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1.

Authors: M. A. Gopalan, S. Vidhyalakshmi, N. Thiruniraiselvi

Paper Title: Pythagorean Triangle with Hypotenuse-4 (Area/Perimeter) is 3 Times a Square Integer

Abstract: We present infinity many Pythagorean triangles, where, in each, the hypotenuse -4(Area/Perimeter) is a square multiple of 3. A few numerical examples are presented. Also, a few interesting relations among the sides of the Pythagorean triangles are given. Further, by considering suitable linear combination among the generators of the Pythagorean triangles, Diophantine 3-tuples and special dio-3 tuples with suitable property are obtained.

Keywords: Area/perimeter, Pythagorean triangle, square integer.

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2.

Authors: Dhiren Pandit, Jayesh Dhodiya

Paper Title: PCA+LDA Method for Face Recognition Using Neural Network

Abstract: Face recognition plays important role in many applications like video surveillance, retrieval of an identity from a database for criminal investigations and forensic applications. The face is considered as good bio-metric for many reasons: the acquisition process is non-intrusive and does not require collaboration of the subject to be recognized. The acquisition process of a face from a scene is simpler and cheaper than the acquisition of other bio-metrics as the iris and the fingerprint. On the other hand, many problems arise, because of the variability of many parameters like face expression, pose, scale, lighting, and other environmental parameters. Face recognition involved in application like problem of recognition of an identity in a scene. A system that automatically recognizes a face in a scene first detects it and normalizes it with respect to the pose, lighting and scale. Then, the system tries to associate the face to one or more faces stored in its database, and gives the set of faces that are considered as nearest to the detected face. This requires more computational resources and very robust algorithms for detection, normalization and recognition. In this paper we have implement different face recognition methods like Principle component analysis, Linear Discriminant Analysis and Fusion of PCA and LDA for face recognition. And better recognition rate is achieved by implementing neural network for classification.

Keywords: PCA, LDA, FFNN, MLP, PCA-NN, LDA-NN.

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3.

Authors: **S. Vidhyalakshmi, M. A. Gopalan, K. Lakshmi**

Paper Title: **On The Non-Homogeneous Quintic Equation with Seven Unknowns** $xy(x^2+y^2)+zw(z^2+w^2)=(X^2+Y^2)T^3$

Abstract: We obtain infinitely many non-zero integer solutions (x,y,z,w,X,Y,T) satisfying the non-homogeneous quintic equation with seven unknowns given by $xy(x^2+y^2)+zw(z^2+w^2)=(X^2+Y^2)T^3$. Various interesting relations between the solutions and special numbers, namely, polygonal numbers, Pyramidal numbers, Stella Octangular numbers, Octahedral numbers, Jacobsthal number, Jacobsthal-Lucas number, keynea number, Centered pyramidal numbers are presented

Keywords: Centered pyramidal numbers, Integral solutions, Non-homogeneous Quintic equation, Polygonal numbers, Pyramidal numbers.

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4.

Authors: **K. Ram Kumar, C. Suriyakumar, L. Vishnuvardan, S. Vignesh, C. Vigneswaran**

Paper Title: **One Wheeled Electric Personal Transporter**

Abstract: Inpresent scenario, every individual has a two wheeler and they are using this even for reaching short distances. By this, conventional resources like petrol are consumed more and more. Not only the depletion of resourses, it produces more environmental pollution hazards. To overcome this issue, comparatively unconventional energy resourses should be used. For this we have developed a electric operated unicycle., The outcomes this research paper is to design, build and control a self-balancing electric unicycle are presented. The design of the mechanical and electrical components is discussed, followed by a derivation of the dynamics of a generic unicycle. A linear control strategy to stabilize the unicycle is implemented on the physical system and a simulated model is derived from the system dynamics. Finally, comparisons of the results from simulations conducted on a model of the unicycle as well as experimental results are presented.

Keywords: One wheeled electric vehicle, robotic system, stabilization, state feedback control.

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Authors: **A. Kathiravan, Alamelu Nachiappan, K. Magueswary**

Paper Title: **A Firefly Algorithm Based Coordinated Design of Power System Stabilizer and Static Synchronous Series Compensator in Multi-Machine Power System**

5.

