A Survey of Load Balanced Job Scheduling Schemes in Cloud Computing

Shamma Shabnam Nasim, Chowdhury Md. Mizan, Tridib Chakroborty, Sudeep Ghosh, and Suparna Karmakar

Abstract Recently, there has been a huge increase in cloud computing popularity, which has resulted in high demand for computing resources, based on pay-per-use model. There is also a need to support several users on similar physical infrastructure. One of the main objectives is to utilize the resources efficiently and achieve the greatest benefit. Scheduling is a basic issue in building cloud computing systems, as cloud supplier needs to serve numerous clients in the system. The algorithms for scheduling should arrange the jobs in a way where balance between QoS and performance, as well as efficiency and moderation among the jobs should be maintained. A good job scheduling technique helps in efficient and proper resource utilization. This paper surveys some current research on job scheduling and management of resources for cloud computing.

Keywords Cloud computing · Load balancing · Job scheduling · Virtual resources · Physical infrastructure · VMs

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(3, 3) Visual Cryptography for Online Certificate Authentication

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Abstract: ***Today organizations face a challenge while recruiting candidates, who provide forged mark sheets in order to get a job. To prevent wrong hiring a detailed and thorough approach is needed to verify the authentication of both the candidate and the marks obtained by him/her. There are so many modern cryptographic protocols available which can be used for authenticating individual's academic achievement certificates. Visual Cryptography is a simple and secure way to allow the secret sharing of images without any cryptographic computations or the use of encryption or decryption keys. The novelty of the visual secret sharing scheme is in its decryption process where human visual system (HVS) is employed for decryption of secret shares. In this paper we have discussed (3, 3) visual cryptography scheme which can be used to generate shares and distributes them among three parties, i.e. the Job Seeker, Certificate Issuance Authority and the Organization conducting Job interview. Secret message can be decrypted only if all the three shares are available. Every certificate carries a unique number which is encrypted using visual cryptography and without handshaking of all the parties it is impossible to decrypt, thus ensuring full proof authentication.***

Keywords: (k, n) Visual Cryptography, Digital Authentication.

I. INTRODUCTION

Presently producing fabricated Marksheet to recruiting bodies by jobseeker has transformed into a noteworthy issue. A mark sheet is said to be forged when a candidate, not holding that degree or engravings claims to hold the same. It is done by copying the certification no. of some other candidate, holding a comparable capacity truly or by changing imprints.

Making a forged imprint sheet is not a major issue these days. There are different programming projects accessible to satisfy the prerequisites of making a fabricated mark sheet.

The methodology of this paper is to distinguish fabricated mark sheet utilizing Visual Cryptography.

Visual Cryptography is a method for screening a picture which coordinates to certain shares and are doled out to specific people. At the point when these shares are incorporated the first picture is revealed.

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Consequently, this VC method is founded on the Human Visual System, which gives a superior method to verify pictures with no computational trouble. This recreation is finished utilizing the XOR activity. For distinguishing forged mark sheet we will incorporate

3 shares of a Certificate no.(kept verified uniquely at Certificate Issuing Body's end) and will appoint these shares to (Share 1)Certificate issuing Organization,(Share 2)Printed on Marksheet,(Share 3)candidates as an Authentication Key. The candidate or the job seeker is producing the original certificate just if in the wake of consolidating all these 3 shares the unscrambled picture matches with the first Certificate No.

From the start, the certificate issuing organization creates the Marksheet with mark sheet no imprinted on it. For each Marksheet no Issuing organization will keep a one of a kind Certificate no(associated with that marksheet no.), which will never be unveiled to competitor or jobseeker, selecting bodies or another person. One more thing, in addition, each certificate no. will hold the marks, the understudy got, as a suffix. Utilizing Visual Cryptography(VC) 3 shares will be created from this certificate no.,one of which(Share 1)will consistently be kept at Issuing Organization's hand,another one(Share 2) will be imprinted on the Marksheet and the last one (Share3) will be given to the up-and-comer or occupation searcher as Authentication Key.

