A BEHAVIORAL CONTEXT TO DEVELOP HIGH QUALITY SOFTWARE USING PROPOSED FRAMEWORK

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ABSTRACT

Now days in software industry development is growing very rapidly. Many organizations are following different-different approaches to design and develop software. Many UML models and frameworks are supporting with different concepts to design architectures of software. The new startups in Software must be able to develop high quality software products in competitive fast era with good serviceable and useful purpose. The key objective of the research is to clarify related guidelines for software development precautionary measurements with human aspects of software design and development engineering. We must be able to create a common platform for software development future through research. Our main focuses on requirement phase of software development life cycle. In this view we are findings, How we can develop software through a dynamic requirement fetching process? And how we can make software product robust in nature to overcome the near future editing requirements? In order to meet the desired objectives, we proposed a mini framework of software development life cycle in context of behavioral software engineering and generate a systematic view through available literature to fit the outcomes of the research for increasing the reliability of the software product and confidentiality of the client to meet organization perspectives.

Keywords: UML, Reliability.

DATA INTEGRITY AND VERIFICATION MODEL FOR CLOUD

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ABSTRACT

Data integrity is the upkeep of and the confirmation of the exactness and consistency of, data over its whole life-cycle, and is a basic perspective to the outline, execution and use of any framework which stores, forms, or recovers data. In this research paper, a fitting technique that guarantees the integrity of data and in addition rightness of calculations done by the cloud service provider is introduced. For viably utilizing the storage highlights of cloud, the service provider ought to enable the cloud client to check the integrity of their data.

Integrity is a method for protecting the consistency of the put away data in cloud server and guaranteeing the innovation of the data put away in the cloud server. It implies that the data can be altered just by approved people, along these lines expanding the certification, confirmation and dependability of the cloud service providers.

Keywords: Data Integrity, Cloud, Storage, Data.

LITERATURE REVIEW OF COMPUTER NETWORK TECHNOLOGIES IN DIGITAL FORENSICS FOR SOCIAL NETWORK

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ABSTRACT

The computer Network is the backbone for the connectivity of individual systems, which share their resources and can be modeled as centralized, distributed and collaborated system. Computer networks are inherently social networks, linking people, organizations, and knowledge. They are social institutions that should not be studied in isolation but as integrated into everyday lives. The proliferation of computer networks has facilitated a de-emphasis on group solidarities at work and in the community and afforded a turn to networked societies that are loosely bounded and sparsely knit. The Internet increases people's social capital, increasing contact with friends and relatives who live nearby and far away. New tools must be developed to help people navigate and find knowledge in complex, fragmented, networked societies.

Moreover, easy access to science of digital forensics and associated techniques has lead to use of anti-forensics measures by malicious actors to cover their traces. The paper highlights the impact of latest trends, technological advancement and use of anti-forensics measures on digital forensics along with the response of digital forensics to them. Shortfalls in the said response have also been covered along with recommended measures to address them. Moreover, historical perspective and established procedures of digital forensics are also discussed.

Keywords: Network, Distributed, Data.

AN IMPROVED CIRCLE DRAWING ALGORITHM OF HEXAGONAL GRID ON A OCTAGONAL GRID

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ABSTRACT

In this article, a double-step circle drawing algorithm of hexagonal grid is presented as octagonal grid.It chooses the best approximate pixels to the circle by setting additional pixels in loop iterations with only integer arithmetic. The performance of the proposed algorithm is found to be better than those of the existing algorithms.

There is a 16-way symmetry consisting of eight reflections, seven rotations, and an identity on an octagonal grid, 12-way symmetry consisting of six reflections, five rotations, and an identity on a hexagonal grid, and an 8-way symmetry consisting of four reflections, three rotations, and an identity on a square grid.

Keywords: Grid, 8way.

