Significance of Software Testing in Quality Assurance Using Software Development Life Cycle Models

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*Abstract*—The software industry played an important role in our life by automating our work like evacuating man work to machine work. Electronic devices works on different software totally designed for them, like mobile phone, handheld devices. Due to access of improper or built-in left problems during software development process, different bugs occurred. Some bugs occurred during running and some bugs are appeared during development. In current years research of software testing and quality is facing many challenges. A predictable guide of topmost difficulties is suggested here. The beginning stage of this paper is organized by a few imperative historical activities, on the other hand it comprises of two well-known objectives which scrutinize at last leads, still which stays as accessible as objectives. The courses from the accomplishments to the objectives are cleared by remarkable examination experiments, which are examined here alongside the progressing effort. Many technical and Non-technical areas are involved in the vast area of software testing. Our study focuses on the best class in testing strategies, and current procedures which are talking about upcoming header of this territory.

***Keywords*—*S.D.L.C, Software Quality Assurance, Software Process Models, Testing, Software Development process models, Software development life cycles.***

Virtual Classroom

An Easy and Low Cost Solution to E-learning System

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***Abstract***—**E-Learning and Virtual Classroom applications have gained a lot of popularity due to growing population, easy access and low cost solution. The study in this paper proposes an open source Virtual Classroom application that tends to mimic all the functionalities and features of real class room. Its interface designs are based on the online learning theories. It will provide the students and teachers a real time virtual platform, where they can learn, share and properly propagate their knowledge, views and ideas. This open source application allows the faculty members to conduct all the class activities as if they are in real classroom. On the other hand, students have the advantage of raising questions during the lecture with the help of a chat box and a white board. In order to assess the interfaces of this application, Microsoft Visual Studio 2012 has been used. Our application provides security and reliability to all its users. All the courses, students and faculty members are managed in a real time using this application. Administrator handles all these procedures, and has all the rights over the system including the users and databases.**

***Keywords—Virtual classroom, E-learning, Remote Learning, Distance learning, online learning.***

A Survey of Resource Allocation Techniques in Cloud Computing

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***Abstract***—**In the modern era size of data is increasing day by day and because of that access to the data from remote locations is difficult and because of the size of the data, organizations have to build large data centers which cause them more costly. Due to increase in the usage of cloud computing there is a demand for an efficient and effective resource allocation methods which can be applied for proper utilization of the resources and also check that the resource is not wastage. In the existing economy based models of cloud computing, allocating the resource efficiently is a challenging task. In this paper, we discuss the different priority based resource allocation methods and their comparison and how they are efficacious for the processing of information.**

***Keywords—Cloud Computing, Resource Allocation, Data Centers***

Cross-lingual Plagiarism Detection using Bilingual Dictionary

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***Abstract*—Plagiarism is the approach in which another person’s work is copied by someone else and used it for own benefit.** **It is considered as the reuse of text without clearly showing the original source. Recently the problem has been increased exponentially due to the large number of information is freely available on the World Wide Web in multiple languages. In this Project, the aim is to develop a Cross -Language Plagiarism Detection method using Bi-lingual dictionary. Cross Language, Conceptual Thesaurus based Similarity (CL-CTS) along with Cross Language Character N-Games (CL-CNG) method implemented for English, Urdu cross language plagiarism detection. The bi-lingual dictionary developed using automatic or semi-automatic, means each unit in the lexicon will have words with Urdu translation and its respective Part-Of-Speech (POS) tags. To analyze and evaluate the variations of the corpus with stop words and without stop words, Binary classification and ternary classification along with Machine Learning (ML) algorithms are performed. But highest results have been shown by Recall under binary classification.**

***Keywords*—*CL-CTS, POS, Plagiarism, Bi-lingual***

Control the Railways System by an Optical Wireless Network Architecture

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***Abstract***—**In this paper, all-optical wireless sensor network architecture built on the “visible light communication (VLC) and the free space optics (FSO)” technology, which targets monitoring and controlling the railways' health state to confirm the security of the train’s traffic. We represent the design a technique for detects rail vibration using light-based sensor nodes. Detection includes an estimation of the mean vibration amplitude and the mean vibration frequency of the rail vibration during the passage of a train. In the designed optical wireless sensor network installed at the rail foot. In case of Emergency the wireless sensor sent the message to the moment sensor and the trains stopped. Free space optics (FSO) communication is used for the connectivity between access that obtained info from the optical sensors and transmit critical data to the evaluating place.**

***Keywords— Rails Health Monitoring and Controlling, Vibration, VLC, FSO, Optical Sensing.***

Addressing Cloud Computing Security Issues

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***Abstract***—**The current development of distributed computing has definitely adjusted everybody's view of foundation structures, programming conveyance and improvement models. Anticipating as a transformative advance, after the change from centralized computer PCs to customer/server arrangement models, distributed computing includes components from network registering, utility processing and autonomic figuring, into a creative arrangement design. This quick progress towards the mists, has fuelled worries on a basic issue for the achievement of data frameworks, correspondence and data security. From a security point of view, various unchartered dangers and difficulties have been presented from this movement to the mists, breaking down a great part of the viability of conventional insurance components. Accordingly the point of this paper is twofold; initially to assess cloud security by recognizing extraordinary security necessities and besides to endeavor to exhibit a feasible arrangement that takes out these potential dangers. This paper proposes presenting a Trusted Third Party, entrusted with guaranteeing particular security attributes inside a cloud situation. The proposed arrangement calls upon cryptography, particularly Open Key Infrastructure working together with SSO and LDAP, to guarantee the confirmation, respectability also, classification of included information and interchanges. The arrangement, shows an even level of benefit, accessible to every single ensnared substance that understands a security work, inside which basic trust is kept up.**

***Keywords—Distributed computing security, Put stock in Third Party, Open key foundation, Data and correspondence security, Trust***

Voting System using Android Operating System

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**Abstract*—*In the normal ballot process, voting condition is troublesome in light of dislike of voters to go for voting to polling stations coming from far places, stay in long queues and sit tight drawn out for their turn. A couple of individuals settle on wrong decision which cause star choice issues. This customary strategy for voting can be switched to a more progressive and beneficial approach entitle Mobile-Voting system. We propose wonderful, essential and organized way to deal with vote, shedding the insufficiencies of regular approach. By using the customer id and mystery word against one CNIC, one voter can settle on one decision. If one person has the right to vote then a voting structure is displayed to him and approval is finished by using One Time Password (OTP) rule, thumb impression and face affirmation. Advancement of technology can be used to provide benefit to the people who vote but face difficulties during this process. To give permission of utilization of this right, all over the world where the voting through mobile is conducting have some common steps like voter verification and confirmation, counting and checking of votes, announcement of result. In the proposed system each voter is affirmed by the CNIC, OTP, thumb impression and face affirmation. Each vote caste against a candidate is placed in the database for the individual dispute. At end of the ballot casting system the counter checks the total ballot caste against each candidate and makes a short report of it and give it to the admin. Admin have access to share these results with everyone who have the ballot casting application.**

***Keywords—voting system, android***

Sensitive Case Blind Stick & Obstacle Detector

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***Abstract—*Blind community consists of a large group of people in our society. Losing their eyesight has caused inconvenience for them in performing daily tasks. Hence, smart cane had been developed in order to increase the life quality of a blind person. The purpose of this project is to design a sensitive case stick with automatic sensors and indication positioning system for the blind community. This embedded system mainly has two parts, mobility and tracking system. For mobility system, it is equipped with ultrasonic sensor, HCSR04, vibrating motor and buzzer. Ultrasonic sensor will send the trigger pulse to detect obstacles. When an obstacle is detected, signals will be sent to vibrating motor and buzzer to activate them. The vibrating motor will vibrate and buzzer will produce alarming sound with different strengths according to the position of the obstacle. For tracking, neo U-blox 6M global positioning system is used to calculate real time coordinates. The coordinates will be sent to Arduino UNO through Processing and Arduino will send these coordinates to android app using SIM900A GSM/GPRS V4 module. The microcontroller used in this embedded system is Arduino UNO.**

***Keywords— Arduino Uno, Buzzer, Ultrasonic sensors, Vibratory motor.***

Technical and Vocational Education Analytics using Punjab TEVTA Students’ Data

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***Abstract*—The development of informative workforce that is skilled in a specific profession is considered as the most recommended and desirable feature of any advanced state. Technical Education & Vocational Trainings provide golden opportunity of growth regarding the output of individuals and prosperity of employers. Subsequently it is the dire need of developing countries to invest in public vocational education and training sector (VET) for the progression of skillful societies. Process of manual predictions and analysis on the basis of students’ data to make decisions that will improve the overall teaching and learning is very difficult and tiring. Data mining is exceptionally helpful when we are talking about education data analysis and prediction. Data mining techniques are being used successfully in different areas especially in student educational and learning analytics called as Educational Data Mining (EDM). In this work, TEVTA students’ data is shaped as a ready-to-mine data set and then various data mining techniques are applied to derive interesting patterns that can potentially derive important decisions for improvement of learning process, enhancement of teaching method and overall development of whole system of technical education and vocational trainings. Besides presenting interesting analytics of TEVTA data, we develop classification problems to predict status of students after completing TEVTA courses. This classification can also help in evaluating success of TEVTA programs. This work can help in analyzing and predicting the aspects affecting students’ as well as institutes’ performance from different dimensions.**

Keywords—Educational Data Mining, Technical Education and Vocational Training, TEVTA, Classification

Evaluation and Selection of Cross-Platform Mobile Development Framework on One’s Expertise

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**Abstract**—Every year smartphones are increasing by billions and what makes them so popular, are the apps that they are providing. Developers are trying their best to reach the maximum number of users, but the development of an app is not an easy task. To develop the app for each mobile platform developer needs to have expertise on multiple programming languages. This approach consumes more time, money and effort. This paper will review the well-known cross platform mobile development frameworks and will provide a solution that will help in the selection of the framework to develop an application that can run on multiple mobile platforms. Mobile technology is still evolving so there is a big room for the improvement and the doors for the open research areas are wide open.

Keywords— cross-platform mobile development, native application, hybrid application, web apps.

Survey: Cache only Memory

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***Abstract—*The cache memory, called the CPU memory, is the Random access memory (RAM) that the computer can access faster to just access to the RAM. Cache memory is usually connected directly to the CPU. The use of the cache memory is to keep track of the program that is frequently used in the software while operating the task. To get quick access to these instructions is rapidly increasing in the software program. In this paper, Shared memory give the easy method to compose the parallel programming, The problem need to be address in the COMA architecture is the Utilize Locality, Increase Locality, and Balance loads, Hierarchical COMA, Flat COMA, Simple COMA and Slotted Ring COMA that are compatible to approaches SDAARC, Hybrid scheduling approach Compiler technology Runtime system and System on a chip.**

***Keywords—Cache memory, parallel programming, Utilize Locality, Increase Locality and Balance loads.***

Review Paper on Fault Tolerant Scheduling in Multicore System

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***Abstract*—In this paper it was discussed about various fault tolerant task scheduling Algorithm for multicore system based on hardware and software. Blend of triple module redundancy and double module redundancy considering Agricultural vulnerability factor other than EDF and LLF scheduling algorithms was used to create hardware based algorithm. Most of the real time systems used shared memory as dominant part. Low overhead software based fault tolerance approach could be implemented at user space level so that it did not require any changes at application level .Redundant multithread processes were used which could detect soft recover from the errors and could recover from them giving low overhead, fast error mechanism recovery and detection. The overhead incurred by this method ranged from 0 to 8% for selected benchmarks. Another system used for scheduling approach in real time systems was hybrid scheduling. Dynamic fault tolerating scheduling gave high feasibility where task critically was used to select the fault recovery method type in order to tolerate maximum no. of faults.**

***Keywords—Fault tolerant, dynamic scheduling, multicore processor, Earliest deadline first, Task graph, Check pointing.***

Algorithms for Data Cleaning in Knowledge Bases

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***Abstract*— Data cleaning is an action which includes a process of correcting and identifying the inconsistencies and errors in data warehouse. Different terms are uses in these papers like data cleaning also called data scrubbing. Using data scrubbing to get high quality data and this is one the data ETL (extraction transformation and loading tools). Now a day there is a need of authentic information for better decision-making. So we conduct a review paper in which six papers are reviewed related to data cleaning. Relating papers discussed different algorithms, methods, problems, their solutions and approaches etc. Each paper has their own methods to solve a problem in efficient way, but all the paper have common problem of data cleaning and inconsistencies. In these papers data inconsistencies, identification of the errors, conflicting, duplicates records etc problems are discussed in detail and also provided the solutions. These algorithms increase the quality of data. At ETL process stage, there are almost thirty five different sources and causes of poor quality constraints.**

*Keywords— Data inconsistencies, Extract-Transform-Load, Data Scrubbing, Data Quality etc.*

Ant Colony Optimization Algorithm for Traffic Control System

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***Abstract*—** **Populations within cities around the world increase, the vehicles present on the road of these cities also increases, result in slow moving, heaving traffic. In fact, it has been shown that traffic jams form within a road network when vehicles become too high, even if there are no incidents or blocks. One method of improving the traffic flow within cities to build more roads or to increase the size of the road structure e.g. increasing the number of lanes on a busy road. These strategies, however, have a high economical penalty and also consume a large amount of the limited space available within an urban setting. Second method of increasing the efficiency of a traffic network is to improve the ability of traffic control devices to efficiently control the traffic flows within the network. One of the principal of this type of optimization is the traffic signals, which control opposing traffic flows at point within the network. Different algorithms are presented in many research papers to improve the traffic network. Here we discuss and compare the performance of two algorithms Ant Colony Optimization Algorithm and Genetic Algorithm in detail through case study. Comparative study of both algorithms, ninety five percent Ant Colony Optimization algorithm performance is much better than Genetic algorithm, because Ant Colony Optimization algorithm solves the traffic network problems more efficiently and effectively.**

Keywords— Ant Colony Optimization, Genetic algorithm, Traffic Signals.

A New Approach To Remove Limit Cycle In Hybrid Multi-Stage Noise Shaping-Error Feedback Sigma-Delta Modulator

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*Abstract*—The output bit stream of a sigma-delta modulator experiences a bit repetition when the constant noise superimposes on its input over a short period of time. This leads to an issue called limit cycle. Limit cycle affects the stability and performance of sigma-delta modulator by degrading its spurious-free dynamic range. Dithering was widely used to remove this issue in the past. In Hybrid multi-stage noise shaping-error feedback sigma-delta modulator, only dithering is insufficient to eliminate limit cycles. This work proposes a new method which is successive bits comparison and reduction to detect and disturb the limit cycles. In this approach, current bit is subtracted from the previous bit. If a subtraction results in a zero value then it indicates the presence of limit cycles. After that those bits, which are the replicas of previous bits, are reduced. Dithering is applied at the output of SDM to maintain its dynamic range. Power spectral density simulation in MATLAB/Simulink suggests that this presented technique effectively removes the limit cycles from the shaped noise. The graphs also represent that it improves the spurious-free dynamic range which approaches to 52.29db.