Presently during the confirmation procedure of the jobseeker, the person in question will produce the mark sheet no and the authentication key to the recruiting body. They will bring the online entrance, made for recognizing forged mark sheet. Entrance will at that point bring the certificate issuing organization for further procedure. The issuing organization at that point will bring the applicant related with that mark sheet no and will request to upload the mark sheet, the issuing organization will combine

1. the share imprinted on applicant's imprint sheet(...Share 2),
2. the authentication key given by the activity searcher or candidate(...Share 3),
3. The share kept at issuing organization's end associated with the mark sheet no, jobseeker provided(...Share 1).

In the event that the decoded picture matches with certificate no(which the certificate issuing organization is having) associated with the mark sheet no.(provided by the job seeker), certificate issuing organization verifies the jobseeker's affirmation to the Portal and if does not Verification gets dropped.

Subsequent to getting a positive impression about the certificate no. the certificate issuing organization checks whether the marks, present as the postfix with the marks matches with the marks, engraved on the mark sheet the jobseeker has transferred.

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Distinction between Text and Non-Text Using Ensemble Classifier

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***Abstract*—** In the recent era of technology, recognition of text and non-text images is a major challenge in the field of computer vision so as to efficiently extract the text from that image. There are many algorithms available for the extraction of the text from the image, however, the algorithm used for the extraction of the text from the images would have a higher efficiency if it is known beforehand that the image is a text image or a non-text image. However, in old manuscripts, the extraction of the text is very difficult. In that case, the algorithm for the distinction between the text and non-text becomes very easy for detection of any such text in the manuscript and extract the text from it. In our approach, we have built a system that takes any sort of image as an input. After the input of the image, it is then processed and converted into a binary image. Distance transform method is then applied and the measure of the distance between the various points in the image are then calculated. From the calculated points, duplicate points are merged into one point and are sorted in ascending order. The total area of the binary image is then calculated and also the image corresponding to each of the distance transform points are then calculated. The total area of the binary image is then divided by each of the area value of the corresponding distance transform points are the value extracted is known as the feature values. After getting all the feature values the whole value is then divided into small intervals and is then processed through the classifier. For our experimental purpose, we have chosen the ensemble classifier for our study and experimental analysis. The correctness of the classifier is then calculated and evaluated for the distinction between text and non-text images. This method is a very simple and accurate method for the distinction between the text and the non-text images and also helps in the extraction of the text from the image. Experiment have been done with simple text and non-text image dataset and the efficiency of the proposed method is then demonstrated.

***Keywords*—**distinction between text and non-text, bar chart, classifier, ensemble classifier

I. INTRODUCTION

The text is an important part of the image. It is also that part of the image which sometimes gives us some important textual information. In some cases, it is clearly understandable, while in others it becomes very difficult to understand the text from the image. The work for the extraction of the text becomes more difficult if it is the case with the video. A video is nothing but a collection of image frames together which are displayed at a regular interval of time so as to create the persistence of vision in the human mind. As a result, the work becomes tedious for extraction of the text from the video frames as the text are not understandable in some of the frames. So it would much easier for one if they are able to distinguish between an image containing text and an image that does not contain any text before the extraction of the text from that image. This process makes it less complex as it is known beforehand that the image contains any sort of text or not. The tedious process becomes easier if we need to extract the text from the old manuscript because due to the passage of the time the quality o the paper gets degraded and as a result, it becomes very difficult to extract the text from the manuscript.

We know that there are many functions and algorithms (eg. OCR) which can detect a text from an image. But sometimes it happens that there efficiency is not as good as it is expected to be. This is because some structures in natural images seem to represent a text. For example, a tree with a full bunch of leaves may seem to represent the character 'I', but in reality, it is a tree. The algorithm tries to extract that text from that image. But unfortunately, it is unable to find any sort of text and at last, after a long time, it fails to extract any text. As a result, it takes a lot amount of time for the extraction of the text from that image which actually does not contain any sort of text.

In our approach we present a new solution which is very effective and almost accurate in determining the type of image i.e., it is a text or non-text. This solution would help in improving the accuracy for extraction of the text from the image. In our approach, we have obtained a bar chart from the feature values for both text-based and non-text based

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MEAN AVERAGE ACCURACY FOR TEXT AND NON-TEXT IMAGES USING SVM CLASSIFIER.