SOME PROPERTIES OF SOLAR ENERGETIC PARTICLES, PROMINENCES AND RADIO BURSTS ASSOCIATED

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ABSTRACT

Solar energetic particles, prominences, type II radio burst and CMEs are very important eruptive phenomena from Sun. In this paper we have compared the properties of SEP associated CMEs, Prominence associated CMEs and Type II radio Burst associated CMEs and found that speed variation of SEP associated CMEs is high in compare to type II radio burst and Prominence associated CMEs. SEP associated CMEs has high deceleration rate while type II radio burst associated CMEs has much higher rate of constant acceleration in compare to SEP and Prominences associated CMEs. SEP, Prominences and type II burst associated CMEs follows solar cycle variation.

Keywords: Sun, CMEs, SEPs, Radio Bursts.

MEASUREMENT OF TEMPERATURE-TIME DEPENDENT BONDING STRENGTH OF RGO-ON-SODA LIME GLASS USING NANOSCRATCH TECHNIQUE

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ABSTRACT

2-D nanomaterials are widely used in many applications such as solar cells, flat panel display, light emitting diodes etc. For better life of the device, adhesion of the film with substrate should be very high. So, in this study, we have measured delamination energy of reduced graphene oxide (rGO) with soda lime glass with varying annealing temperature and treatment time by using nanoscratch technique. Graphene oxide (GO) was dip-coated on soda lime glass, followed by thermal reduction in $Ar+H_2$ atmosphere at different temperature and time. Delamination energy was found to be annealing temperature and treatment time dependent. A decay behaviour was observed in delamination with increasing annealing temperature and treatment time; due to the removal to highly electronegative oxygen functional groups between interface of rGO and glass substrate.

Keywords: rGO-on-Soda Lime Glass, Delamination Energy, Nanoscratch.

AN EOQ MODEL FOR DETERIORATING ITEMS WITH STOCK SENSITIVE DEMAND AND PARTIAL BACKLOGGING

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ABSTRACT

In this paper, an inventory model for deteriorating items with stock dependent demand under multiple cases of permissible delay has been derived. In corporate world, the proper stock level influence costumers and has a positive impact on sale. The shortage occurs and partially backlogged. The inventory model is illustrated numerically for different cases of permissible delay. The impact of demand parameter, deterioration rate, backlogging parameter and interest earn rate on critical time as well as on total system cost are determined by sensitivity analysis. Aim of this model is to find optimum cost of the system.

Keywords: Backlogging Parameter.

THE STUDY OF GENETIC POLYMORPHISM AMONG PAPAYA GENOTYPES USING DOMINANT MARKERS

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ABSTRACT

Papaya (Carica papaya L.) belongs to family Caricaceae, comprising of four genera including Carica, Facaratia*,* Farilla *and Cylicomorp. Out of these four genera, Carica have only one species i.e. papaya and it is native to Central and South America.Diseases and environmental stresses are commonly much more important factors limiting the food production around the world.Phenotypic variation among papaya varieties can be vary from small fruits to somewhat large fruit and spherical in female trees while cylindrical in hermaphrodite trees (Samson, 1986). The genetic variations in the germplasm could be used to study the genetics of the crop and thus used for breeding or conservation programmes (Sakiyama, 2000).Molecular markers have been used for identification of desirable traits and to study relationship among the existing papaya germplasm. The genetic polymorphism amoung 18 varieties of papaya were studied using two dominant markers i.e. RAPD and ISSR.Dendrogram created from the combined data from RAPD and ISSR showed similarity range from 0.67-0.95.The maximum value in similarity index was noted for four varieties in the II major group which are Pusa majesty and Pune selection; PS1 and Pusa dwarf. The percentage polymorphism varies within 25-100% with an average value of 47.2 % amongst cultivar.The PIC values of primers ranged between 0.02-0.52 and an average was found to be 0.20 per primer.*

Keywords: Molecular Markers, Genotypes, Dendrogram.