*Keywords—sigma-delta modulator (SDM), multi-stage noise shaping (MASH), over sampling ratio (OSR), error feedback modulator (EFM), limit cycle (LC).*

Under-Graduate Study Recommendations to Pakistani Students using Association Rule Mining

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***Abstract—*In this research work, we are aimed to provide recommendations regarding degree programs and institutes at under-graduate level to students who have successfully passed their intermediate. In order to recommend, we collected data via Google survey form regarding educational background, career choice and area of interest of individuals who are successfully done with their under-graduate studies for least. The collected data were then preprocessed and analyzed for knowledge discovery. Data mining technique named *Association Rule Mining* was applied on the data to find frequent patterns and strong association rules. These patterns and rules obtained from the data of successful graduates lead us to recommendations for new students regarding suitable under-graduate degree programs and educational institutes matching their background study stream, area of interest and career choice. We are hopeful that this contribution will be a huge step forward towards the betterment of educational environment as well as a source of proper guidance for Pakistani students who are done with their intermediate and now intend to take admission in an under-graduate program in a well-reputed university in Pakistan.**

Keywords—Data Mining, Educational Data Mining, Association Rule Mining, Recommender System

Efficient Prediction of Liver Disease using Selected Attributes

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***Abstract***—**Liver plays a vital role in the human body that performsseveral crucial life functions. A number of liver diseases exist and it is a challenging task to diagnose the liver disease at its early stage.** **In recent years, several data mining techniques have been used in medical field for prediction but there can be further improvements for quick and accurate diagnose of liver disease. In this paper, a variety of Classifiers have been experimented on Indian liver disease patients dataset which is publicly available on Kaggle. Attribute subset selection is performed to identify significant attributes and the resulting dataset is named as Selected Attributes Dataset (SAD). SAD provides more accuracy in less computation time using Random forest classification algorithm and improved system including these parameters i.e., the efficiency of the system can be increased, early decision making, less time and space required. This research work will provide help to predict liver disease with less amount of data, i.e., number of attributes.**

***Keywords—Data mining, liver disease prediction, classification techniques***

All about Quantum Computing: A Review

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***Abstract—* Quantum computing is such a technology that may have merit in dealing with problems presented. It can solve problems with large number of computation faster. It is a type of computation where unitary and measurement operations are executed. Quantum computing is a potential solution for building something that is smaller than atom. It offers a lot of promises in information processing. In this paper I will represent brief introduction to Quantum computing I will began with the basic of quantum computing, quantum computing models, quantum computing approaches and finally quantum computing programing and at the end conclusion.**

***Keywords-quantum computing, Qubits, Quantum Computation Model, Quantum Programming, Quantum Computing Techniques***

GPGPU Virtualization Techniques

***A Comparative Survey***

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*Abstract*— The Graphic Processing Units (GPU) are being adopted in many High Processing Computing (HPC) facilities because of their massively parallel and extraordinary computing power, which makes it possible to accelerate many general purpose implementations from different domains. A general-purpose GPU (GPGPU) is a GPU that performs computations that were traditionally handled by central processing unit (CPU) to accelerate applications along with handling traditional computations for graphics rendering. However, GPUs have some limitations, such as increased acquisition costs as well as larger space requirements, more powerful energy supplies, and their utilization is usually low for most workloads. That results in the need of GPU virtualization to maximize the use of an acquired GPU to share between the virtual machines for optimal use, to reduce power utilization and minimize the costs. This study comparatively reviews the recent GPU virtualization techniques including API remoting, para, full and hardware based virtualization, targeted for general-purpose accelerations.

Keywords— GPU, Virtualization, GPGPU

A Parellel Two Stage Classifier for Breast Cancer Prediction and Comparison with Various Ensemble Techniques

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Abstract**— Life is a blessing but some diseases snatch human life away before even they are being diagnosed. One such horrifying disease is cancer. Among cancer, the most leading and common type is breast cancer. The actual problem lies in the fact that it is very hard and time consuming for even the most experienced medical specialist to detect the disease with high accuracy but the machines and modern computer science techniques have increased the accuracy and reduced the amount of time taken to diagnose cancer. In the subject paper, a new parallel machine learning technique called the two-stage classifier for identifying breast cancer is presented and compared with various existing techniques in terms of accuracy and percentage error reduction. The proposed technique, turns out to be better not only in terms of parallelism but also in terms of the evaluated metrics and reduced the error percentage to almost 50% in one of the cases.**

Keywords*—Machine Learning, Breast Cancer, Neural Networks, SVM, Logistic Regression, KNN, Naïve Bayes, Decision Tree, MLP, Gradient Boosting Classifier, Random Forest, Wisconsin*

Extraction OF Hidden Knowledge from Flight Crash Dataset Using Data mining Approaches

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***Abstract***—**A data mining is basically extraction of hidden trends from large amount of data. This study finds the major factors that are involved in flight crashes using data mining algorithms K-mean and density based. Further, the text analysis (converting the unstructured data into structured form) and preprocessing techniques are applied on the dataset as well to extract the factors caused flight crashes. WEKA tool is used to apply the clustering algorithms. The time comparison is also done for both algorithms. The results of data mining will help organizations such as air transportation and other management teams to explore the accidents data recorded by the informative resources, and discover the reasons of flight crashes. It can be helpful to avoid these incidents in future.**

Keywords—Flight incidents, hidden patterns, clustering

Reconceptualizing Consumer Buying Behavior within the Context of Digital Innovation

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*Abstract*—A fair amount of research has been conducted on developing the models of consumer decision making process in retail and online website purchase situation. However, with the establishment of free to play online multiplayer games offering variety of in-game purchases (intangible products) such as paid cosmetic customization options for character models, weather, sound effects, environmental ambience and alike has rejuvenated the need for understanding consumer behavior in a virtualized marketplace. Keeping in view the assumptions of elaboration likelihood model, this paper presents a new model of consumer behavior within the context of digital innovation in a virtual environmental setting. Several customer orientations have been considered towards understanding the process of consumer purchase decision making in an online multiplayer game called Defense of the Ancients 2 (DOTA 2). The paper concludes by presenting several propositions associated with consumer purchase decisions within a virtual market setting.

Keywords— e-commerce, consumer behavior, digital innovation, virtual market

GLOSSOPHOBIA SIMULATOR : A Virtual Reality Therapy Approach for the Treatment of Glossophobia Patients

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*Abstract*—Speaking in public is the most common thing; anyone does in his daily life. But the fear of speaking in public is far more common than this. The most basic reason for this is anxiety. Anyone from our relatives, friends and colleagues can suffer from this kind of phobia. The solution to this phobia is Simulator approach. We call it here Glossphobia Simulator. We will be providing the stakeholder with a virtual reality therapy environment. The main focus will be to work on Virtual reality while providing Cognitive Behavior Therapy. Glossophobia is the most common phobia these days, It can happen anytime, anywhere. It can even occur in a meeting where the thought of interacting with new people may cause you to become fearful. You can lose your self-confident in glimpse of an eye. As an outcome Glossophobia may basket the persons in pain and decrease his further technical abilities and expert opinions. If left attention less, this can lead to loneliness, poor self-respect, feeling down times and getting distant from other things. There are designs able to help in managing and look after excellently with Glossophobia. This can happen with anyone in livelihood when going through face to face talks anywhere it might be possible. Sometimes it’s in your hands to overcome it but sometimes not, causing existence without self-belief or troubled feelings. Considering Glossophobia simulator we’ll be eligible to treat such kind of phobias under the shelter of cognitive psychology. Using VR headset the person will move in a virtual environment where it is more comfortable to say, talk and statement of part-owner his/her thoughts. Which will be more a powerful therapy provided to the patients and the stakeholders.

Keywords— Glossophobia, Simulator, virtual reality, Cognitive behavioral therapy, Public Speaking Anxiety.

Cryptosystems: Reasons for Failure in Banks

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**Abstract—Designers of cryptosystems are at an unhelped side as made a comparison to other engineers as they get no take-back because mostly cryptosystems are used by Banks, governments, military and the organizations to keep facts secret and keep safe (out of danger) against adjustment during electronic bit of business. They kept their mistakes secret. As an outcome of that same mistakes being made over and over again. Cryptographic systems can be open to attack to outside attacks nevertheless its wrong commonly used algorithm design by designers and also its putting into effect was not right. This come to a decision about that an example group, time of work is late in system safety. To in addition get at the details of the question under discussion, in this paper we have a discussion the cryptosystem coming short of one's hopes and feeblenesses of do trade with general public banking system which make up the supporters biggest use of cryptology**

Keywords— Cryptosystem, Cryptology, encryption.

Investigation of SDN Controller:Using Geni.net

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***Abstract*—An investigation of Software Defined Networking (SDN) Controller using Geni.net Experimental Portal simulates the underlying topology and observes the traffic between hosts. And get the performance parameter and further more analyze the data. A few examinations have been done in the point of contrasting SDN Controller. The work done in one of the primary giving a similar investigation of the SDN Controller thought about a set number of Controller (NOX-MT, signal and maestro concentrating just on the controller execution. Nonetheless, with time these controllers have been supplanted by different controllers like POX, Ryu, Floodlight and open sunlight. A propelled investigation of SDN OpenFlow Controllers was performed in. A relative investigation of the viability of the broadly utilized SDN controllers: NOX, POX, Beacon, Floodlight, MuL, Maestro and Ryu are finished. The creators utilized an instrument named hcprobe. They inferred that the tried controllers show some security vulnerabilities, confront troubles to manage normal workload and that Beacon is the most performing controller in view of the throughput test comes about. Because of the way that new controllers are produced, this examination must be reached out to think about these controllers and to consider more controller highlights. In two working modes are analyzed, proactive and responsive. The proactive mode has preferred execution over the receptive one because of the way that the guidelines are stacked to the switch toward the begin not as in the responsive mode where the standards are stacked to the switch each time the switch gets a parcel with no coordinating tenet in its stream table**

Keywords— SDN, Geni, Openflow, ONOS.

Proposed Enhancement of Punjab Police: Front Desk Project

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***Abstract*—Enhancement of Front Desk Project” is essentially evacuates the separation amongst police and open. In early days, police division kept up record physically. These practices were simple in past when populace was far less. It was turned out to be troublesome assignment to keep up such records physically. It was additionally tedious technique. To defeat this circumstance, front work area venture was presented in which information were kept up in advanced shape. We have proposed to develop a structure which gives an efficiently available flexible application which an online interface for the police department. The person would give the ID card number that identified on the application. This information will show on the web based portal of front desk officers. They will square the elements of the complainant and complete additional actions of the complaint. The front desk officer will post the progresses put onward in the protection into the record of the complainant through the entrance. From complainant site, he will be able to see the progress of his complain. Accordingly the full method would be done on the web portal, without much handbook mediation.**

Keywords— Android application, database, online, complaint, management, responds, complainant, automated, crime, FIR (First Information Report), NDRA (National Database and Registration Authority).

Comparative Analysis of Information Retrieval Models

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***Abstract*—** **Information Retrieval (IR) is the field which is the hot topic of the Software World regarding Search Engines, Email Searching and many more. In this system, the generated outputs are ranked according to their relevance. The IR uses data models that make a retrieval process easier when compared to the traditional IR database model. This paper analyze some important models like Boolean, vector space and probabilistic and evaluate the performance on the basis of basic parameters such as concepts, model representation, output, pros and cons and see which model excels in which field of application.**

Keywords— LSI (Latent Semantic Indexing), SVD (Singular Value Decomposition), BIM (Binary Interdependence Model),PRB (Probabilistic),DAG (Directed Acyclic Graph), IR (Information retrieval).

Safety Driving and Emotions Detection

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***Abstract*—This paper expresses methods for collecting and analyzing facial points of different persons to check their emotions. This is especially for the persons that are in stress position or in bad mood because due to this many accidents have occurred, so to determine the emotions of persons, their facial points are used which we extracted by our method and then these facial points are compared with the action points that have fixed values for different features of face. So with the help of this and by our proposed method that finds out the facial points of human face, we can find out in which expression the person is, and if the person is in the state that can be dangerous for him/her than we can alarm them using different techniques so that they and other people can be saved from different tragic incidents. So our basic focus is to find human facial points and for this we use video of different persons of few seconds and then some frames are extracted from this video to find out facial points.**

***Keywords***— ***Emotion detection, safety driving, human facial points.***

Analyzing Academic Performance of Instructor using Semantic Analysis and Data Mining Techniques

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***Abstract*—Semantic analysis is similarity of two documents. There is no perfect way to analyze the teacher’s performance, every student would rate the teacher according to their interest in teacher and the course. Also, there would be students who would be more interested in the course as compared to others so there review about the teacher would be a bit different. Intelligent students and the dull ones both would have different views about the teacher. It is difficult to compare between teachers only on the basis of their results, so this would help us to understand which instructor is the best one for our selected course. We have collected the data of 10000 students on an android application and apply our semantic Kernel to find similarity. Our Semantic Kernel can handle a pile of data which is at least 10,000 entries or more. It is not going to judge the teacher on the reviews from just a few students but from all the classes he/she is teaching the same subject at the given period of time. According to our survey which we have done to check the feasibility of this project, it might be more preferable to our university than their current teacher evaluation procedure. It could provide us better results as compared to those systems and even the outputs could be in our desired form.**

Keywords—Analyzing TeacherPerforamnce,Semanics,

Stock Price Prediction by using Machine learning Techniques

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*Abstract*—Stock investment has become an attractive activity for investors in Pakistan. Investor usually face an issue regarding an investment due to uncertain behavior of stock market. Therefore, provide an investor such type of system which help him in forecasting stock share is a major research problem. By using Artificial Neural Network(ANN) we can do forecasting but forecasting lack in rules clarity. So, to resolve this clarification issues Decision Tree(DT) is used. This paper mainly does forecasting by a combination ANN+DT to achieve maximum accuracy.