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Abstract— Recognition of text and non-text images is a major challenge in the field of computer vision so as to efficiently extract the text from that image. The algorithm used for the extraction of the text from the images would have a higher efficiency if it is known beforehand that the image is a text image or a non-text image. However, there are many images such as old manuscripts where the extraction of the text becomes very difficult. In that case, the algorithm for the distinction between the text and non-text becomes very easy for text detection and have high accuracy and fast in detecting the text from the image. This method can also be applied to detect and extract the text from the signboards also. In our approach, we had built a system that takes any sort of image as an input. After the input of the image, it is then processed and converted into a binary image. Distance transform method is then applied and the measure of the distance between the various points in the image are then calculated. From the calculated points, duplicate points are merged into one point and are sorted in ascending order. The total area of the binary image is then calculated and also the image corresponding to each of the distance transform points are then calculated. The total area of the binary image is then divided by each of the area value of the corresponding distance transform points are the value extracted is known as the feature values. After getting all the feature values the whole value is then divided into small intervals and is then processed through the classifier. The accuracy of the classifier is then calculated and evaluated. This method is a very simple and accurate method for the calculation of the average accuracy of purely text and purely non-text images which can be further used to distinguish between text and non-text images. Experiment have been done with simple text and non-text image dataset and the efficiency of the proposed method is then demonstrated.

Keywords— text and non-text, distance transform, SVM classifier

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TSV based 3D-SIC Testing

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ABSTRACT

Three Dimensional Integrated Circuits (3D IC) have been getting attention among researchers and IC designers as an emerging technology to help overcome the interconnect delay and power limitations. Tight integration of multiple silicon tiers using vertical 3D vias as interconnect offers a better functioning of 3D-ICs. In this work, we focus on 3D-SICs implemented using Through- Silicon Via (TSV) vertical interconnects. Through strategic modification of the architectures to take advantage of 3D, significant improvement in the functioning can be achieved.

Keywords— *3D IC, TSV, SICs*

1. INTRODUCTION

The semiconductor industry is pushing relentlessly for high-performance and low-power chips. Recent advances in semiconductor manufacturing technology have enabled the creation of complete systems with direct stacking and bonding of die-on-die. These system chips are commonly referred to as Three-Dimensional (3D) stacked ICs (SICs). In this work, we focus on 3D-SICs implemented using Through-Silicon Via (TSV) vertical interconnects. Using this technology, 3D-SICs are created by attaching multiple device layers to each other through wafer or die stacking, and connecting metal layers between dies using vertical TSVs. Compared to traditional two-dimensional SOCs, 3D-SICs provide greater design flexibility, higher on-chip data bandwidth, reduction in average interconnect length, and alleviation of problems associated with long global interconnects.

Testing core-based dies in 3D-SICs brings forward new challenges. In order to test the dies and associated cores, a Test Access Mechanism (TAM) must be included on the dies to transport test data to the cores, and a 3D TAM is needed to transfer test data to the dies from the stack input/output pins. TAM design in 3D-SICs involves additional challenges compared to TAM design for 2D SOCs. In a 3D-SIC, a test architecture must be able to support testing of individual dies as well as testing of partial and complete stacks. Furthermore, test architecture optimization must not only minimize the test time (test length), but it also needs to minimize the number of TSVs used to route the 3D TAM; as each TSV has area costs associated with it and is a potential source of defects in a 3D-SIC.

2. PREVIOUS WORK

There has been quite a number of experiments being conducted in the field of 3D IC. The results that have been obtained is a result of studying these various works and hence an improvement over the former.

Testing of 3D Stacked ICs (SICs) is becoming increasingly important in the semiconductor industry. In this paper, the problem of test architecture optimization for 3D stacked ICs implemented using Through-Silicon Vias (TSVs) technology. The paper considers 3D-SICs with both fixed, given and yet-to-be-designed test architectures on each die and shows that both corresponding problem variants are NP-hard [1].