INHIBITION OF ATPASE ACTIVITY IN CYFLUTHRIN EXPOSED CHANNA PUNCTATUS AND ITS RECOVERY

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ABSTRACT

During present investigation specific activities of Na^{+}-$K^{+}$and Mg^{++}ATPase were worked out in hepatic, kidney and muscular tissues of a fresh water fish, Channa punctatus *at the intervals of fortnight and 30 days exposure to 20% of 96h TL_m of cyfluthrin, i.e., 0.00038 mg/l.The activities were found to be inhibited significantly at P<0.02.The recovery response of the adverse effects of cyfluthrin exposure was also carried out.The inhibition in the activity of Na^{+}-K^{+} ATPase after 15 days exposure was33.63%, 28.80% and31.87% which was recovered after 15 days in toxicant free water up to the levels of 12.41%, 10.12% and 14.77% in liver, kidney and muscles, respectively. The activity of Mg^{++} ATPase was inhibited by 38.31%, 35.38% and37.59% which was found to be recovered up to 14.49%, 12.54% and 14.18%in liver, kidney and muscles respectively. The activity of Na^{+}-K^{+} ATPase after 30 days exposure was inhibited to 48.86%, 38.24% and46.28% and after 30 days in control water that was recovered up to15.31%, 11.84% and 15.14% and inhibition of Mg^{++} ATPase was found to be 58.39%, 53.43% and55.75% and after recovery it was found to be 16.31%, 13.27% and 14.87% in liver, kidney and muscles respectively. This inhibition of the ATPaseactivities may alter cellular metabolism which mayresults invariation of physiology and could also cause alteration of nerve impulse transmission in the fish.*

Keywords: Channa Punctatus, Cyfluthrin, Tissues, ATPase, Recovery.

BIOCONVERSION OF SUGARCANE BAGASSE INTO FERMENTABLE SUGARS

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ABSTRACT

India being an agricultural country produces a large amount of lignocellulosic waste. Bioethanol production from lignocellulosic waste such as sugarcane bagasse, the major by-product of sugarcane industry, comprise the hydrolysis of cellulose into fermentable sugars followed by fermentation into ethanol. In the present study 10 fungi are isolated from agricultural field and screened for cellulase production on carboxy methyl cellulose (CMC) plates. Only 5 isolated fungi- – Trichoderma viridae, Trichoderma harzianum, Aspergillus flavus, Aspergillus niger and Aspergillus fumigatus, shows appreciable cellulase production on CMC plates. Out of these only Aspergillus fumigatus shows higher cellulase production (1.24 IU/mL) on sugarcane bagasse under liquid state fermentation. The sugarcane bagasse was given steam and alkali treatment for 10 mins to remove lignin and then hydrolysed by cellulase enzyme. After 12 hours of incubation 0.856 mg of glucose (fermentable sugar) is released per mL of enzyme.

Keywords: Cellulase, Sugarcane-Bagasse, Aspergillus.

AN INTEGRATED SUPPLY CHAIN MODEL FOR PERISHABLE PRODUCTS WITH TRADE CREDIT POLICY AND UNCERTAIN LEAD LEAD TIME

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ABSTRACT

This paper considers an integrated supply chain model which comprises of a supplier, a retailer and an end customer. The objective of this model is to develop a policy when the retailer's investment on preservation to investigate the model under permissible delay in payment. The inventory deteriorates and has a certain life time, after this time item has no demand. For the consideration of real world practices the supplier's lead time has been considered in the study. This study also examines the effect of inflation. In this model shortages are allowed during lead time and are completely backlogged. The derived model is also illustrated numerically.