Keywords—Artificial Neural Network(ANN),Decision Tree(DT),Stock Price forecasting

Hierarchal based Energy Optimization of Hexagonal protocol using Clustering and Direct Communication in Wireless Sensor Networks (HEX-CD)

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***Abstract*—** **The emerging trends in WSN helped the integration of existing technologies to propose new and innovative applications for the betterment of human life. Remote health-monitoring, a bi-product of technology integration, assists to minimize human death-rate owing to continuous health monitoring using low-cost sensors. Sensor nodes are small and carry limited battery power. Therefore, sensor node’s resource constrained nature hinders resource-rigorous applications to fully exploiting their potential. In Proposed protocol HEX-CD network area distribute in hexagon, in our protocol HEX-CD improve a result thought Direct communication (DC) and multi hop communication (MHC) among the network nodes. HEX-CD debates on enabling technologies, architectures, and opportunities to propose resource efficient WSN architectures. It highlights the commonalities and variances in existing technologies to highlight their strengths and weaknesses. It also presents opportunities to further improve the WSN schemes through network stability, network life time, through put, packet drop.**

Keywords— Energy Consumption, Network Lifetime, WSN, Nodes Deployment

A Systematic and Integrated Review of Mobile-Based Technology to Push Active Lifestyles in Folks with Sort a Pair of Polygenic Disorder

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*Abstract*— this investigation was planned to try to Systematic and Integrated Review of Mobile-Based Technology to push Active Lifestyles in folks with sort a pair of polygenic disorder. The coordinated audit was light-emitting diode utilizing Associate in Nursing adjusted method system created by Whittemore and Knafl. The structure focused on five key stages: issue identifying proof, writing obtain, data assessment, data investigation, and introduction of the findings.11 what is more, the exploration articles recognized were ordered visible of the goal/capacity of the moveable primarily based innovation; this organized introduction of this confirmation was used to delineate specific holes. A total of 7662 articles were distinguished within the underlying pursuit of the net databases. Following the usage of the thought criteria to the titles, seventy two articles remained. Associate in nursing mixture of nine articles were distinguished as acceptable for survey. Table a pair of demonstrates a summary of the info separated from the articles. Of the nine articles, five is bothered used mobile phone or pill applications, one used a polygenic disorder individual computerized right (PDA), one used a mix of unremitting aldohexose screen and measuring instrument, one used a measuring device, and one used a website sent by a mobile phone. Restricted analysis has analyzed the possible, adequacy and viability of versatile primarily based innovation to advance dynamic ways in which of life and later on nice polygenic disorder administration in people with sort a pair of polygenic disorder. Future analysis need to examine the most effective, possible, and adequate versatile innovation techniques in advancing maintained dynamic ways in which of life in those with sort a pair of polygenic disorder

*Keywords—Acceptability, Effectiveness, Feasibility, mHealth, Technology, Diabetes.*

Web Security: XSS(Cross Site Scripting) Attacks

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| --- | --- | --- | --- |
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*Abstract*— now a day's attack on the web site increases-daily it becomes vital for numerous verticals within the country to be secured against the deadly attacks which can hamper the operations of the net traffic within the country and its verticals. XSS is actually dangerous its harshness is high, as a result of it may change the web site DOM (Document object modal) and will lead to stealing credentials of the administrator, in these cases the attacker will manage and compromise the entire application. In this research we will discuss about different methods of hacking and how an attacker attacks on the web. What are the things that lead an attacker to attack on the web, the vulnerabilities that exist in a web, how a hacker gets benefit if the user or client is uneducated. We mainly focus on the XSS cross-site-scripting, its types. At the end of this paper we will provide the methods or techniques to overcome these problems and to stop attack on the web. We provide a way how a programmer will learn hacker’s techniques of hacking and then implementing them.

Keywords— XSS,XSS Languages, Cross Site Scripting,Prevention Techniques

Modified Scheduling Algorithm for Big Data Manipulation

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***Abstract—*Now a days term big data is used everywhere such as in big industries, cloud computing, internet and many other platform uses this terminology. It is due the fact of emergence of data which is stored, processed and uploaded in exabyte or zettabyte on the daily basis or in other words the volume of data is increased and still increasing day by day. Another thing which is associated with big data now a days is speed and velocity which is used to process this data. Along with this enormous increase there is also a term which also define big data is that it present in different forms e.g. text, videos, audio etc. for the analytics purpose of this data Hadoop framework is developed. In Hadoop our focus is on the scheduling problems as scheduling process is one of the most important and critical phase in order to make our system more sophisticated. Many scheduling algorithms was designed to overcome the processing of jobs. Algorithms such as FIFO scheduler, Capacity scheduler, Fair scheduler, honest scheduler, and many other are designed by different companies are present. These job scheduling algorithms has many advantages, limitations and features over each other. This paper is basically a comparative analysis of these known scheduling algorithms.**

***Keywords—Big data, Job scheduling, Scheduling algorithm, Hadoop, Cloud computing, Resource allocation, Distributed environment***

A Comparative Analysis of Traditional and Cloud Data Warehouse

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***Abstract***—**In the age of emerging technologies, the amount of data is increasing very rapidly. With the passage of time, the methods of data handling are getting improved. Prediction analysis is quite a tough task, but it also yields interesting results. Different sectors like financial services, transportation, health and education are generating large amount of data. The emergence of web 2.0 (social web) made it possible for users and researchers to analyze and predict huge amount of data. The domain of Business Intelligence is core technology for users who want to extract useful information for decision making regarding their businesses. Data warehouse provides an insight into the business processes using the historical data. However, traditional data warehouse may not be suitable for the data analysis needs because of the evolving requirement of industry. It cannot be scaled up or down. Moreover, it cannot handle the increasing number of users. A new kind of data warehouse with design and implementation aspects has been emerged, called as cloud data warehouse. The cloud data warehouse model has evolved with the passage of time, which affects the application and business domains as well. The cloud data warehouse has evolved to control the large scale data. It can be scaled up or down at any time and also it has no limitation on increasing number of users. In this review paper, we have compared traditional and cloud data warehouse. We can conclude that the ultimate future of data warehouse is cloud data warehouse.**

*Keywords— Data Warehouse (DWH), Traditional Data Warehouse (TDWH), Cloud Data Warehouse (CDWH), Online Analytical Processing (OLAP)*

An Effective Information Architecture is Important for the Development of Web-Based Systems

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***Abstract*—Information is the communication of knowledge. It is the most important resource for any kind of organization and helps senior managers in decision making. Users can easily interact with the digital information through many devices. The lack of information generates a loss of control over the information further resulting in newer challenges in the effective performance of managerial functions. For the purpose of organizing information over shared environments to support find-ability and usability. In this paper, we discuss the understanding of effective Information for the purpose of getting correct information. This information helps in the development of an effective architecture. When the information lost it affects the performance of organizational functions.**

Keywords- Information Architecture, Effective Information Architecture, Information Access, Information Architecture Framework

Brain Tumor Detection by using Computer Vision based on Multi level Image Filtering

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***Abstract* —MRI imaging assumes an essential part in brain tumor for conclusion, investigation and treatment arranging. Brain tumor identification is the procedure of the situating of tumor and size. It helps the specialist for decide the past strides of mind tumor.in this paper we utilize distinctive methods to obviously distinguish the tumor region from MRI picture. In our approach utilize two level of separating systems these altered half and half middle channel and middle filtering.as the clamor is evacuated we upgrade the picture quality by enhancing dim level of every pixel utilizing KNN mean calculation. The improved picture used to discover the limits of conceivable mind tumor with in pictures by identifying discontinuities in the shine. The picture division into conceivable tumor and non-tumor zones. And afterward sharp the both conceivable districts unmistakably envisioned the two regions in brain picture.**

**Keywords — Brain tumor, MRI-image, median filter, morphological operator, SVM function, K-mean filtering**

Achieving Data Security and Privacy Issues with Cloud Computing Multilayer Adoption Framework

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***Abstract*—- In Cloud computing daily mostly terabyte of data is upload so providing the security to such a huge data is not too much easier. A recent survey on cloud computing conclude that user have main concern on data security and feel threat while saving their data on cloud as user give more importance and concern to data security so we provide and develop such types of clouds that secure user data and focus on its privacy as well . This paper have discuss the cloud computing adoption framework (CCAF) which have such type of security that secure user data on the cloud computing. CCAF is a multilayered framework which have ability to destroy viruses and hacker attack. We experiment on CCAF we fire almost 10,000 of viruses, Trojan and worm then CCAF block almost 98888 of viruses and most of the remaining will be quarantined or isolated. It block the viruses within a second and disinfected critical threats and secure data 100%. CCAF Is multi framework having three layers 1) firewall and access control 2) identity management and intrusion prevention and 3) converge encryption. Our multilayer framework is better than the single layer framework because single layer framework only block 7,223 viruses.**

***Keywords — Cloud computing,******Data Security and Privacy Issues***

Enhancing Awareness and Usability of

BIOS Password

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***Abstract*—-Personal data can be hacked even a user is not connected to network. It is possible when someone accesses the PC directly and break the security. Basically there are two types of security for the PC 1. BIOS password 2.Windows password. BIOS stand for Basic Input Output System; it’s more important component of computer system that holds instructions required by computer when it starts. BIOS load the operating system either in hard disk or in other removable media like USB, CD or Floppy Disk etc. BIOS Password is an extra security layer for Desktop and laptop computers. It is used to prevent the computer to change the BIOS setting or secure the PC from booting without password. But if the user forgets the BIOS password or change it unintentionally then mostly it is unrecoverable, such PC are sent back to the IT department of manufacture who resets the BIOS or sometimes replace the ROM of the Motherboard that’s why users afraid to use BIOS password. BIOS password is very difficult and sometime impossible for initial hacker to crack it. Windows password only secures the windows from opening, windows password does not prevent the PC from booting without entering password and initial hacker can hack the windows easily in other words BIOS password is more secure than windows password but mostly people are unaware of BIOS password and use only windows password and thinking that their PC is protected. This paper explain that windows password is not enough for PC protection, it would not provide complete protection to data, This article is an attempt to create awareness of BIOS password usability/ awareness and suggests the manufacture to make it more simple for use.**

***Keywords—BIOS Security, BIOS Password, More Useable BIOS Password, PC Protection, Trusting computing, BIOS Integrity.***

A Review on the Role of Smart Board Technology in Education

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*Abstract*—From last 20 years, Information Technology has brought a great revolution in the education system. Information technology provides additional opportunities to the students for attractive learning. As a result technology usage has been widely increased in educational institutions. From the last few years class room learning process has been significantly changed. Today Smart Board (SB) is being used as a new educational tool for the students and teachers. This technology attempts to provide the delivery of learning from teacher to student in a more flexible and comfortable way. SB technology is one of such broad technology that has been evolved to rapidly deliver lectures in class rooms. The main focus of this research is to identify the use of SB technology in today’s educational institutes. The study of SB identifies its effect on student’s attitudes and their achievement plus teacher’s acknowledgment, complications and interpretation on the use of SB. This research also articulates the issues relevant to SB performance in schools as well as its contribution towards the development of students learning in the classroom.

*Keywords—Technology, SB, Teaching process, learning process.*

Automated Mitosis Detection for Cancer

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*Abstract*—Cancer is the second-most driving reason for deaths in the U.S. It has turned into a noteworthy wellbeing issue on the planet in the course of recent years. Cancer is considered by irregular growth of cells and there are over hundred types of cancers. Computer aided diagnosis (CAD) frameworks can assume a key part in the early identification of Cancer and can diminish the passing rate among patients with Cancer. *Context:* Nottingham reviewing framework is the normal for Cancer evaluating. It joins 3 criteria, to be specific tubule arrangement nuclear atypia and mitosis check. Manual recognition and numbering of mitosis is monotonous and subject to significant between inter and intra reader varieties. The primary objective of this paper is the advancement of a system ready to give identification of mitosis on various sorts of scanners and multi-spectral magnifying lens. *Aim:* To explore the numerous texture and intensity features for mitosis recognition via machine learning techniques. *Materials and Methods:* We used histological pictures dataset that is consist of RGB histological images which is accommodated by an International Conference for Pattern Recognition (ICPR) 2012. We propose a methodology that helps pathologists in mitosis recognition and tallying. Different channels of color space have been computed from input RGB images and various feature extraction algorithm were applied to extract different features from different channels. Intensity features, run‑length features, and HC features were extracted and used in the classification of mitosis. At last, a grouping is made to place the candidate patch either in the mitosis or non-mitosis class. Waikato Environment for Knowledge Analysis (Weka, holds a collection of visualization tools and algorithms for data analysis and analytical modeling) is used for classification our data. *Results:* We applied various classifier algorithm like Random Forest, SGD, Logistic and SVM etc. The system best score: recall 55%, precision 32% and F‑measure 41% which is calculated by Random Forest classifier. *Conclusions:* Various Features have been computed and different classifier algorithm have been used for the detection of mitosis. In future work, we intend to improve mitosis detection and classification rate by computing different features such as Local Binary Pattern that can better discriminate between mitosis and non-mitosis regions.

Keywords—CAD, Nottingham, histological images, Intensity features, run‑length features, and HC features, Random Forest, SGD, Logistic, SVM

Face and Eye Recognition: By Using Support Vector Machine Algorithm

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Abstract—Face and eye detection and recognition is one of an important topics in machine learning. Well, scientists have used different techniques and methods for object recognition process. We are trying to use look based or feature based procedures to attained most results and we algorithms and their features with and grouping their results and discover most accurate results(like we apply different channels “RGB” or HSV, thrush hold, binary image on test image). Then we abstract the result from these approaches and apply algorithm like SVM, Random technique etc.

Keywords—Face recognition, eye recognition, machine learning, SVM

Prediction of Mobile Application Success

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*Abstract*—There are millions of application on Google play store and over fifty thousand of publisher. In such a huge number of app record the probability of new app that will be developed or come in play store will be very less than a app can be successful or not .And that thing create a big problem for a developer/employer to make an app and show it publically in play store without knowing that his/her app will be a successful app or not .Due to this problem we try to overcome this issue and make a prediction system which tells a developer/employer about the app based on the app description that his/her app will be how much successful based on the previous record of the application. In this project we use natural language processing to process with description and then we apply stemming and remove stop words and naive byes algorithm which predict us the average rating of the mobile application.

*Keywords—component, Natural language processing, Description of app, naive byes*

AHP-SWOT Analysis framework AHP-SWOT Analysis framework proposed for Cricket Players’ Performance Analysis

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***Abstract*— Cricket is one of the most popular game in the world and competition is increasing among the teams. Every cricket board is putting its resources to search the best players and train them to overcome their opponents. For this, they use different tools and techniques to judge the abilities and weakness of the players. We are presenting a tool known as SWOT analysis through Analytic Hierarchy Process (AHP) that can help players to grow stronger and find potential opportunities. SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis is a widely used technique for analyzing external and internal components and find out an efficient method to support for the decisions. The proposed technique is acquired by performing Analytic Hierarchy Process (AHP). In conclusion, the SWOT and AHP integration may provide great assistance to cricket board in determining the best players that play an important role in winning the cricket match.**

*Keywords—SWOT Analysis, AHP, Performance Analysis, Cricket Player*

Automation of Hotel Ordering System Using NFC Tags with help of NFC enabled smartphones.