Abstract: It is widely accepted that power system stability is an important aspect in planning and promoting electric power system. This paper presents the transient stability analysis of the three-machine nine-bus test system using MATLAB. Generator angular frequency is a reliable indicator of the stability of the power system. Change in load, power generation or fault causes a fluctuation of the speed of the generators in the power system, resulting in fluctuation of the angular frequency of the power system. So rate of change of angular frequency is used as indicator of the transient stability of the system and measures taken to maintain stability and frequency of the system. This paper presents a coordinated control tuning of power system stabilizer (PSS) with Static Synchronous Series Compensator (SSSC) by firefly algorithm to enhance the power transient stability.

Keywords: Firefly Algorithm, Power system stabilizers, Static Synchronous Series Compensator (SSSC).

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6.

Authors: **Manju Somanath, V. Sangeetha, M. A. Gopalan, M. Bhuvaneshwari**

Paper Title: **On the Ternary Cubic Equation $3(x^2+y^2)-2xy+4(x+y)+4=51z^3$**

Abstract: The non-homogeneous ternary cubic Diophantine equation given by $3(x^2+y^2)-2xy+4(x+y)+4=51z^3$ is considered. Different patterns of non-zero distinct integer solutions to the above equation are obtained. For each of these patterns, a few interesting relations between the solutions and the special figurate numbers are obtained.

Keywords: Non-homogeneous, ternary cubic Diophantine equation, integer solutions, polygonal numbers, pyramidal numbers. 2010 Mathematics Subject Classification: 11 D 25.

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	Authors:	**Mahdi Hosseini, Hadi Hosseini, Seyed Amin Ahmadi Olounabadi, Ahmad Hosseini**
	Paper Title:	**Study the Effective of Lateral Load on Story Drift in RC Frame Structures**

Abstract: Story drift is defined as the difference in lateral deflection between two adjacent stories. Lateral deflection and drift have three effects on a structure; the movement can affect the structural elements (such as beams and columns); the movements can affect non-structural elements (such as the windows and cladding); and the movements can affect adjacent structures. Without proper consideration during the design process, large deflections and drifts can have adverse effects on structural elements, nonstructural elements, and adjacent structures. Drift problem as the horizontal displacement of all tall buildings is one of the most serious issues in tall building design, relating to the dynamic characteristics of the building during earthquakes and strong winds. Drift shall be caused by the accumulated deformations of each member, such as a beam, column and shear wall. In this study 20 story building with RC shear wall analysis is done with changing structural parameters to observe the effect on the drift (lateral deflection) of the tall building due to both wind and earthquake loading. There are three major types of structures were identified in this study, such as rigid frame, coupled shear wall and wall frame structures. So lateral forces due to wind or seismic loading must be considered for tall building design along with gravity forces vertical loads. Tall and slender buildings are strongly wind sensitive and wind forces are applied to the exposed surfaces of the building, whereas seismic forces are inertial (body forces), which result from the distortion of the ground and the inertial resistance of the building. These forces cause horizontal deflection is the predicted movement of a structure under lateral loads and The structural prototype is prepared and lots of data is been collected from the prototype. All the aspects such as safety of structure in shear, moment and in story drift have been collected. Main problems that would be arising due to earthquake in the structure are story drift and deflection of the building due to its large height and also torsion and others, so if the structure is proved to be safe in all the above mentioned problems than the structure would be safe in all cases in respect earthquake.

7.

Keywords: Story drift, wind load, frame structure, Seismic Load, shear wall.

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	Authors:	**Shanshan Guo**
	Paper Title:	**The Present Situation and Development Trend of the Express Logistics Industry**

8.

Abstract: In recent years, with the express logistics market demand expands gradually, the express industry revealed a rapid development momentum. But in its crazy expansion but there are many fatal behind the hidden trouble. This paper first to express the development of logistics industry in China are analyzed, and then discusses the logistics industry in China in the market structure, express policy laws, the good faith system, enterprise's main body treatment and so on, the defects of the logistics industry in China and to express the healthy development of the corresponding countermeasures.

Keywords: Express logistics; diversification structures; centralization.