Advancement of VLSI technology helps the semiconductor industry to manufacture Through-Silicon-Via (TSV) based 3D Stacked ICs (SICs). During 3D assembly, multiple partial stack tests are necessary. In the paper, test architecture optimization for 3D stacked ICs is implemented with hard dies. Two different test sets derive optimal solutions to minimize all test times when complete stack and multiple partial stacks, need to be tested. Results are performed for two handcrafted 3D SICs comprising of various SOCs from ITC'02 SOC test benchmarks. In this work, the test architecture optimization for 3D SIC where the die level test architecture is fixed and each die consists of one SOC. The decrease in total test length with the increasing number of TSVs is more than the increase in the number of test TSVs. Furthermore, there is a presentation of test schedules and corresponding test lengths for every multiple insertion [3].

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Hybrid routing protocol in Vehicular Ad-hoc Network

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ABSTRACT

A vehicular ad-hoc network is a class of Mobile Ad-hoc Network (MANET), consisting of a network of vehicles, moving at a relatively high speed that communicate among themselves with different purposes. The wireless access in vehicular environment system has been developed to enhance driving safety and comfort of automotive users. The main drawback of VANET network is the network instability, which reduces the efficiency of the network. One of the major challenging issues in VANET is routing due to high mobility and dynamic topology change. Since the routing protocol decides how better the communication occurs among the vehicles, the design of the routing protocol is very important. There are some well-known VANET routing protocol like AODV (Ad hoc On-Demand Distance Vector Routing Protocol), DSR (Dynamic Source Routing (DSR) Protocol), OLSR (Optimized Link State Routing (OLSR) Protocol), GPSR (Greedy Perimeter Stateless Routing), etc. and those routing protocol have some advantages and disadvantages. No routing protocol is efficient alone for all the scenarios of VANET, so it is required to review the existing protocols and find out a hybrid routing protocol for VANET for better connectivity and better communication.

Keywords— *VANET, DSR, OLSR, GPSR*

1. INTRODUCTION

During recent years, there has been an unprecedented growth in wireless networks. This can be attributed to the high demand for wireless multimedia services such as data, voice, video, and the development of new wireless standards. There are a lot of other driving factors that have led to the rapid and continuous change of wireless networks worldwide. Mobility is a major driver for mobile networks because mobile users continue to demand access remotely anywhere and anytime. The ever-growing need for mobile Internet access, interactive services, training.

A form of mobile ad hoc network, to provide communications among nearby vehicles and between vehicles and nearby fixed equipment, usually described as roadside equipment In VANETs, participating vehicles are equipped with a set of wireless sensors and On-Board Units (OBUs) to allow for the possibility of wireless communication between the vehicles and their environs. These devices make each vehicle function as packet sender, receiver and router which enable the vehicles to send and receive messages to other vehicles or Road Side Units (RSUs) within their reach via a wireless medium. These sets of wireless sensors, OBUs or some typical radio interfaces enable vehicles to form short-range wireless ad hoc networks to broadcast kinematic data to vehicular networks or transportation authority's/agencies which process and use the data to foster traffic efficiency and safety on the motorways. VANET-enabled vehicles are fitted with the appropriate hardware which allows for acquisition and processing of location (or position) data such as those from Global Positioning System (GPS) or Differential Global Positioning System (DGPS) receiver. The fixed RSUs are connected to the backbone network and situated at strategic positions across the roads to aid effective, reliable and timely vehicular communications.

RSUs are equipped with network devices to support dedicated short-range wireless communication using IEEE 802.11p radio technology. The possible vehicular communication configurations in Intelligent Transportation System (ITS) include vehicle-to-vehicle (or inter-vehicle), vehicle-to-infrastructure and Routing-Based (RB) communication. Vehicles can directly establish communication wirelessly with one another forming V2V communication or with fixed RSUs forming V2I communications. These vehicular communication configurations rely heavily on the acquisition of accurate and up-to-date kinematic data of both the vehicles and the surrounding environment with the aid of positioning systems and intelligent wireless communication protocols and access technologies for reliable, efficient and timely information exchange. Considering the network environment of VANETs with unreliable, shared communication medium and limited bandwidth [10], smart cross-layer communication protocols are required to guarantee