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*Abstract*— Near Field Communication (NFC) as a promising short range wireless communication technology facilitates mobile phone usage of billions of people throughout the world that offers diverse services ranging from payment and loyalty applications to access keys for offices and houses. Eventually NFC technology integrates all such services into one single mobile phone. NFC technology has emerged lately, and consequently not much academic source is available yet. On the contrary, due to its promising business case options, there will be an increasing amount of work to be studied in the very close future. The project consists of two modules one is the android application and other is the website. The main functionality of both the modules is the same that the automation of the hotel food ordering system. The website also has the functionality of home delivery system, a user can select either home or hotel option. The use of NFC tags is being introduced in the project as the links of application and website will be stored in the tag, the customer /user will just tap his/her smartphone with the desired NFC tag and the particular website or application will open and he/she can continue to order. The bill generation functionality is also enabled in both the modules so that customer can view his/her bill and can increase or decrease quantity according to his desire.

Keywords—NFC, Nearest Field Communication

Security and Privacy Risk of Health Care in Cloud Computing

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***Abstract—*Medical field has emerged a lot in the past few decades, resulting a massive revolution in the health care industry. Heath care is an important concern in today’s increasing population of the world. Data record of patients can be accessible from anywhere / any part of the world, from medical units to doctors to pharmaceutical industry to health insurance companies when the records are put on cloud servers. Cloud computing is emerging as a very useful and hopeful model for computing. To manage software and hardware resources with cost decrease, the computing organizations are transferred to third party service providers. There is a popularity of health care cloud at a very massive platform but with that different security and privacy issues are faced too. Health care is facing a big flood of data and record which is never seen before, this data helps as key to enlighten health issues, providing new ideas and lowering the server costs. The healthcare industry is incapable of taking full benefit of the provided resources because of the security and privacy issues which are so irresistible. This paper will identify the security and privacy issues faced by health care in cloud computing as well as discuss some available strategies to improve privacy and security.**

*Keyword— security, privacy, health care, cloud computing*

Gender Recognition System by Speech Using Support Vector Machine

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*Abstract*— Gender determination of a person by speech as male or female seems initially be an easy task. But now a day’s importance of this task is much increased. Sometimes even cannot detect the difference between voice of male and female due to non-visual state. Design a computer program or algorithm to detect the voice of male and female is a bit difficult. In this paper, we outline the design of machine learning algorithm to program acoustic analysis of human voices or speech for gender recognition. We have collected 3,168 recoded sample of male and female to train our model. The data sample is prepared by implement acoustic analysis and then applied to ML algorithm to learn gender voices. The algorithm we use to train our model is Support Vector machine with analysis of different kernel and compare their results.

*Keywords—Gender determination, Support vector machine.*

Paradigms of Scalable Distributive Systems

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*Abstract*—Scaling is considered as one of the many important factors when designing a distributed system and can be done in three aspects i.e. numerical, geographical and administrative. Numerical scaling can be defined as the amount of users for the distributed systems, objects and the services it provides. Geographical aspect means the distance over which the system is scattered whereas the administrative aspect consists of the number of organization which hold rights over pieces of system. This review paper will briefly highlight some of the important methods of scaling when designing a distributed system and a comparative study of the functions that the limit the properties of scalability in these systems along with set of questions which are to be asked when designing a scalable distributed system

Keywords— distributive systems, scalable distributive systems

Survey on Personalization impact on Social Media

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***Abstract*—Personalization is the solution to one of the most challenging thing that is to overcome the problem of excessive overload of data. Social Media has become a part of our daily routine. There are billions of users using social media and producing large amount of data every single sec which makes social media a great source of data. In this paper we will be discussing advantages and disadvantages of Personalizing Social media. We will inform you that how Personalization can be used in Social media to come up with new and big data for getting big insights which will benefit many interesting businesses around the globe. We will see how useful will be social media with personalization.**

Keywords—Personalization, Information Retrieval, Social media, Privacy, Big Data, Businesses, Government, Authorities, Institutions, Personalized Recommendation, Data Mining and Machine learning Algorithms.

Software Project Management Observes: Fiasco V/S Victory

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*Abstract*—A study on successful and un-successful about 210 large software (development) projects from around the world between February 1995 and December 2017 has been presented in this review paper. All these projects involved on mass level that completed on time with their scheduled expense, and time frame estimates in development of those are getting late as defined, much expensive as decide, or were get delayed or close without its completion, major seven hurdles were noted: un sufficient project planning, un sufficient cost estimating, un sufficient measurements, un sufficient milestone tracking, un sufficient change control, and un sufficient -quality control, Poor Coronation and communication. After detail study on past reviews on these hurdles in project management, in this review paper we have presented a short overview of success and failure reasons/causes/possibilities of all those seven factor/ hurdles are noted. Maybe the clearest aspect of these major problems is linked with project management rather than technical resource. Two occupied ideas combine which are no proper excellence regulator are the huge funder for the rates, and late time and unfair plan organization have number of prospective reason of insufficient excellence actions.

*Keywords*—*SPM, Fiasco, victory*

RECOVERY METHODS IN DISTRIBUTED SYSTEM

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***Abstract—*This paper is that there are number of available recovery methods in distribution system. Every method has some pros and cons and some trade-offs. Failure Recovery in Distributed Systems used many techniques to increase the reliability and high availability. In this Technique there are few points Transitory Route Recovery Scheme is experiences the information which is lost while transmitting in nodes. This paper has proposed an agent and capable recuperation plot for reestablishing availability and controlling the scope corruption that the disappointment of genuine nodes may cause in WSNs. Distributed systems and these applications are worked out by universal level and enable many applications like transaction processing, client-server, World Wide Web and scientific applications**

***Keywords—recovery methods, distributive systems***

Supervised and Unsupervised knowledge extraction from Suicide Bombing attacks data of Pakistan.

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*Abstract*— Suicide bomb attack is an intense blast done by a person called terrorist whose intention is to kill massive people and break out immense destruction by exploding him/herself. Pakistan is considered in one of those countries where terrorism activities are somehow common. Terrorist activity in the different regions of Pakistan depends and varies according to geopolitical situation. This paper contributes towards counterterrorism in Pakistan by extracting hidden patterns from suicidal bombing attack data. In order to analyze the psychology of suicidal bombers and find a correlation between suicide attacks and prediction of next possible terrorist activities, data mining techniques named clustering and classification are applied on processed data set. K-Means algorithm is applied to perform clustering. For classification; NNGE, Naïve Byes and J48 algorithm is applied on selected attributes. The results yield from classification showed high accuracy against all three algorithms applied. The accuracy obtained for Holiday Type selected attribute (94.15%, 90.72%, and 94.5%) and Target Sect (85.28%, 81.85%, and 88.5%).

***Keywords—suicide bomb attack, counter terrorism, geopolitical situation, pattern extraction, K-Means,*** ***NNGE, Naïve Byes, J48***

A Survey: Quantum Computing

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***Abstract—*Quantum Computer can improve statistical solutions by resolving some complicated problems that are even more effective and even more controlling right now. This article presents important databases and describes that is required to build a standard system. After all, it discusses various engineering problems when building a portable computer, electronic engineering, and micro architecture to implement important methods and correct the error. We determine by consulting some editors and programming programs related to algorithms.**

***Keyword—Quantum Computer and QuBit***

A Survey: Make a system high performance and fault tolerance in communication on network on chip

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*Abstract*—Network on chip is a communication multiprocessor system on a chip, between (IP) cores in a System on a Chip (SoC). As the number of subsystem and cores on the chip increase, then complexity also increased as well and there are chances of fault occurrence increased rapidly and fought on all levels. This problem is expressed regarding communication problem between network to network on chips that has forces a fault tolerance network on chip. This paper includes the latest techniques, methods and models followed by different researches .They introduced their methods and worked on them with known architecture based techniques. They proposed different techniques and their possible solutions. In this survey we had gone through different papers of different researchers they had proposed the different techniques according to our observation To make our systems a high performance fault tolerance in communication on network on chip.

*Keywords— System on a Chip, network on chip and fault tolerance.*

A Survey Paper of Multivalued Memories

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*Abstract—*Techniques for storing multiple bits of information in only one memory location is examined. Any of several states can stored in the ROM by adjusting the voltage or threshold size of a particular memory device. In dynamic RAM, this can be it is obtained by varying the charge stored in the capacitor of the cell. The Peripheral circuits needed to distinguish between states stored in memory areas are discussed.

*Keywords—Multivalued logic, Random Access Memory, Read Only Memory.*

A Survey on Grid vs. Cluster Computing

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*Abstract*—Cluster computing and grid computing are becoming increasingly popular. With the latest technology development and research innovation, grid computing and cluster computing are being transferred to conventional computing. Technology, such as grid computing and cluster computing, aims to not only add resources, but also allow access to a large amount of computing power by providing a single view of the system. Many computer resources, such as hardware and software, are collected in the resource group and the resource group can be evaluated by the user through the web browser or a lightweight or mobile desktop device over the Internet. It is not a completely new concept. It is related to the paradigm of grid computing and cluster computing. These computing technologies, grids and clusters, are actually contributing to system compatibility, time execution, performance and fault tolerance. This paper includes the introduction, characteristics, advantages and disadvantages of grid and cluster computing. In addition, the purpose of this document is to show the importance and comparison of computer technology that improves the performance of the system.

***Keywords—Cluster computing, grid computing***

A Survey: GPGPU Processing in Medical Image Analysis using CUDA Architecture and Comparison between different Architectures

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***Abstract—*A Graphics Processing Unit (GPU) is a dedicated electrical processing unit, which was designed for analyzing and processing of the images in a buffer with high speed. GPU is the future of computation. It has the excellent computational capability in great parallel computing. General-Purpose Graphics Processing Unit (GPGPU) uses GPU which normally interpret computations only for computer graphics which are handled by the CPU. Medical imaging is playing a vital role in scientific research for the disease diagnostics and treatment planning. A GPU can perform complex parallel tasks in medical sciences. Medical technology is growing day by day & gaining a major development, so the time also increases for computation due to the diverse nature of images like 3D, 4D etc. Latest diagnostic techniques for diseases like MRI & CT scan images are growing complexity of algorithms. Graphics processing unit (GPU) addresses these problems and gives the solutions for using their features such as, high computation throughput, high memory bandwidth etc. Compute Unified Device Architecture (CUDA), introduced by NVIDIA is a famous GPU Programming model for parallel computing. This model briefly discusses the need of GPGPU CUDA computing in the medical image analysis. This survey will wrap up the few optimization techniques for the analysis of medical images on GPU. The existing and related works of medical image analysis will be investigated. This study will associate the significance of GPU computing in the domain of medical industry.**

***Keywords— GPU, CPU, GPGPU, Grid, CUDA, thread, OpenCL, Data Parallelism, ALU***

Comparative Study Of FPGA Performance For LDPC Decoding

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***Abstract*—Field Programmable Gate Arrays (FPGA) are being widely used as high performance processing units due to their speedy processing, parallelism and programmable flexibility for customized tasks. Due to the high computational requirements of Low Density Parity Check (LDPC) codes, FPGAs are being used for LDPC decoders which are the strong solution for forward error correction in communication domain. By exploiting high computational power capabilities FPGA based LDPC decoders are now being designed as an efficient solution with high performance. This paper presents comparative study regarding use of FPGAs for LDPC decoders. Comparative analysis of FPGA based-LDPC is presented with discussion of processing throughput, flexibility, BER ratio, efficiency in terms of bandwidth and I/O performances.**

***Keywords —FPGA, LDPC, DECODERS***

Improving Programming skills: Effort on school Level

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***Abstract*—Strong Programming skills are need off time now a days. Nations having strong programming skills are leading the world. Developing country likes Pakistan Lack in this practice and there are very few resources in schools to integrate new technologies and methods that are introduced worldwide. Programming skills is a big issue in computer sciences field and have very few numbers of skilled programmers. This paper includes how introducing programming on school level (grade 1-3) will help students to increase programming skills and reasons behind poor programming skills .Secondly, it purpose a method to integrate programming in schools having few resources. Furthermore, discuss why students have least interest in problem solving and coding skills.**

***Keywords—Coding skills, learning difficulties, programming in schools, programming courses.***

Modeling of Energy Efficient Smart Lightening System using Internet of Things for Smart City

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Abstract—Internet of things (IoT) is online collection of sensors and actuators which sense data, process and communicate with each other via internet within a network. Smart city is an integration of smart nodes, sensors and actuators implemented to sense data from real environment within a network. The sensors and actuators embedded in real environment enables the transformation of smart environment. Many researchers have developed different solutions for modeling of smart cities but still it needs to be done much more in this area. However, we have focused on energy efficient smart lightening system which is an important component of smart city. In our proposed model we have divided street lights energy usage into three categories: low, moderate and high. The street light energy usage is low when there is a day light, moderate when there is no heavy traffic on roads and high when there is heavy traffic on roads. Street lights turn on when a vehicle enters in a passage after sensing its entry within a region. A passage is collection of sensors which detects a vehicle and turn on all lights of the passage based on graph theory. The graph based model is transformed into a formal model using Vienna Development Method-Specification Language (VDM-SL). The proof of correctness is provided by using VDM-SL toolbox.

*Keywords—Smart city, Internet of things (IoT), energy management, lightening system, Formal methods, graph model*

An Effective Communication with Parents from School Side in Pakistan

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# *Abstract* ­\_\_Parent’s involvement plays major role on the school going children in Pakistan. A strong communication system can make it more valuable. In this paper we discussed the issues and problems faced by children and teachers from the unethical behavior of the parents and communication between them especially in rural areas of Pakistan. We found that we can proposed an effective communication system with the usage of ICT that can instantly communicate with parents from school side. Further, a web and mobile based solution is proposed for instant communication between teachers and parents for sharing information such as attendance, results, file sharing, parent teacher meetings, fee structure, grades about the children and above all the mentoring and guiding the parents about benefits of education.