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Authors:	**Rajesh Kumar Panda, Ralesh Ranjan Biswal, Jyoti Sankar Sahoo**
Paper Title:	**Power Efficient Double Gate MOSFET Full Adder Circuit using 45nm Technology**

Abstract: In designing an arithmetic circuit many aspects are to be taken into consideration. The main aspect is the power consumption. It is a tough task for the designers to design a circuit which consume less power in standby mode as well as in active mode. In an arithmetic circuit, the adder is an important module not only for addition operation but it is also the nucleus for many arithmetic operations. Hence it is required to reduce the power consumption of adder circuit in order to reduce the power consumption of the arithmetic module. As the efficiency of adder circuit is directly influence the efficiency of the arithmetic circuit, therefore many designs have been proposed in various literatures to resolve this issue. The very promising and advanced design is to implement the full adder circuit with double gate MOSFET. As technology growing, the full adder is now implemented by using 10 number of double gate transistors instead of 28 transistors as in the peer CMOS design. But still the power consumption of this circuit is not appreciably reduced. In this paper we proposed a design which is made up of 10T double gate (DG) MOSFETs in which all the bodies of P-type Double Gate-MOSFETs are connected to a supply less than the main supply and all the bodies of N-type Double Gate-MOSFETs are connected to another supply voltage whose value is slightly greater than zero. In the earlier design the output is not prominently stated but in this proposed modified design the output waveform is clearly distinguished by adding extra buffers to the output. In this new proposed design the static or standby power is reduced nearby 93% and the total power is reduced nearby 79% as compared to the earlier design. Simulation results of the proposed modified design is performed by cadence virtuoso with 45nm technology for validation.

Keywords: DG-MOSFET, 10T Full adder, Low power adder circuit.

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Authors:	**Prarthana Gupta, Brajesh Patel**
Paper Title:	**Simulation Model for Benchmarking Cloud Services Over Internet**

Abstract: With an increasing footprint of Cloud in daily lives of individuals and businesses, the question of embracing Cloud is no longer on how, but how soon. Cloud is at the center stage on the topic of innovation and consumers find a differentiating advantage of with adoption of Cloud. This is aided due to multiple factors such as Open Source development, Big Data, and Social Computing being made available for consumer use. As a matter of fact the cloud computing technologies are now playing a very vital role in almost every commercial as well as non-commercial field; including large or small-scale businesses, IT organizations, Government, Quasi-Government, Public and Private sectors. The outreach of Cloud products and services has been the maximum in Individual Consumer segment due to the significant growth and innovation in Mobile space in the last decade. However in most cases, these services are pre-packaged and given to consumers, by manufacturers or service

providers. The consumer has little choice to offer when they buy a packaged solution. The ability to appreciate the salient features and how can that be put to optimal use is a question that many consumers struggle with. The decision is also influenced by a variety of sources of information on cloud services and products who offer a good perspective, but often do not compare cloud products and services using a standard benchmarking technique. As it is a growing market, cloud providers try to attract the customers by highlighting only their strengths, and other marketing techniques. Over the last three research papers on similar topic, we have explained the rationale of why is a standard benchmarking technique needed, and how can that be achieved using a Service Demand Handler and Catalogue Manager for Cloud, and Unified Master Services Catalogue Manager. In this paper, we demonstrate how this technique can be used simulated using MATLAB software, and can be put to product implementation that can be used by standards benchmarking organizations such as IEEE or SPEC for further development.

Keywords: Cloud Computing, Cloud Standards, Cloud Service Providers, Cloud Benchmarking, Cloud Benchmarking Parameters, Cloud, Unified Service Catalogue, Service Demand Handle, Cloud Computing Benchmarking.

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Authors:	**Prarthana Gupta, Brajesh Patel**
Paper Title:	**Definition of Attributes for Standard Benchmarking of Cloud Services**

Abstract: Today's era is now embracing the cloud computing as a new emerging technology. As a matter of fact the cloud computing technologies are now playing a very vital role in almost every commercial as well as non-commercial field; including large or small-scale businesses, IT organizations, Government, Quasi-Government, Public and Private sectors. In a cloud environment the service provision is usually handled by large number of different service providers. As it is a growing market, these providers try to attract the customers by highlighting their strengths, and also undermining their areas of improvement. In this competitive era it's very difficult for the customer to evaluate or compare the Service Quality and Service Ratings for offered services. This tends to create even more complex situation in case of multi-cloud management environment when customers are required to choose different services from multi-cloud platform involving different service providers in order to fulfill their organizational needs. The Problem is to choose a service which provides optimum, cost-effective, highly available, reliable, portable, scalable, efficient and secured services in cloud environment. This problem becomes more severe in case of multi-cloud management platform, where complexity will be higher as involvement of different providers, result into a cumbersome process of choosing the best provider. If the customers are new user for this technology, it is very difficult task for choosing a provider. Even if customer is having some information regarding services or those who are familiar with the provider services, this problem of choosing best provider is also complex as it involves comparing all the services from each service providers individually, understanding all their security terms, rules and financial aspects separately. This process is thus time consuming, slow, complex and annoying for the customers especially for new users. There must be certain criteria's which forms the basis of Quality Rating Comparison Analysis of services between different service providers. If the standardization of the searched criteria is further worked-out, then it will help in creating a benchmarking for comparing services provided by different service providers. Also it will help in reducing the complexity and extra workload required by customers in searching best service provider, thus enabling faster and less time consuming approach.