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Intelligent chatbot using machine learning

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ABSTRACT

The aim is to create a program chatbot will be designed to simulate an intelligent conversation with one or more human users. The ability of this program or the chatbot will be to learn and gather knowledge on its own, and with every passing conversation, it will grow itself to be more intelligent and reply with sophistication and charming manner. The main idea behind this whole program is to teach the program to learn, adapt and respond accordingly on its own. We will be using some basic databases to give it a head start but after that, it will do its work on its own. The users will interact with the bot and find it to be not much sophisticated but after using it for few days the bot will learn and find a pattern and will reply with more perfection and better understanding on the subject. Our final aim is to implement this program on Facebook as a messenger app for companies which deals with high user request and questions and find it difficult to help everyone, but this as can do the work for them and that too with multiple users at the same given time.

Keywords— *Supervised, Unsupervised learning*

1. INTRODUCTION

A chatbot is a program that communicates with you. It is a layer on top of, or a gateway to, a service. Sometimes it is powered by machine learning (the chatbot gets smarter the more you interact with it). Or, more commonly, it is driven using intelligent rules (i.e. if the person says this, respond with that). The services a chatbot can deliver are diverse. Important life-saving health messages, to check the weather forecast or to purchase a new pair of shoes, and anything else in between. The term chatbot is synonymous with text conversation but is growing quickly through voice communication. The chatbot can talk to you through different channels; such as Facebook Messenger, Siri, WeChat, Telegram, SMS, Slack, Skype and many others. Consumers spend lots of time using messaging applications (more than they spend on social media). Therefore, messaging applications are currently the most popular way companies deliver chatbot experiences to consumers.

Machine learning is an application of Artificial Intelligence (AI) that provides systems with the ability to automatically learn and improve from experience without being explicitly programmed. Machine learning focuses on the development of computer programs that can access data and use it to learn for themselves.

The process of learning begins with observations or data, such as examples, direct experience, or instruction, in order to look for patterns in data and make better decisions in the future based on the examples that we provide. The primary aim is to allow the computers learn automatically without human intervention or processing of location (or position) data such as those from Global Positioning System (GPS) or differential assistance and adjust actions accordingly. In the past decade, machine learning has given us self-driving cars, practical speech recognition, effective web search, and a vastly improved understanding of the human genome. Machine learning is so pervasive today that you probably use it dozens of times a day without knowing it. Many researchers also think it is the best way to make progress towards human-level AI.

2. SUPERVISED LEARNING

This algorithm consists of a target/outcome variable (dependent variable) which is to be predicted from a given set of predictors (independent variable). Here the human experts act as the teacher where we feed the computer with training data containing the input/predictors and us how it the correct answer (output) and from the data, the computer should be able to learn the patterns.

What are the Inputs and Labels (Targets)?? For example addition of two numbers a=5, b=6 result =11, Inputs are 5, 6. We first train the model with lots of training data (inputs & targets). Then with new data and the logic we got before we predict the output.

Evaluating impact on CMPs' power for design inaccuracy diagnosis

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Abstract: In CMPs (Chip Multi-Processors), with thousand of processors, the issue of power dissipation has emerged as a matter of serious concern. Out of several factors responsible for huge power drainage the branch prediction unit of a processor contributes almost 10% of the overall power dissipation. This work aims to analyse the impact of inaccurate/faulty design on the branch predictors' power dissipation while realising speculative execution. The issue has been addressed through introduction of probable faults in a predictor that lead to mis-speculation. The prediction mechanism in CMPs also plays a role in dead-block identification, that is to avoid unutilised power consumption in a system as well as to overcome the poor cache efficiency. The performance loss of a system due to design inaccuracies/faults in dead-block prediction is also evaluated. The detail analysis reveals that the design inaccuracies of a predictor can cause a huge power loss, even up to 95%. The additional power loss in a processor can effectively be sensed to enable diagnosis of the faulty module (design inaccuracies) of predictor as well as to frame guidelines for operating mode of a CMP's cache system.

Keywords: CMPs; branch predictor; dead block prediction; speculative execution.