# *Keywords \_\_ Education, Communication, Parental Involvement*

Analysis and Formal Model of Patient Discharge System

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***Abstract***—**The Patient Discharge System (PDS) plays an important role in hospital framework. PDS is used to perform the patient discharge procedure in the hospital when a patient health is recovered. In this paper, patient discharge system is focused on managing bills and retracting the hospital valuables from patient. The existing patient discharge systems consist of ambiguities and flaws because they are modeled just using informal and semi-formal techniques. Therefore, semi-formal and formal RFID based model of PDS is presented in this paper. First of all, we develop the semi-formal model of PDS using Unified Modeling Language (UML) for developing better understanding of the system. Then we transform UML-based model into formal model using formal methods based specification language, i.e., Vienna Development Method-Specification Language (VDM-SL) to improve the accuracy, effectiveness and robustness of the system. In this way, the evolution time, analytical and maintenance costs for developing patient discharge systems will be decreased.**

***Keywords— RFID, Patient Discharge System, UML, Formal Modeling, verification***

Survey on IOT Authentication through Block Chain Technology

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***Abstract*—Privacy and security of Internet of Things (IOT) remain one of major challenge. It is because of huge scale and scattered nature of IOT networks. While, with the start of Block Chain, it emerged as a revolutionary technology. IOT is experiencing development in research but still there are many threats on the security and confidentiality. Conventional security and privacy policies are not effective for IOT. To overcome this threat several techniques are used and one of them is Block Chain (BC) technique. This paper analyzes distinct IOT security and privacy features. Further, this paper proposes Block Chain technique to minimize security threats. Through Block Chain we can configure and manage IOT devices. By managing keys using RSA public key cryptosystems. In this system public keys will store in Ethereum and remote keys will store on devices.**

***Keywords—IOT, Block Chain, IOT Authentication***

Software Economics:

Cost Estimation and Reduction Approach

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*Abstract*—Software economics deals with to allocate the resources to software projects and closely related to software design and engineering. It helps mangers to deal out the resources in the efficient manner. Advancement in software economics is difficult to achieve while using conventional approach. By using iterative approach we can improve software economics to get better estimation about cost and it also helps to minimize development cost .It is also sometimes difficult to get better quality of software by using old project management processes and tools because of advancement of technology and technical standards. The outcome of this paper is to understand how software economics helps software project manager to make better estimates of product by different tools and techniques in efficient manner. It also includes an approach to estimate and reduce cost of project in given resources.

***Keywords—Modern software project management, Software Economics, Software Cost reduction, reuse***

Gaze Interaction with Computer: A Step towards Vision Based Interaction

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***Abstract*—Human interaction with computer through eye is cognitive interactions. In this research, previous techniques are discussed which were discovered related to techniques involved in eye movement. The eye movement is of two types. One is stationary while the other is paused. So on the behalf of these acknowledgments some previous work was done which involves input by camera place on fore head, input by eye retina and input by cornea dipoles. Many experiments taken on the work and the IR-PCR technique were considered to be good one. This research paper provides the proposed approach with this technique. All the factors regarding the techniques were examined. So the application is made on unity, all the steps of constructions are discussed in the paper. The application technique was calibration of camera with eye. Eye adjustment was the major part to be improved. MIDAS TOUCH PROBLEM is overcome by eye mapping on unity. In eye gaze input through the blinking eye is solved. The input is not influenced by blinking actions. Spectacle wearing and not wearing also do not have any influence on eye detection application. The mouse input was not as speedy as eye gaze input.**

***Keywords— Cognitive, IR-PCR, MIDAS TOUCH PROBLEM, eye gaze input.***

A Survey on Security Issue in Cloud Computing of Hardware Virtualization

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***Abstract*—The current look of cloud computing has significantly changed some opinion about the development of software development and architectures. Previously, the computational world has changed from client server (centralized) to distributed systems and now we move back to the centralization virtualization mechanism known as cloud computing. In the surrounding calculation, the position of data and process makes the difference. On the one hand, the human computer has full access to data and processes. On the other hand, we have storage space where different services and data are provided by the different seller who leaves the user unaware of where data is process and drive or where it is stored. cloud computing practices the internet as communication methods. In the cloud store. In the surrounding calculation, the position of data and process makes the difference. On the one hand, the human computer has full access to data and processes. On the other hand, we have storage space where different services and data are provided by the different seller who leaves the user unaware of where data is process and drive or where it is stored. cloud computing practices the internet as communication methods.**

***Keywords—Cloud Computing, Virtualization, Hardware, SaaS, PaaS, IaaS, SLA***

Survey Paper of Distributed Database in an Operating System

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***Abstract*—The methodology related to the distributed database is been presented with the utilization of database system which play important role in the operating systems which are present in such a way that they look distributed. In order to provide the best results, the methodology used in this research, is the ultimate approach to achieve necessary results. The UNIX operating system was been considered keeping in mind. This paper provides us the best approach, in comparison with other approaches used by various researchers in their reign. One may argue about the steps and the technique used in this research paper, keeping in mind of the drawbacks, which may come afterwards.**

***Keywords—Distributed database, operating system, database management system, distributed database management system***

Android Malware Detection

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*Abstract*—It is true that Android is the widely used operating system by majority of the users. As the demand of Android devices is getting greater day by day, so it is necessary to keep such devices safe from every kind of malware that is harmful for it. Many tools and techniques are helpful in removing the malicious files from the Android devices. Many applications are been introduced through which we can remove malware from the Android devices. It is necessary to know all the methods so that one can be able to remove the malicious content from the device. This research paper is been written to introduce and discuss Android malware detection, and methodologies leading to conclusion that how malware is detected and how any Android device can be kept safe from malware.

*Keywords—Android, Malware, Malware Detection.*

Using Scrum Effectively in Global Software Development

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*Abstract*—The use of Global Software Development (GSD) is accelerating with each day. The main advantages of using GSD by leading organizations to the development of software are; less time to develop software, notable reduction in costs, A high degree of software quality, intelligent resource management. Processes are well defined leaving no space for ambiguities and orderly documentation. However, few challenges were also found in Global Software Development. Agile practices have been used to overcome these challenges. The whole project is controlled and managed by SCRUM. This article includes the investigation of the benefits achieved as well as the challenges faced by the management in implementing Scrum in GSD projects. An online survey was conducted to study how Scrum practices have been used to overcome the project management challenges in the implementation of Scrum practices in GSD. It is found that SCRUM is very adaptive and innovative in GSD projects.

Keywords— Software Engineering, Agile, SCRUM, Scrum benefits, Global Software Development, SCRUM practices, Project Management Challenges, Scrum Implementation

Generating Corpus for Evaluating Performance of Process Matching Methods

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Abstract—Business process management (BPM) plays a vital role in organizations management. A central piece to that is the collection of business process models. Depending upon the size of organization, the collection may have a large number of process models in their process repository. A key feature to such a repository is searching/similarity of process models. For a given pair of process models, similarity refers to finding whether the two process models that form the pair are similar or not. To compute similarity between process models, several techniques have been established however a rigorous evaluation of these techniques has either not been conducted on numerous occasions or the evaluation has not been sufficiently rigorous. A key reason to that is the absence of benchmark set of queries and their relevant process models, as judge by human experts. In this study, we argue, the fewer queries used for evaluation may not have the necessary diversity to challenge the abilities of the matching techniques. This work is usually not done due to large number of manual comparisons. It is thus required pool of queries. A related challenge is to identify a pool of process models that are declared as relevant to the query models. To address these challenges, we have suggested a technique.

Keywords— Business Process Model, Similarity between Process Models, Manual Annotations.

Improvement in energy efficiency of cellular network by division& Massive MIMO

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*Abstract*— Demand for high data rate is increasing day by day. The solution provided to increase capacity and coverage are resulting in higher consumption of energy both in term of infrastructure and users. More directive beams by using massive MIMO and division in small cells are two extensive and significant solutions in this regard. In this paper we are providing an efficient solution to the prescribed problems. We provide a simulated result for minimizing the consumption of total power. The solution is possible with optimal beam forming. Approaches involve the combination of massive MIMO and small cell access system (SCAS). It may further be differentiated with areas and cell densities and scenarios with different areas distances and users and the capacity of the networks could be defined. Practically, however, the BS does not have perfect CSI. Instead, it estimates the channels as usual. Conventionally it is done by using uplink pilots. Since both the time frequency resources allocated for pilot transmission and the channel coherence time are limited, the number of possible orthogonal pilot sequences is limited too, and hence, the pilot sequences have to be reused in neighboring cells of cellular systems. Therefore, channel estimates obtained in a given cell get contaminated by the pilots transmitted by the users in other cells. This cause’s pilot contamination that is, the channel estimate at the base station in one cell becomes polluted by the pilots of the users from other cells. Considering the importance of pilot contamination mitigation to guarantee the good performance of massive MIMO, many schemes, ranging from optimal pilot design and allocation, advanced channel estimation, to downlink pre coding have been proposed to deal with this problem.

*Keywords —Wireless communication, Massive MIMO, SCAs, beamforming.*

Requirement Analysis Issues in Pakistan Software Industry

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***Abstract—*Requirement Analysis is very important phase in software development. The development of software depends on the requirements that we analyze in requirement analysis phase. Software industry tackled many issues and challenges due to the poor requirement analysis process. Many software projects fail partially or completely because these don’t meet all the constraints or requirements, or software engineers don’t gather all the requirements properly. Pakistani Software industry also tackled many challenges in requirement analysis phase. In this research, we conduct a survey to highlight major challenges that Pakistan software industry face and we are going to present a detailed and critical analysis of all those reasons behind project failure in Pakistan software industry and highlight the main requirement analysis issues in Pakistan software industry and how we can handle and overcome these challenges in our software industry.**

*Keywords—Software Engineering, Pakistan software houses, issues, solutions, software engineers, survey, Best practices.*

A Data Specific Comparative Study for Choosing Best Cryptographic Technique

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***Abstract*—Data security has gauged much attention for over a past few decades. Cryptography is one of the most serious domains as far as security is concerned. This article evaluates and compares among few of the well-known state of art cryptographic algorithm like AES, DES and Serpent depending on nature of data by different authors in different years. Benchmark techniques (True Positive rate, False Positive rate, ROC curves etc.) are used to analyze the sensitivity and specificity for the respective algorithms. Paper is concluded with the best possible algorithm that suits a respective dataset.**

***Keywords— Encryption, Evolution, Serpent, distributions, candidate architecture.***

Optimizing Windows Redstone 3 Boot Process

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**Abstract—Almost every Microsoft Windows user at some point in life must have experience that his/her laptop or desktop has gone down slow and is just not performing swiftly as it used to do when Windows was initially installed on that system. This results in decreased performance of the system in over a few weeks of fresh installation of Microsoft Redstone 3 OS, the system starts to show degraded performance and increased bootup and shutdown times. This is not only the case, the loading of documents and power point files along with other programs gets slow. The system gets slower and slower. To tackle this challenge, we propose a solution in this paper that will optimize the starting and shutdown times of Redstone 3 OS with marked improvement.**

Keywords— Redstone 3 , Slow Boot up , Slow Shutdown .

Effects of Refactoring and Design Patterns on the Software Source Code Quality : An Empirical Assessment

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**Abstract**—The purpose of this research is to identify the impact of refactoring techniques and design patterns on the source code of the Data management application. The research methodology used for this research is first identify the source code bad smells and then remove them by apply refactoring techniques and design patterns. To evaluate the impact of refactoring and design patterns on the source code quality; the code metrics and visual studio 2015 community edition is used to evaluate code metrics. The results of this research show that the applying refactoring and design patterns in a combination has a positive effect on the source code quality. The code reusability, expandability and understandability will be increased.

***Keywords—Design Patterns, Refactoring, Code Metrics,***

Development of Teacher Leadership with the Help of Intelligent Agent: A Multi-Faceted Approach to Bringing About Improvements in Rural Schools of Pakistan

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***Abstract*— The purpose of this study is to improve the performance of a private institute in Pakistan. In selected elementary schools this improved program was implemented which was designed to improve the education quality of low income students and teachers. With teacher leadership development, capacity-Building is the central focus. Constitution of leadership includes activity regularization communication, supervision, and pleasant environment for work, teacher motivation, and teaching quality in schools. Through a program of teacher leadership development, capacity-building of the institute is focused for the learning outcome. For this purpose, twenty teachers were selected. Assistance to the lead teacher is provided by using Multi-agent system. It is observed from the data obtained that use of multiagent intelligent system boost confidence of lead teachers. Assistance is given by intelligent agent uplift their thoughts to improve the schools, the way they can take a part in school improvement and the judgment of their abilities as lead-teachers.**

***Keywords—Intelligent agent, Lead Teachers, professional Development, School improvement***

Requirement Elicitation for Open Source Systems

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***Abstract*—Over the years, requirement engineering has become a first process for the development of software applications across the world. Requirement engineering as its name suggests is now a complete engineering with its five fundamental phases i.e. elicitation, analysis, specification, validation and management. A set of process models based upon these fundamental phases have also been developed. The tools and techniques for these phases are mostly focused towards development of proprietary software applications. However, as strong advocates of open source, we look towards standard requirement engineering in a different manner for open source systems. In our work, we have studied the standard requirement elicitation phase found in requirement engineering and present its complete form for the development of an open source system. We are hopeful that approach will guide community working on open source a way to elicitate requirement for their any kind of open source project.**

**Keywords—Open source, elicitation, requirement engineering, process, phases**

A Survey of Automated Testing Tools

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*Abstract*— Software applications are widely used in almost every field now-a-days. A full functional application is developed after passing through different phases of Software Development Life Cycle (SDLC), till the end user starts using it. Testing the application is one of the major tasks of Software Development Life Cycle known as SDLC. This activity is done for the effective performance, tracking out causes of inefficiencies and verifying whether a module or application fulfills the requirements. The purpose is to avoid defects, abnormal behavior, minimize risks of failure and ensure that the system is defect free. Testing can be done in both manually and automatically. Manual ways are not trust worthy because humans make mistakes and machines don’t if it’s programmed correctly. In this paper we have performed critical analysis on the automated testing tools available for .NET (which is a software development platform by Microsoft) determines their effects on effort, quality, productivity and cost of the product.

Keywords— Automated testing, .NET, N-Unit, X-Unit, MS-Test Automated testing, N-Unit, X-Unit, MS Test

Management of Social Issues in Supply Chain

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*Abstract*—This article is about the study of management of social issues in supply chain. An Experimental Study to explore social issues and performance outcomes. Basic purpose of the study was to know social issues in supply chain and performance of outcomes. In this study pretest posttest control group design will be used. This study will examine management of social issues in supply chain to explore social issues and performance outcomes. In this study pretest posttest control group design will be used. This study will examine management of social issues in supply chain to explore social issues and performance outcomes. Population of this study was the individuals of all the privately administered institutions related to management in capital city of Punjab Lahore. From total institutions working in Lahore 2 institutions was selected, after that two groups consisting of 20 people per group by simple random approach. First group was control group and other group was experimental. Researcher had developed pretest and posttest by reviewing the relevant literature and already taken test in the field. This study also demonstrates how the management of social issues affects the performance in supply chain. This study also give the better understanding of managing social issues in supply chains by linking social issues responsible supply chain.