Keywords: Cloud Computing, Cloud Standards, Cloud Service Providers, Cloud Benchmarking, Cloud Benchmarking Parameters, Cloud, Unified Service Catalogue, Service Demand Handler.

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12.

Authors:	**Preeti Bhatt, ArunimaVerma**
Paper Title:	**Design and Cost Analysis of PV System Using Nano Solar Cell and Cost Comparison with Grid**

Abstract: Nanotechnology is worldwide regarded as a key technology for innovations and technological progress in almost all branches of economy. In the present day scenario of electricity generation, photovoltaic system using nano solar cells is fast becoming an important area of research to make it a commercial product. Presently the PV market is dominated by wafer based crystalline Si cells, but is hampered by high cost. The paper presents the designing of PV system for a commercial organization to meet its load demand with nano solar cell. Moreover, the cost comparison of grid system and nano PV system carried out in this paper shows the economical superiority of nano solar cells over grid system.

Keywords: Nano solar cell, grid, nano PV system.

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13.

Authors:	**H. Lookman Sithic, R. Uma Rani**
Paper Title:	**An Analysis of Cancer Affected People using Classification Data Mining Algorithms**

Abstract: Data mining is a collection of exploration techniques based on advanced analytical methods and tools for handling a large amount of information. The techniques can find novel patterns that may assist as enterprise in understanding the business better and in forecasting. Much research is being carried out in applying data mining to a variety of applications in healthcare[1]. This article explores data mining techniques in healthcare management. Particularly, it talk about data mining and its various application in areas where people are mostly affected rigorously by cancer in Erode District, Tamil Nadu, India. The people affected by cancer using tobacco, chemical water. This paper identifies the cancer level using classification algorithms and finds meaningful hidden patterns which gives meaningful decision making to this socio-economic real world health venture.

Keywords: Data Mining, Cancer, Classification algorithms.

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14.

Authors: **R. Parameswari, N. Prabakaran**

Paper Title: **A Mobile Cloud Security on Electronic Healthcare Monitoring System through Virtual Private Network Using Blowfish Algorithm**

Abstract: An Electronic Healthcare Monitoring System (EHMS) provides a mechanism to transfer patient's healthcare records and images to healthcare professionals in an encrypted format by using blowfish algorithm for securing sensitive and confidential information as it is stored in cloud server through virtual private network (VPN). The mobile cloud server respects the privacy of a patient and keeps it secured by protecting the medical images and healthcare record like Electronic Health Record (EHR), Electronic Medical Record (EMR) and Personal Health Record (PHR) of the patients. EHMS is conserving the privacy of the healthcare information ensuring that this information cannot misuse. The Digital Imaging and Communications in Medicine (DICOM) medical images are considered with an aim to secure them during its storage and transmission. This is achieved using Blowfish Algorithm, a type of symmetric key cryptography. The two processes, encryption and decryption together form the cryptographic process. For ensuring security, the patients' healthcare record and images are encrypted by the patient before transmitting them and are decrypted by the doctors' after receiving them so that only the sender and the intended person can see the content in the healthcare record as well as images. Blowfish algorithm which uses a key of variable size up to 448 bits simply iterates the function 16 times (Feistel network). In this system DICOM image processing is done using MATLAB and the Blowfish encryption-decryption is performed using the VHSIC HDL (Very High Speed Integrated Circuit Hardware Description Language) platform. All the encrypted images and healthcare records will be stored it in a cloud server through virtual private network in a secured manner.

Keywords: Cloud Computing, Virtual Private Network, Blowfish algorithm, DICOM Images.

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Authors: **R. M. Wahul, B. Y. Pawar**

Paper Title: **Cloud Based Suburban Railway Ticket Booking and Validating System for Android Phone**

Abstract: In today's scenario booking suburban railway ticket is time consuming when compared to booking long journey tickets because later can be done through the Internet in the form of 'E-ticket' but there is no such provision for buying suburban tickets . Hence the "Cloud based suburban railway ticket booking and validating system for Android phone" can be used to buy a ticket with a smart phone. This system enables one to carry the ticket in his smart phone. User's ticket information is stored on the server side. The ticket will be produced in the form of a Unique Identification Number (UID). The user will have to create his account on his first visit and recharge his account then he can use this balance for future transactions. To bestow security to this application Secure Hash Algorithm (SHA) is used. Also the ticket checker is provided with a checker application to validate the user's UID ticket. Thus this application basically aims at making the task of buying suburban tickets much easier by saving time as people no longer have to stand in queues. Also job of the ticket checker becomes less tedious.