Reference to this paper should be made as follows: Das, B. and Sikdar, B.K. (2017) 'Evaluating impact on CMPs' power for design inaccuracy diagnosis', *Int. J. Computer Applications in Technology*, Vol. 56, No. 3, pp.198–209.

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Biplab K. Sikdar is Professor and Head, Department of Computer Science and Technology, IIEST Shibpur. He has done his PhD from Bengal Engineering and Science University, Shibpur, in 2003. He had guided several PhD scholars and has got several international publications both at conference and journal. He has written a book on Mobile Computing. His research field includes cellular automata-based modelling of biological systems, cache coherence in CMPs, data migration in CMPs, high speed memory testing and quantum-dot cellular automata-based designs.

This paper is a revised and expanded version of the paper entitled 'Evaluating Impact on CMPs' Power for Design Inaccuracy Diagnosis', presented at the 'IEEE Asian Test Symposium (ATS-2011)', 21–23 November 2011 and the paper entitled 'Identification of power hungry unit in a processor with faulty predictor' presented at the 'IEEE International Conference on Circuits and Systems-ICCAS2012', 3–5 October 2012, Kulala Lumpur, Malaysia.

1 Introduction

The branch predictors contribute significant power loss to the overall power consumption of a processor, although the simple and small predictor of a modern processor itself consumes insignificant power. Further, the inaccuracy in predictors' functioning directly affects the amount of computations in processor execution – effectively, the power consumption of a processor (Baniasadi and Moshovos, 2001). Therefore, the design challenge for a power efficient predictor

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Hybrid Routing Approach Depending on Different Message Types in VANET

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ABSTRACT

VANET is a technology that uses moving cars as nodes in a network to create mobile network. VANET is part of mobile ad-hoc network that facilitates communication between group of vehicles to provide driver safety, traffic updates, entertainment, data sharing etc. Some of the promises of VANET are intelligent traffic system, early warning signals for vehicles that could minimize road mishaps and provision of better in-transit communication. As the performance of communication depends on the selection of best route while communication & routing of data is done by routing protocols. To provide smart communication, it is must to make an analysis of routing protocols in VANET. It is assumed that every vehicle has the digital map of streets comprised junctions and streets segments. In this paper, cluster head and cluster members communicate with each other effectively. Cluster members generate messages as per their need. The cluster head gathers in formations from its neighboring cluster members.

Keywords: Beacon Message, Query Message, Geo-Cast Routing, Position Based Routing

I. INTRODUCTION

VEHICULAR ad hoc network (VANET) is an emerging technology that aims to provide wireless communication between moving vehicles, as well as between vehicles and infrastructure stations. The main motivation for use of VANETs is its potential for providing safety-related information to vehicles. Vehicles exchange status information, such as speed, acceleration, and position in the periodic messages called beacons to create awareness for surrounding vehicles, increase safety, and reduce accidents. Diverse non-safety applications also expected for VANETs, ranging from road traffic efficiency to commercial applications and infotainment, such as entertainment for road travellers making their journeys more pleasant. VANETs have some characteristics that differentiate them from other types of mobile ad hoc networks (MANETs). These characteristics include fast node movements, a large network, and constrained mobility.

Routing is the process of selecting best paths in a network along which we can send our message. It is the process of sending a message from source to its destination. In network router performs it. It is the key feature of internet. Each intermediary device performs routing by passing along the message to next node over network. Routing tables are used to analyse the best path. Two major categories of routing protocols are topology based and position based. In VANET, the routing protocols are categorized into five categories, which are as: Topology based, Position based Broadcast. Cluster based, Geo cast based and broadcast based routing protocol.

A Comparative Study of Different Emerging Routing Protocols in VANET

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Abstract – Vehicular Ad Hoc Networks (VANET) is a special class of Mobile Ad Hoc Network (MANET) which provides communication between vehicles intelligently via vehicle to vehicle communication or vehicle to roadside communication. VANETs is an essential and emerging area of research in the field of Ad Hoc Networks. The main objective of deploying VANET is to improve the road safety and reduce the number of accidents. Existing routing protocols are not sufficient to meet all the issues in routing. To provide best routing protocol, it is necessary to make an analysis of routing protocols in VANET. This paper starts with the basic challenges of VANET and provides a detailed description of various existing routing techniques with its advantages and disadvantages. Finally, this paper discusses and compare the emerging routing protocols for VANET.