***Keywords-Supply chain management, Social issues, corporate social responsibility, Communication and Compliance, Supplier development, Performance outcomes***

Design of a Cyber Security Research Lab

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***Abstract*—Important considerations in the design of a network security teaching and research lab are discussed in the context of the University Of Management and Technology Graduate Network Security MS course. The main objective is to provide a learning and research environment for the student to enrich their understanding of the network and computer security theory taught in the classroom with an extensive set of complementary hands-on laboratory exercises. The mission of Information security and DFIR Laboratory is to support varied demands of research, education, and outreach in information security and cyber forensics. More specifically, the laboratory must be able to be used by professors for conducting research activities; individual student thesis and project work, class projects on information security topics, and to support faculty and students partnering with industry on issues of practical security. The type of expected research projects include Information Hiding, Tracing and Watermarking, Intrusion Detection and prevention, Applications of Machine Learning in Information Security, Key Distribution, Escrow and Security Protocols, Survivable Computation, Cryptography, Malware analysis and classification, Mobile Device security and Forensics, Software Security, Vulnerability Assessments and Penetration Testing to name a few.**

***Keywords—Cyber Security, Certificate Program, Education***

Survival Prediction on the Titanic using Binary Classification

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***Abstract*—The sinking of the RMS (Royal Mail Ship) Titanic is one of the most infamous shipwrecks in history. As there was 2224 passengers and crew from which 1502 could not survive. Some groups of people were more likely to survive than others. In this research, we will analyze what sorts of people were more likely to survive in that tragedy by analyzing the data and will predict the survival based on the features like age, sex and passenger class etc. and will conclude the correlation between these factors. There are not well written papers that describe this problem and provide solution by recommending suitable approaches for solving this problem. Our concern is predicting survivals by classifying passengers as ‘survived’ or ‘not survived’, so we use popular classification models of Machine Learning I.e. Logistic Regression, Naïve Bayes and Decision tree for Classification and will predict that whether a passenger will survive or not. In doing so, we will analyze the differences between methodologies applied, challenges in prediction and will recommend appropriate solution for prediction. This research will be useful to solve relevant prediction problems as we analyze different aspects of prediction.**

Keywords—prediction, regression, classification, machine learning, logistic, entropy, python,

Design and Development of Secure Mobile Communication over GSM Network using Open Source Operating System

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*Abstract*—With the rapidly advancing technology of today, exchange of information and data is a very pertinent matter. The world has just recently witnessed the effects of information leakage through the issue of WikiLeaks. There are huge amounts of data being shared over different platforms nowadays. Global System for Mobile Communication (GSM) is one of the most reliable platforms known to and used by almost all people in the world for text as well as voice communication. With the tools like Android Studio and NetBeans available, it is now possible to encrypt the text that has to be sent over the GSM, so that it can be decrypted at the other end of the communication path. However, the encryption and decryption of voice being transmitted over the GSM network still remains a question. In the domain of real time voice encryption, much of the work being carried out pertains to the voice being exchanged through the Internet Protocol. As compared to the Voice over Internet Protocol (VoIP), voice over the GSM network has not seen much research work related to its security aspects. The purpose of this paper is to document the results of a project aimed at developing a platform for mobile phones in order to communicate over the GSM network in a secure manner. The most suitable method for achieving the above mentioned objective is to use an open source Operating System (OS), so that the source code is easily accessible and usable. In this paper, the Android OS will be under discussion, which is compatible with all the Android mobile phones. In this way, the maximum number of mobile phone users can be benefitted because Android cell phones are being widely used nowadays. The use of cryptographic algorithms for securing the voice communication over the GSM network is also a part of this paper. The work revolves around the Java programming language since the Android application development has been carried out in Java through the use of Android Studio. Also, NetBeans has been employed for developing algorithms for voice encryption.

*Keywords*—*Android Operating System, Global System for Mobile Communication (GSM), encryption, decryption, cryptography.*

Adaptive Replica Synchronization for Distributed File System

Several synchronization approaches of replicas for distribed file systems

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*Abstract*—This survey paper explained the different approaches of synchronization of replicas of files placed on distributed systems. The survey tells some older and latest techniques of synchronization. Some techniques are by the interference of metadata servers and some are without any intrusion of MDS. In former technique SS storage servers are used for synchronization among replicas. To maximize the performance, scalability and reliability CEPH is a distributed file system. It makes distinction between meta data and data management by object storage file system run on object file systems. Excellent I/O and metadata management is done on CEPH. Commodity servers and disks are used for multitier distributed systems. Performance reliability, I/O rate, workload in writes operations and less overhead in synchronization are the main focus while synchronization of replicas. Hadoop and Google file system are the distributive file systems. Hadoop ensures the better input and output performance with minimal synchronization in replicas, data intensive applications and provides fault tolerance. Some strategies are used for data intensive applications. Parallel file system is type of distributed file system. Analysis enforces the best performance on small and large input output requests. Pattern direct and layout replication technique is one of the most optimized techniques for parallel file system. Data access performance, reliability, data consistency, centralized synchronization, less workload, less overhead is the main focus of all the techniques. Some other file systems like SOFA and frangipani do focus on data consistency and reduce of bandwidth.

*Keywords—* *Adaptive replica synchronization, file systems, ceph, gmei, MDS*

A Comparative Analysis of Distributed and

Parallel Computing

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***Abstract*— In the age of emerging technologies, the amount of data is increasing very rapidly. Due to massive increase of data the level of computations are increasing. Computer executes instructions sequentially. But the time has now changed and innovation has been advanced. We are currently managing gigantic data centers that perform billions of executions on consistent schedule. Truth be told, if we dive deep into the processor engineering and mechanism, even a successive machine works parallel. Parallel computing is growing faster as a substitute of distributing computing. The performance to functionality ratio of parallel systems is high. Also, the I/O usage of parallel systems is lower because of ability to perform all operations simultaneously. On the other hand, the performance to functionality ratio of distributed systems is low. The I/O usage of distributed systems is higher because of incapability to perform all operations simultaneously. In this paper, an overview of distributed and parallel computing is described. The basic concept of these two computing is discussed. In addition to this, pros and cons of distributed and parallel computing models are described. Through many aspects, we can conclude that parallel systems are better than distributed systems.**

*Keywords—Distributed computing, Parallel computing*

Web Usage Mining Using Patterns with Different Algorithms

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*Abstract* —Web usage mining is a part of data mining. Data usage mining is divided into three parts 1) Data content mining 2) Data structured mining 3) Data usage mining. In this paper I am discussing about log files which are used in data usage mining. Log files are used to store user’s activity in web server using websites. So that websites can be improved by gathering user data. Web usage mining having three sub parts which is reprocessing, data discovery and data analysis. Further, in this paper, details about web log files are discussed. Three algorithms are discussed which are used for patterns of log files. There comparison is showed in this paper with the help of graphs.

*Keywords— Log files, apriori, FP-growth, K-means, Data Usage Mining, webserver, Web data, web mining.*

Image Processing Architectures

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***Abstract*— one type of signal processing is Image processing in which the input used as an image and the output might also be an image or a set of features that are related to the image. Images are handled as a 2D signal using image processing methods. For the fast processing of images, several architectures are suitable for different responsibilities in the image processing practices are important. Various architectures have been used to resolve the high communication problem in image processing systems. In this paper, we will yield a detailed review about these image processing architectures that are commonly used for the purpose of getting higher image quality. Architectures discussed are FPGA, Focal plane SIMPil, SURE engine. At the end, we will also present the comparative study of MSIMD architecture that will facilitate to understand best one.**

*Keywords—Image processing architecture, FPGA, SIMPil, SURE engine, MSIMD*

Comparison and Evaluation of Information Retrieval Models

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*Abstract*—Recently data is growing day by day in the internet. Data is in the form of Structured, unstructured and semi structured in nature. Information Retrieval is the field which is regarding the study of retrieval of unstructured or semi structured documents. For every aspect IR is being used in there are different models being used in them. There are so many models in so many applications, each having some relation to one another. In this paper we will evaluate and compare various IR model techniques and algorithms and see which model excels in which field of application.

*Keywords—LSI(Latent Semantic Indexing), SVD(Singular Value Decomposition), BIM(Binary Interdependence Model), PRB(Probilistic), DAG(Directed Acyclic Graph).IR (Information retrieval).*

Security Issues and their Defenses in Typical Wireless Sensor Networks

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*Abstract*—This paper describes security challenges and their solutions in modern wireless sensor networks. Wireless Sensor Networks (WSN) is an emerging technical solution to deploy, monitor, track and optimize ad-hoc connectivity in spatially distributed autonomous devices. These networks consist mainly of small chips that are spread around the environment. Most WSNs are vulnerable to threats so it is pertinent to protect these wireless networks from external or internal threats. Hence an efficient and effective security mechanism is required by modern WSNs so these security issues must be considered from beginning of its designing phase. Addressing Security concerns in WSNs is typically more challenging than that of traditional LAN environment because there wireless media is involved in propagation of WSN signals. Different security concerns, challenges and hopefully solutions as well will be tried to be presented in this paper. Discussion of different security attacks, mitigating solutions thereof and efficient defensive procedures is also provided.

Keywords—WSN, LAN, WAN, threat, vulnerability, signal, sensor, node, attack, CIA, Gateway, Control Panel, Sybil, hello flood, DDoS, wormhole, sinkhole, IPS, IDS, Sybil Guard, Mason Test.

Hybrid Cars Recommendation & Prediction System

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*Abstract*—Now a day’s customers are making online conversations in different community groups and shaping the future differences of products. People do often online purchases but prefer before to get some information from other user's opinion or reviews about that product. But it is very tough job read all those bulk reviews and make a decision about which product is best to purchase. To solve this issue about Hybrid Cars in market this system is proposed on the basis of reviews gathered from different platforms. Proposed system is recommending the hybrid cars through a sentimental analysis model by negative and positive reviews. Performance of this system is with respect to accuracy.

Keywords- Sentiment analysis, Customer’s feedback, Natural Language Processing, Hybrid cars recommendation, hybrid cars prediction

Requirement Elicitation Issues and Challenges in Pakistan Software Industry

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*Abstract*—Requirement elicitation is the actual description of the system that the software developers follow in the earlier stages of development process. It is one of the most important and primary part in developing a new application or project. It describes what a system should do and what it is capable of doing. There are some essential requirements of a system that must be met for its correct functionality. Many software systems fail due to the wrong requirement elicitation practices or poor requirement elicitation. Without the help of elicitation it is impossible to find out the needs and the requirements of the user. In Pakistan software industry, requirement elicitation practices are not followed. In this paper, we have analysed the issues and challenges being faced by the Pakistan software industry due to the poor requirement elicitation process. The identified issues in requirement elicitation process include change of scope, volatility problem, change in user needs, understanding problem, uncertain requirements, communication problem and missing requirements.

***Keywords—Software Engineering, Requirement Elicitation, Requirement Engineering, Volatility***

A Critical Analysis of Software Failure Causes from Project Management Perspectives

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***Abstract*—With the growth of technology, people and companies are more relying on software systems. For that, we need a product/software that is trustworthy, reliable, and economical. It should be maintainable, dependable and useable. If the software is developed with much accuracy, everything is being done by it as planned and the software is set to the market then the success rate will be high. But if there is any bug in the software then not only the software will fail but it will also affect the organizations that are responsible for making it. So the failure of software also has a great impact on the organization. In this research, we are going to present a detailed and critical analysis of all those causes due to which the software fails and the factors that hinder in a project success. We will study the existing software development processes and also analyze how they can helpful in reducing these causes.**

***Keywords— Software Projects, Failure Factors, Project Failure, Critical Analysis***

Effectiveness of Agile Development Frameworks with Respect to Testing

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***Abstract*—Software Development Life Cycle models are used as the basis to design software applications. In these models, there exists some tribulations and to overcome these defects, agile models are presented. The mature software applications of agile development utilize both iterative and incremental style. It can be viewed as a response against conventional procedural activity. It is viewed not as to meet the volatility and varying situations but as the modern business ethics for software development. By examining and exploring the agile models, it has been found that efficiency of agile models can be improved. This research investigates the agile frameworks (DSDM and LSD) in terms of testing. It also examines that the effectiveness of dynamic systems development model (DSDM) from testing perspective. The results show the performance of DSDM agile framework and the estimated efficiency of this framework.**

Keywords—SDLC, software models, agile, DSDM, lean, LSD

Frequent Pattern Mining System for Online Clothing Stores

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Abstract—The major problem for many organizations is to handle and analyze transactional data of those products which are sold together. We need knowledge patterns to improve sales, customer satisfaction and using the past transactional data. The main problem which is faced in market basket analysis that we need to process huge amount of scattered data. This paper is focusing on market basket analysis by using association rule mining to find frequent patterns. The proposed system is an intelligent approach towards finding the frequent patterns from the transactional data. In this paper an online system is being developed which will allow the user to find the frequent patterns from the whole dataset using FP-Growth and the system also enable the user to find the frequent patterns out of the given targeted patterns using the approach named Targeted Patterns Involved Items Transaction Reduction-Frequent Pattern Mining (TPIITR-FPMM). FP-Growth is a state of the art algorithm to find frequent patterns and in TPIITR-FPMM system ask the domain experts to tell the possible needed patterns to be analyzed and the system finds the frequent patterns out of the given targeted patterns.

*Keywords*—*Market Basket Analysis, TPIITR-FPMM, FP-Growth, Customer Relationship Management (CRM), Transactional Data, Frequent Pattern Mining, Recommender System*

DDoS Attack Detection Strategies in Cloud   
***A Comparative Study***

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*Abstract*—Cloud is known as highly-available platform that has become most popular among businesses for all information technology needs. Being widely used platform, it’s also a hot target to cyber-attacks. Distributed Denial of Services (DDoS) is a great threat to cloud in which cloud bandwidth, resources and applications are attacked to cause service unavailability. In a DDoS attack, multiple botnets attack on victim using spoofed IPs with huge number of requests to server. Since its discovery in 1980, numerous methods has been proposed for detection and prevention of network anomalies. This study provides a background of DDoS attack detection methods in past decade and a survey of some of the latest proposed strategies to detect DDoS attacks in the cloud, the methods are further compared for their detection accuracy.