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Keywords: Android app, Cloud database, Suburban railway ticket booking.

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16.

Authors:	**Anupam Choubey, D. H. Das, Gautam Choubey**
Paper Title:	**Numerical Investigation of Performance of Double Tube Heat Exchanger using Nano Fluid**

Abstract: The current research aims at analyzing the heat transfer rate of the nano particles with double tube heat exchanger. Graphene, the nano particle under consideration, can be prepared using Hummers and Offeman method. The analysis has been done with the help of Ansys14 Fluent software. The physical properties (density, thermal conductivity, specific heat, viscosity) of the nano particles are taken from a standard journal and analyzed in a double tube heat exchanger. The simulation is done using the Ansys fluent for a particular concentration of graphene and the results are found to be almost similar. Hence the result obtained is standardized. The analysis is done for various concentration of graphene i.e. graphene 1(0.07% by weight) and graphene 2(0.080% by weight) with corresponding properties and analysis has been continued by making grooves on the outer surface of the inner tube in case of double tube heat exchanger. It has been found that the performance and heat transfer rate of double tube heat exchanger with grooving is better than that of without grooving.

Keywords: Nanofluids, Convective heat transfer, Laminar flow, Graphene.

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17.

Authors:	**R. Akila, M. Nandhini, S. N. Sivanandam**
Paper Title:	**Hetero Associative Memory Based Neural Network Classifier for Health Care Data Diagnosis**

Abstract: Classification is one of the predictive data mining tasks used to discover a model from the past data to predict some response of interest. In this work, Hetero Associative Memory based Neural Network (HAMNN) classifier is employed for health care data diagnosis. Classifier performance is enhanced by using Lern matrix, a popular model for associative memory. HAMNN classifier is built efficiently to improve the classification accuracy. This classifier provides promising results when experiments were conducted using six health care datasets from UCI machine learning repository.

Keywords: Neural network, Associative memory, Hetero associative memory, Lern matrix.

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Authors: **Reza Ghasemzade**

Paper Title: **Solid Waste Management and Estimation of Methane Production by Land Gem Simulation Model, Case Study: Iran, Rasht**

Abstract: Rapid population growth, rapid economic growth and rising living standards increasing municipal solid waste (MSW) production that causing its management to be a major worldwide challenge. There are different methods for disposal of wastes (waste disposal according to the current situation in various ways, such as the Landfill disposal, anaerobic purification methods, producing RDF (Refuse Derived Fuel), waste incineration and composting is done). Landfilling is the most common way of municipal solid waste (MSW) disposal in Iran. Because of the land available for burials and also the simplicity of this method of waste management, was expected for at least two decades later, is still one of the main methods of waste management in Iran. Methane production in landfill typically begin 6 to 12 month after the waste placement then raise to a maximum shortly after landfill closure and finally gradually decline over the period of 30-50 years. The aim of MBT, reduce the volume of waste to landfills and reduce the land needed to raise and lower the volume of leachate and leachate control is the fact that 70% of the waste is more, the volume of leachate as lack of proper control and also because of the high level of groundwater in the northern part of the country can bring great environmental hazard. We use LandGem for estimation of gas production in landfill nad our case study is Rasht in north of Iran. The amount of methane generation in first year is 9.514283 (Mg/year) and it is the peak of gas generation.

Keywords: Solid waste Management, Landfill, LandGem, Rasht, Iran, Composting.

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19.

Authors: **Aleksandar Tsenov**

Paper Title: **Approaches for Improvement of IT Systems Management**

Abstract: TM Forum has developed the eTOM-ITIL Application Note [1] in order to give the IT society a direction to find an appropriate combination of different IT Management frameworks in order to improve the effectiveness of their management systems. In the past years the set of standards GB921 was developed. These standards cover a wide aria of applications that use a combined use of business and technical management frameworks. The aim of this work is to make a proposal for enhancement of the operability of the combined use of eTOM and ITIL for improvement of the services quality in the information systems. The paper presents three different ways for studying and evaluating of the relationships between these two frameworks.

Keywords: eTOM, ITIL, Management Frameworks, combined use.

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