Keywords: Supply Chain, trade credit, Lead Time, Deterioration

ROBOTICS AND IR SENSORS

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ABSTRACT

Robotics is an interdisciplinary branch of engineering and science that includes mechanical engineering, electronic engineering, information engineering, computer science, and others. Robotics deals with the design, construction, operation, and use of robots, as well as computer systems for their control, sensory feedback, and information processing. These technologies are used to develop machines that can substitute for humans and replicate human actions. Robotics is a broad field and everyday there is a pioneering invention in the field. Robots were invented by the humans just for fun but by now they are used for assisting humans in various sectors. Human beings are better suitable for multifaceted, imaginative, adaptive jobs, and robots are good for dreary, recurring tasks, permitting human beings to do the harder thinking jobs, whereas a robot is employed for substituting humans for various recurring tasks or entertainment to make living more expedient. ***Sensors*** *are sophisticated devices that are frequently used to detect and respond to electrical or optical signals. A Sensor converts the physical parameter (for example: temperature, blood pressure, humidity, speed, etc.) into a signal which can be measured electrically. The mercury in the glass thermometer expands and contracts the liquid to convert the measured temperature which can be read by a viewer on the calibrated glass tube. An oxygen sensor in a car's emission control system detects the gasoline/oxygen ratio, usually through a chemical reaction that generates a voltage. A computer in the engine reads the voltage and, if the mixture is not optimal, readjusts the balance. Motion sensors in various systems including home security lights, automatic doors and bathroom fixtures typically send out some type of energy, such as microwaves, ultrasonic waves or light beams and detect when the flow of energy is interrupted by something entering its path.*

Keywords: Sensors, Robotics.

CLOUD COMPUTING

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ABSTRACT

Technology innovation and its adoption are two critical successful factors for any business. Cloud computing is a recent technology paradigm that enables organization or individuals to share various services in a seamless and cost effective manner.

Cloud computing is the use of computing resources (h/d and s/w) that are delivered as a service over internet. The name cloud comes from the common use of a cloud-shaped symbol. Cloud providers manage the infrastructure and platforms that run the applications. Software as a service is sometimes referred to as "on-demand software" and is usually priced on a pay-per-use basis.

Cloud computing relies on sharing of resources to achieve coherence and economies of scale similar to a utility over a network. At the foundation of cloud computing is the broader concept of Converged infrastructure and Shared services

Keywords: Resources, Cloud, Software, Computing.

FINDING DYNAMIC TIME QUANTUM FOR CPU SCHEDULING USING FUZZY LOGIC

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ABSTRACT

Multiprogramming plays an important role in resources utilization more effectively and for the concept of Multiprogramming CPU Scheduling plays a key role. Scheduling technique decide that which processes will run on a given time to achieve maximum throughput, minimum latency, prevent starvation condition etc. There are ranges of CPU scheduling algorithms have been proposed to perform the said task. . In this paper a new CPU scheduling algorithm technique has been proposed which is based on Fuzzy Logic and compared with existing FCFS and Round Robin. Here Fuzzy Logic has been used to decide a value for time quantum that is neither too large nor too small such that every process has reasonable to response time and the throughput of the system is not decreased due to unnecessary context switches.

Keywords: Fuzzy Logic, CPU Scheduling, FCFS, Round Robin, Starvation Condition, Time Quantum.

AUTONOMIC COMPUTING

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ABSTRACT

Autonomic computing systems area computer system that managesthemselvesautomatically. This is the characteristics of distributed computing resources, which recognize and understand changes in the system, take appropriate corrective actions completely automatically, with close to zero human intervention. The key benefit is drastic reduction in the intrinsic complexity of computing systems and making computing more intuitive and easy to use by operators and users. It designed to mimic the human body's nervous system in that the autonomic nervous system acts and reacts to stimuli independent of the individual's conscious input an autonomic computing environment functions with a high level of artificial intelligence while remaining invisible to the users. Just as the human body acts and responds without the individual controlling functions. The autonomic computing environment operates organically in response to the input it collects.It is a computer's ability to manage itself automatically through adaptive technologies that further computing capabilities and cut down on the time required by computer professionals to resolve system difficulties and other maintenance such as software updates. The conclusion to move toward autonomic computing is driven by a desire for cost reduction and the need to lift the obstacles presented by computer system complexities to implement more advanced computing technology.

Keywords: Stimuli Independent, Intelligence, Adaptive Technologies, Intrinsic, Intuitive, Human Intervention.

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