Keywords— DDoS attacks, cloud security, network security, entropy, machine learning, arima

Facial Emotion Detection through Deep Covolutional Neural Networks

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*Abstract*—Our society has evolved to a threshold where use of machines to automate mundane tasks is constantly increasing in daily life. Providing machines with capability to develop perception from their environment can lead them to perform a great variety of tasks. Facial emotion detection is crucial sub-part of machine perception development. In this article we present a deep learning based approach for Facial emotion Detection. Our model uses Convolutional Neural Network (CNN) to learn deep features for classification of facial images into one of 22 emotion (Basic 7 + Compound 15) categories considered in this study. We trained our CNN model with the images dataset from Martinez et al. Our Facial Emotion Detection model was developed using keras with theano backend and implemented on a GPU-powered testbed. Our model achieved 67.6% accuracy for basic emotions and 33% accuracy for compound emotions.

*Keywords— Facial Emotion Detection, Deep Covolutional, Neural Network,*

Comparative Study of FPGA Performance for LDPC Decoding

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***Abstract*—Field Programmable Gate Arrays (FPGA) are being widely used as high performance processing units due to their speedy processing, parallelism and programmable flexibility for customized tasks. Due to the high computational requirements of Low Density Parity Check (LDPC) codes, FPGAs are being used for LDPC decoders which are the strong solution for forward error correction in communication domain. By exploiting high computational power capabilities FPGA based LDPC decoders are now being designed as an efficient solution with high performance. This paper presents comparative study regarding use of FPGAs for LDPC decoders. Comparative analysis of FPGA based-LDPC is presented with discussion of processing throughput, flexibility, BER ratio, efficiency in terms of bandwidth and I/O performances.**

***Keywords—FPGA, LDPC, DECODERS***

Google Page Rank Site Structure Strategies for Marketing Web Pages

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***Abstract—*Today web is the hub of source and knowledge. There are multiple Search Engines to categorize the web content on base of search query. These search engines are continuously visiting the web pages/sites and gathering the information, this process is called crawling/spidering. These pages should be structurally strong enough that any crawler can easily crawl them, also data representation should in well-organized form that crawlers can parse these pages easily and can compare with other pages which will help the search engines to index them properly. So, focus of this paper is on structural perspective of a page and internal graphical relations between pages. Page Rank is an algorithm used by Google Search to rank web pages. According to Google, Page rank is based on page content and page structure. Google has already provided some instructions related to Page structure, tag orientation and linking strategies but these instructions are not enough to make an ideal webpage for crawlers in a structural aspect. To fill the gaps people are using SEO (Search Engine Optimization) techniques but Google differentiate easily the original structure and copied/fake structure. Main problem is to find out the Layout, Google is using internally to evaluate the sites because given structure in not enough. This paper is proposing some additional structural techniques, by applying these techniques Google rank increases for experimental web pages.**

***Keywords—Web page Structure, Crawling, Scraping, Spidering, Page Rank, SEO***

Extracting Events from Social media Using NLP

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***Abstract—*Now a day’s Social media is major channel of communication between individuals and organizations. Huge data is available over the social networks, so it is important and essential to analyze this data to extract information. The data on social media is very much scattered, to extract information it needs to be organized. Natural Language Processing (NLP) techniques are used to analyze the scattered data to fetch information for targeted entities (Event, Category, Date, Place, and Time period).Extracted information it is listed on database and can be used in several ways. In this paper, a model is proposed which categorize event by their types, Date Place and Time. The results show this model can categorize the 90% events.**

***Keywords— NLP, Scrapping, POS, Chunking, Chinking, Tokenization.***

Technique for Detection of Gold in Hue Saturation and Value

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***Abstract*—Detection of precious metals at a far of place is well known issue for the scientist and engineers. This problem becomes more evident, when detection of such metal is required at different planets. Since the first information of such things is images, that can be taken. So, the detection and estimation of such metals can be done by using image processing. In this paper, a technique is referred for the detection of gold metal based on statistical parameters (mean, mode and median). The proposed system is capable of detecting gold metal. The model is simulated and verified on MATLAB. HSL (hue, saturation and lightness) and HSV (hue saturation and value) are two different representatives of RGB color model. In HSV representation models the way paint of different colors mix together, with the saturation dimension resembling various shades of brightly colored paint and the value dimensional resembling the mixture of those paints with varying amount of black and white paint.**

***Keywords— Mean, Mode, Variance, Standard Deviation, HSV, HSL, RGB***

Enhance the Performance of Associative Memory by Using New Methods

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***Abstract*—Data or instructions that are regularly used are saved in cache so that it is very easy to retrieve for the purpose of increase the cache performance. Evaluating the execution of multi-core systems the part of the cache memory is very important. A multicore processor is shared circuit in which two or more processors are joined to enhance the performance and perform multiple tasks. Problem Statement: In what ways improve the performance of cache memory by using new methods. This paper describes the performance of cache memory based on cache access time, miss rate and miss penalty. Cache mapping methods are defined to increase the performance of cache but it faces many difficulties. Some methods and algorithms are used to decrease these difficulties. In this paper describes the study of recent competing processors to evaluate the cache memory performance.**

***Keywords—Performance, Associative Memory, New Methods***

Live Broadcasting Robot: Cost Effective Approach

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***Abstract*—The robot used in this study is a mobile robot which is furnished with four actuator wheels and is examine as a system subject to non-homonymic restraints. This project is very low budget mobile robot for heavy load that consists of distance sensors, Arduino, Dual tone multi frequency, motor driver and DC motors with wheels. The main motto of designing this robot is to help the military and rescue services to use it as surveillance or rescue service robot. Not only this, it can reduce the complexity of operating remote control based robots. Camera introduced on the robot can give video sustain to the client keeping in mind the end goal to perform examination in new zone.**

***Keywords—Robot, Live streaming, Android, Proximity sensors***

Designing of Low Cost Arduino Based Ultrasonic SONAR System

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***Abstract*—Sonar (Sound Navigation and Ranging) was covertly created by few countries during the reign of World War II. SONAR can be used to detect some moving object. It helps in the measurement of distance and angle from the observer. It works on the principle of Doppler shift. The designing of cheaper SONAR system for security purpose is the requirement of industry. In this research Paper, the designing and implementation of Arduino based SONAR system using ultrasonic sensor are presented. The device is able to detect the object, calculate its distance (up to 30cm) and can determine the elevation angle. It provides cheaper solution for security purposes.**

***Keywords—Arduino, Obstacle detection, Proximity sensors***

Reducing Surgical Mortality Rate; Automation of Anesthesia during Surgery in Pakistan

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***Abstract—*Anesthesia has become an emerging field in medical science over the past few years in Pakistan. Anesthesiologists have a key role in patient safety, when a surgery is to be performed. The anesthesia information captured for surgery is very critical, as it effects surgical outcomes and mortality rates. In Pakistan just a few private hospitals are using anesthesia software, but majority are still dependent on the paper work. In this paper state of the art anesthesia automation model has been proposed. With the help of this model all critical anesthesia information related to surgery would be captured, monitored and controlled, preventing the adverse outcomes and reducing the surgical mortality rates. This model implements machine learning algorithms that in future will help to prescribe the dosage of anesthesia depending on different factors e.g. patient credentials and type of surgery, eventually standardizing anesthesia dosage.**

***Keywords—Anesthesia, Medical Applications, Surgery.***

Shared Bus Architecture and Arbitration Techniques for Multiprocessor System

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*Abstract*— This survey paper gives an overview of five popular shared bus arbitration techniques namely Round Robin, Static fixed priority, Lottery, Token passing and Code Division Multiple Access (CDMA). This paper also reviews three types of Bus Architecture namely, Wishbone, Core Connect and Advanced Microcontroller Bus Architecture (AMBA). Features and issues of arbitration policies and Bus architectures are discussed and comparative performance is analyzed.

Keywords— SoC, Round Robin. Lottery, Token, AMBA, CoreConnect, Wishbone

Classification of Twitter’s Data to get Gender Identification on The Basis of Text

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Abstract—This paper describes the accuracy of various algorithms for classification of text on the basis of gender identification. We examined the knowledge extracted from corpus of twitter’s online social media in term of gender identity. By comparing algorithms on different feature sets, we established a feature set of 20 distinct arguments which increase the correctness of gender identification on all over the twitter. We reported accuracies of three algorithms obtained by using two approaches applied on two classes of gender i.e. male and female; a model where a lot of features are reduced using powerset transformation.

Keywords— Stylometric feature . content based feature . Gender Identification . Data mining

Model Estimating Size for Mobile Board Games

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***Abstract*—Now a day, People are depending on information technology development to get entertained like playing games. Mobile phones, tablets, iPad are the resources which provide a platform to the people for fun and enjoyment. Alternatively by observing we can understand that developing software systems are becoming popular to take over manual systems. A part from other software applications mobile game application development is more complex to work and too much time and cost consuming problem, so we need a size estimation model. Different techniques and methodologies are adopted in software size estimation all around the world. For android mobile board based game the situation become more critical because of the less availability of space to complete the project. In this research, Forward stepwise Multiple Linear Regression (MLR) is used to propose a size estimation model for the board based mobile games. These strategies are going to enable developer to estimate the size of games and after that the model is then assessed through different prediction metrics and validate through K-fold cross validation method to assure usage of a parametric model. This model will provide a guiding ways to the project manager in estimating the size of the game.**

***Keywords—Multiple Linear Regression (MLR), Function point analysis (FPA), Source lines of codes (SLOC), Function points (FP), Size estimation***

Technology & Social Media Addiction Resulting In Low Self-Esteem and Impatience among Youngsters

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***Abstract*—In this research study, the relationship of low self-esteem with social media addiction and technological addiction triggering impatience among the young generation was examined. The students that are under the age of 17 – 25 years old were studied in this research and it was established that low self-esteem is caused as a result of social media addiction and it is a statistically significant variable for establishing this relationship. It means that this addiction to social media is because these youngsters want to get a feeling of self-adequacy, belongingness, being loved, and wanted. In the similar manner the technological addiction and its relationship with developing impatience among this generation was studied and the results revealed that it is a significant variable to understand this relationship. It is recognized through this research that technological addiction grants instant gratification to its users and it is the source of developing impatience among them. It has been evidently seen that almost everyone around us is using one of the many social media platforms to connect with people and be able to share what’s going on in their individual lives. While it has been said that it’s an addiction; it is of the utmost importance to know how a person is being affected by it. We are focused in studying the problem that this generation is growing with a low self-esteem and impatience as compared to the previous generation and most importantly its impacts on their overall lives. We know for a fact that life offers many hardships for us to deal with; it is the approach that we use to handle those issues that could be either fruitful or harmful to us and low self- esteem in an individual is a harmful result of not using the right approaches to cope with social or peer-pressure. The feeling of belonging-ness is captured virtually through different social media sites or apps instead of connecting with people in person. The technology and social media addiction where provides a lot of convenience and benefits to us also has a bad side to it. The addiction of tech in everything we do has led many of us down the path of impatience developed through instant gratification. No amount of heavy research has been done on this problem that we are addressing and is still being explored by many across the world. The increase in the rate of usage of both social media and different technological systems and apps is alarming to many researchers which is why this phenomenon is being studied through various aspects such as this.**

***Keywords*—*Social Media Addiction, Low Self-Esteem***

A Survey of Computer Aided Diagnosis (CAD) of Liver in Medical Diagnosis

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***Abstract*—In the modern World, diseases may occur at any time. Early diagnosis can prevent the serious consequences of the disease. The Computer Aided Diagnosis has very positively influenced the medical field. It helps the Radiologists to diagnose the diseases very quickly, precisely and accurately. The earlier diagnosis can help doctors to cover further spreading of the disease and to overcome at all. In this paper presented the following step to implements the Diagnosis process including the image preprocessing, Feature Extraction, Segmentation and classification. There are different techniques used in Image Segmentation like Fuzzy-C-Mean (FCM) Algorithm, Thresholding, Watershed Clustering Method and Region Growing etc. Feature extraction is the second phase that includes the calculation of different features of segmented lesion. It transforms the data that is in high-dimensional space to some extent of lesser dimensions. This is the final phase the classification phase that which is deals the Measurement of feature that are used the input to support the vector machine in last classify the lesion. This paper works of Computer Aided Diagnosis on liver lesion has briefly described.**

***Keywords—CAD, FCM, Fuzzy, Clustering, Region Growing, Watershed, thresholding, Region of Interest, segmentiation, MRI, CT Scan.***

An Exposition of Wireless Sensor Network Area Coverage and Lifetime Based on Meta Heuristic and Particle Swarm Optimization Algorithms

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***Abstract*—An important issue among the most vital and essential issues in Wireless Sensor Networks (WSNs) is the area coverage problem. This issue in WSNs causes the security situations directed by the current sensors in the systems suitably. The significance of scope in WSNs is important to the point that is one of the natures of administration parameters. In the event that the sensors don't suitably cover the physical situations they won't be sufficient proficient in supervision and controlling. The scope in WSNs must be in a manner that the vitality of the sensors would be the slightest to build the lifetime of the system. Alternate reasons which had expanded the significance of the issue are the topological changes of the system finished by the harm or cancellation of a percentage of the sensors and now and again the system should not lose its scope. Along these lines, in this paper we have half and half algorithm, the Meta-Heuristic calculations like Differential Evolution and Particle Swarm Optimization algorithms and have broken down the range scope issue in WSNs. Additionally PSO algorithm is executed to look at the productivity of the half and half model in the same circumstances. The consequences of the trials demonstrate that the half and half algorithm has made more increment in the lifetime of the system and more upgraded utilization of the vitality of sensors by improving the scope of the sensors in comparison to PSO.**

***Keywords—Network Security, Algorithms, Area coverage, Sensor***

Anomaly Based Intrusion Detection System which Analyze the Dataset and Detect Intrusion

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***Abstract*—As the research increased in computer science highlight the scientists mind for the growing research world towards security. Researchers have done a lot of research work in network Security. Cyber security has progressively become a zone of alarm for officials, Government agencies and industries, including big commercialized infrastructure, are under attack daily. First signature-based intrusion detection systems were developed, and it detects only novel attacks. To detect strange attacks statistical IDS came into being recognized as anomaly-based IDS. It is not as much efficient as it detects all. In this, study the author focus on the efficiency of IDS using NSL-KDD99 dataset and support vector machine (SVM) technique to identify attacks. NSL-KDD dataset is used for the evaluation of these type of systems.**

***Keywords— Anomaly Based IDS, SMO, Poly kernel, Normalized poly kernel RBF kernel, support vector machine, Decision tree, J48.***

A Brief Survey on Channel Information, Estimation and Data Detection for MIMO-OFDM Systems

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***Abstract*—The fourth generation wireless communication systems are going to be used in many countries. Demand for high data rate is also increasing day by day. This paper provides a survey for some problems in the transmission of data in wireless communication. For enhancing data rates some techniques, like orthogonal frequency division multiplexing (OFDM) and multiple input multiple output (MIMO) are being used. Inter symbol Interference (ISI) is being reduced by using OFDM and MIMO and data rate can also be increased. The OFDM-MIMO system uses two space time codes which are independent, for two sets of transmitting antennas. A multiple-input multiple-output (MIMO) communication system incorporated with the orthogonal frequency division multiplexing (OFDM) modulation technique are going to be used to obtain decisive data rate transmission over broadband wireless channels. We covered the areas having the limitations of conventional detection and channel estimation techniques devised for multiuser MIMO OFDM systems.**

***Keywords —Wireless communication, MIMO-OFDM, ISI***

Sentiment Analyzer for Real Time Feedback of Students

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*Abstract*—By the previous literature, it was identified that student’s feedback in real time plays an important role in the learning process. Several researchers and students have selected for the students real-time feedback but the studies have other several limitations and one of the main big limitations between those studies was to analyze the feedback. Moreover, the limitation is completely addressed in the current research and further recommend a system that can easily help to collect the student’s feedback in real time. Further, automatically possess the ability which can analyze, collect the feedback and provide the conclusion by analyzing the results. Use of analysis techniques for sentiments and for methodologies can be proposed for the development of this system.

Keywords—Sentiment analysis, Student feedback, Natural Language Processing

Theoretical Framework of Agent Assisted Treatment for ASD (Autism Spectrum Disorder)

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***Abstract***— **kids with Autism Spectrum problems (ASD) have conversation deficits and problems with social interaction. A lack of social conduct can bog down healing interventions and may lessen the potential to examine social talents. Robots had been shown to initiate proactive social conduct in youngsters with ASD. Improvement of robot systems able to appearing as catalysts for social conduct in the context of ASD remedy is the need of contemporary era. A methodology and theoretical framework is being supplied here in this paper for a robotic system that can not only compare the effects and stage of ASD however can assist the victim consequently.**

***Keywords****—* ***ASD; Robotic System; Victim; Social Conduct***

An Image-Based Multimedia Database and Efficient Detection Though Features

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***Abstract*— Accurate feature detection during Image retrieval is important, data retrieves through image retrieval methods like CBIR and CBIR higher dimension data also need storage and access through different methods, content-based Image retrieval uses query like query by feature and query by example. More focus has made on accurate feature detection because need accurate feature retrieval. In simple words objectives are, to develop methods with sequence to classify features with normalization for efficient image retrieval from bulk dataset and also to improve method for local and global feature retrieval with automatic feature detection along accuracy. After study of different detection-based system, a methodology has been proposed which improves retrieval based on feature detection and feature detection had been improve with combination DWT+PCA+KSVM (polygon kernel +RBF kernel + Linear Kernel).**

***Keywords —- Image content, Content bases Image retrieval; Semantics, Query by feature, Query by example.***

Career and Skills Recommendations Using Data Mining Technique: Matching Right People for Right Profession, in Pakistani Context

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***Abstract*— There are a number of recommendation systems available on the internet for the help of jobseekers. These systems only generate job recommendations for people on the basis of input entered by user. The problem observed in Pakistani people is they are not clear in which field they should start or switch working. Before searching and applying for a job, one should be clear about his/her profession and important skills regarding selected profession. Based on above issues, there is a need to design such a system that can overcome the problem of profession selection and skills suggestions so that it can be easy for a jobseeker to apply for a specific job. In this research, the problem which is discussed above is resolved by proposing a model by using Association Rules Mining, a data mining technique. In this model, professions are recommended to job seekers by matching the profile of applicant or job seeker with those persons who have same profile like educational background, professional skills and the type of jobs which they are doing. The data collected for this research itself is a major contribution as we collected it from different sources. We will make this data publically available for others so that they can use for further research.**

***Keywords— Association Rule Mining, Data Mining, Profession Recommendations, Skills Recommendations***

Prediction of Heart Disease using Artificial Neural Network

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*Abstract*— Heart disease is increasing rapidly due to number of reasons. If we predict cardiac arrest (dangerous conditions of heart) in the early stages, it will be very helpful to cured this disease. Although doctors and health centers collect data daily, but mostly are not using machine learning and pattern matching techniques to extract the knowledge that can be very useful in prediction. Bioinformatics is the real world application of machine learning to extract patterns from the datasets using several data mining techniques. In this research paper, data and attributes are taken from the UCI repository. Attribute extraction is very effective in mining information for the prediction. By utilizing this, various patterns can be derived to predict the heart disease earlier. In this paper, we enlighten the number of techniques in Artificial Neural Network (ANN). The accuracy is calculated and visualized such as ANN gives 94.7% but with Principle Component Analysis (PCA) accuracy rate improve to 97.7%.

Keywords—heart disease, artificial neural network, principal component analysis

Self-organization in Computer Architecture: A Survey

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***Abstract*—The self-association in many operating systems indicates that it is contradictory, in self-organized computer architecture. This problem is expressed regarding the co-operation between the macro-level that has forces the self-organized systems. This paper includes the latest techniques and methods followed by different researchers. They introduced their methods and worked on them with the known computer self-based organization techniques. They proposed different methods and their possible solutions. In this survey we had gone through 30 papers of different researchers they had proposed the best solution according to our observation for self-organized computer architecture.**

***Keywords—self-association, computer architecture.***

Cache-Only Memory Architecture

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**Abstract—COMA is a form of cache-coherent non-uniform memory architecture with large caches that help in reduce network load and latency. In COMA, the complete system memory exists in the caches, that why they need the less number of network access. The shared-memory provides the easy way for parallel program writing, and minimize the clash of frequent long latency memory access with the help of applications that need the extensive programmer technique. The problem needs to be highlight in the Cache Only Memory Architecture is • block localization, • block replacement, and the memory overhead. The proposed techniques that are based on operating systems, and its help the compilers to make the performance better by shared out the data near to the processors that currently utilized the data. In Cache Only Memory Architecture, data is locally accessible and hardware replicates the data transparently and transfer the data into the node memory that is presently utilized this node. In this all memory unit performs like large cache-memory and in this every block has a state and the tag along address. In this they highlight different Cache Only Memory Architecture designs and compare that Cache Only Memory Architecture with NUMA systems, and introduced the changes in non-uniform memory architecture systems which highlight the Cache Only Memory Architecture issues. In the NUMA system the physical address space is statically partitioned among nodes. The COMA architecture provides the programming model same like shared memory architecture, and this architecture allows the dynamic distribution of memory consumption and execution to run quickly. In another paper they introduce another type of COMA that is the Data Diffusion Machine and in this they also introduce its artificial performance for huge applications. Data Diffusion Machine depends on a hierarchical network structure with processor pairs. In this, the remote access generate the fixed traffic on a fixed part of the machine. In another paper they highlight some other issues in COMA that is dealing with the memory overhead, replacing a line and finding a line.**

***Keywords—COMA, Flat COMA, Block Localization, Memory Overhead.***

A Review of Techniques for Optimizing Cache Energy Efficiency

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***Abstract*—in today’s computer there are larger sizes of the cache are using on the chip. Moreover, there is significant change has happen in the technology. Because of that change cache power efficiency has become the important issue in the processors. To solve this problem most of the researchers have proposed different methodology to improve the cache energy efficiency. This paper review different techniques that are proposed for improving cache energy efficiency. There are different techniques discussed in this survey paper that are used to improve the cache energy at different level of the cache. The main focus of the paper of survey is to urge the different researcher to propose different methodology so they can make the cache more efficient and energy saving.**

**Keywords—Cache energy efficiency, dynamic cache, static cache.**

Multicamera Video Stitching Surveillance System

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***Abstract*—CCTV cameras are commonly used for security issues. Pan-tilt-zoom (PTZ) cameras are mostly used for this purpose. To stitch two or more video streams from different cameras is much cheaper than PTZ solution. There are three stages of video stitching. Feature identification is the first stage of video stitching. To scale the invariant features like rotation, scaling and noise etc. Direct and feature base identification has basically two types of feature identification. Shifting and warping the images purpose to identify how these features are agreeing with each other is the main concern for direct base identification. While feature identification rely on extracting the features and then perform matching among them on the base of features. Calibration is the second stage of the video stitching. The images are stitch in panoramic way in calibration depending upon alignment among them. Blending is the last stage of video stitching where numerous videos are display in single panoramic way. Any blending algorithm is used to blend the pixels together and for final view.**

***Keywords—Video stitching, Surveillance system, Computer vision, Image processing.***

Attacks Analysis of TCP and UDP of UNSW-NB15 Dataset

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***Abstract*—TCP (Transmission Control Protocol) and UDP (User Datagram Protocol) are the most important protocols in complete protocol architecture. There are many types of attacks that can block the communication or reduce the performance of a protocol. This study provides a detail analysis of TCP and UDP attacks and their application layer protocols. The authors will also suggest that where the security administrator should focus for providing best security. The old datasets such as KDD99 and NSLKDD has many limitations. This study uses UNSW-NB15 dataset which has recently been generated.**

***Keywords—TCP, UDP, UNSW-NB15 dataset, Analysis***

Cartoonization, Caricature and Emotion generation from a single intensity frontal facial image

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***Abstract–* Interest in research activities in facial processing especially cartoonization, caricature and emotion generation have gradually increased over the recent years. The contribution of this paper is threefold. First, it provides an algorithms along with its results in which exaggerated cartoon like effects are added into a single facial frontal image according to the given cartoon template. The cartoon formed in this process will have similar features as of original image. Secondly, the study provides facial transformation algorithms and techniques to generate various artifacts and emotions including sad, shy, happy, blank, serious, surprise and innocent. Thirdly, the study discusses different transformation algorithms to generate various caricatures from the single frontal facial image. The output images generated using these open source algorithms and techniques are also provided in this paper to assess their subjective quality.**

Keywords—Emotion generation; Caricature; Artifact generation; Transformation; Scaling; Cartoonization

Protein Sequencing Algorithms – A survey

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**Abstract— Protein sequencing is used in many fields. In this technique, sequence of amino acids in a protein is determined by using an algorithm. For this, there should be better understanding of structures as well as functions of proteins in any living organism. In this paper, different algorithms of protein sequencing have been discussed. Majorly ten algorithms are discussed with their applied formulas as well as their steps and then well demonstrated with graphs. In comparative analysis, these algorithms are compared; paper is concluded with best possible algorithm for protein sequencing.**

**Keywords—*Adenine, Guanine Thyamine, Markov, Oligonucleotides, Nucleotides, RNA, DNA***

Comparative study on uncertainty of software requirement and RISK analysis

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*Abstract*—Software requirement Engineering has gauged much attention for over a past few decades. It is one of the most serious domains considered in software development life cycle. Different systems show different types of uncertainties depending on requirements. As per the academics says “Requirements are naturally Unknowable”. Many researchers worked on minimization of uncertainty of requirements in different times. This article evaluates and compares among few of the well-known state of art methods used for requirement gathering to minimize the uncertainty and risk that were adapted by different authors in different years. Benchmark techniques (True Positive rate, False Positive rate, ROC curves etc) are used to analyse the sensitivity and specificity for the respective techniques. Paper is concluded with RMMM plan that satisfies the risk factor.

Keywords— *Uncertainty, decision problems, prior probability distributions, candidate architecture.*

A Data Specific Comparative Study for Choosing Best Cryptographic Technique

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*Abstract*— Data security has gauged much attention for over a past few decades. Cryptography is one of the most serious domains as far as security is concerned. This article evaluates and compares among few of the well-known state of art cryptographic algorithm like AES, DES and Serpent depending on nature of data by different authors in different years. Benchmark techniques (True Positive rate, False Positive rate, ROC curves etc.) are used to analyze the sensitivity and specificity for the respective algorithms. Paper is concluded with the best possible algorithm that suits a respective dataset.

Keywords— Encryption, Evolution, Serpent, distributions, candidate architecture.

**AN ELUCIDATION OF PALM PRINT RECOGNITION TECHNIQUES USING PROBABILISTIC AND COMPUTATIONAL PARADIGMS.**

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Abstract—In this article different state of art palm print recognition techniques have been discussed. Furthermore, various aspects of palm print recognition methodologies pertaining to feature extraction and representation are elaborated. Various researchers have developed and used diverse databases for the purpose of experimentation and probing their methods. This article provides an analysis on each set of methodologies in terms of different parameters such as efficiency, accuracy and effectiveness. The comparative analysis provides several benchmarks to quantify the usefulness of each technique and determine tradeoffs in terms of cost and effectiveness.

Keywords— Linear Discriminant Analysis, Improved linear discriminant analysis, Phase congruency & 2D Principal component Analysis, Spectral Minutiae Representation.

***EXTRACTING TRUE NUMBER OF CLUSTERS FOR SEGMENTING IMAGE THROUGH ADAPTIVE FINITE GAUSSIAN MIXTURE MODEL***

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Abstract—Knowing exact number of clusters in a digital image significantly facilitates in precisely clustering an image. This paper proposes a new technique for extracting exact number of clusters from grey scale images. It analyzes the contents of the input image and adaptively reserves one distinct cluster for one distinct grey value. The total count of the grey values found in an image determines the exact number of clusters. Based on the contents of image, this number of clusters keeps on changing from image to image. After obtaining this number, it is given as an input to Gaussian Mixture Model (GMM) which clusters the image.GMM works with finite number of clusters and forms mixture of various spectral densities contained in that image. The proposed method facilitates GMM to adapt itself according to the changing number of clusters. Therefore, the proposed model along with the inclusion of GMM, is named as Adaptive Finite Gaussian Mixture Model (AFGMM). The clustering performance of AFGMM is evaluated through Mean Squared Error (MSE) and Peak Signal to Noise Ratio (PSNR). Both of these performance measuring methods confirmed that exact number of clusters is essentially important for reliably analyzing an image.

Keywords— gaussian mixture model (GMM); clustering; segmentation; expectation maximization (EM) algorithm

***A Novel Approach For Efficient and Accurate Sales Prediction System***

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Abstract— The proposed study applies a machine learning technique called multivariate linear regression to determine the relationship between amount of sale and contributing factors that could affect effect demand of products. Sales forecasting is a challenging task due to frequent demand change. The basic purpose behind this research is to develop a system which has the capability of successful prediction of the sale of stock of any product. World is progressing rapidly and so are their needs. To ensure timely supply of products a prediction software is required which could give a big picture of demand and sale of products and facilitate in decision making. Performance of proposed model is evaluated by using real data from a Big Mart which is available in competition.

Keywords—Sales Prediction, Artificial Neural Network, Multi Layer Perceptron, Machine Learning, Artificial Intelligence