Index Terms – Intelligent transportation system (ITS), Zone of Relevance (ZOR), Geo Cast Routing, Position based Routing Protocol, OBU.

1. INTRODUCTION

Vehicular ad hoc network, consisting of a network of vehicles, moving at a relatively high speed, that communicate among themselves with different purposes, being the main purpose that of improving security on the road.

Vehicular Ad Hoc Networks are created by applying the principles of mobile ad hoc networks (MANETs) - the spontaneous creation of a wireless network for data exchange - to the domain of vehicles.

Vehicular Ad Hoc Networks. When principles of MANET are applied in domain of vehicles, they form VANETs. A generic term used to define VANETs is inter-vehicle communication (IVC). The vehicles are fitted with sensors. These sensors interact with the sensors of other vehicles or the infrastructure present outside.

A form of mobile ad hoc network, to provide communications among nearby vehicles and between vehicles and nearby fixed equipment, usually described as roadside equipment In VANETs, participating vehicles are equipped with set of wireless sensors and On Board Units (OBUs) to allow for possibility of wireless communication between the vehicles and their environs. These devices make each vehicle function as packet sender, receiver and router which enable the vehicles send and receive messages to other vehicles or road side units (RSUs) within their reach via wireless medium. These sets of wireless sensors, OBUs or some typical radio interfaces enable vehicles form short-range wireless ad hoc networks to broadcast kinematic data to vehicular networks or transportation authority's/agencies which process and use the data to foster traffic efficiency and safety on the motorways. VANET-enabled vehicles are fitted with the appropriate hardware which allows for acquisition and processing of location (or position) data such as those from global positioning system (GPS) or differential global positioning system (DGPS) receiver. The fixed RSUs are connected to the backbone network and situated at strategic positions across the roads to aid effective, reliable and timely vehicular communications.

RSUs are equipped with network devices to support dedicated short-range wireless communication using IEEE 802.11p radio technology. The possible vehicular communication configurations in intelligent transportation system (ITS) include vehicle-to-vehicle (or inter-vehicle), vehicle-to-infrastructure and routing-based (RB) communication .Vehicles can directly establish communication wirelessly with one another forming V2V communication or with fixed RSUs forming V2I communications.

These vehicular communication configurations rely heavily on acquisition of accurate and up-to-date kinematic data of both the vehicles and the surrounding environment with the aid of positioning systems and intelligent wireless communication protocols and access technologies for reliable, efficient and timely information exchange. Considering the network environment of VANETs with unreliable, shared communication medium and limited bandwidth [10], smart cross-layer communication protocols are required to guarantee reliable and efficient delivery of data packets to all vehicles and infrastructures (RSUs) within the vehicles' radio signal transmission coverage.

In VANET, the routing protocols are classified into five categories: Topology based routing protocol, Position based routing protocol, Cluster based routing protocol, Geo cast routing protocol and Broadcast routing protocol. These

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A New Approach For TSV Based 3D-SIC Testing

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Abstract – Three dimensional integrated circuits (3D IC) have been getting an attention among researchers and IC designers as an emerging technology to help overcome the interconnect delay and power limitations. Tight integration of multiple silicon tiers using vertical 3D vias as interconnect offers a better functioning of 3D-ICs. In this work, we focus on 3D-SICs implemented using Through-Silicon Via (TSV) vertical interconnects. Through strategic modification of the architectures to take advantage of 3D, significant improvement in the functioning can be achieved.

Index Terms – 3D IC,SOC, Testing, TSVs

1. INTRODUCTION

The semiconductor industry is pushing relentlessly for high-performance and low-power chips. Recent advances in semiconductor manufacturing technology have enabled the creation of complete systems with direct stacking and bonding of die-on-die. These system chips are commonly referred to as three-dimensional (3D) stacked ICs (SICs). In this work, we focus on 3D-SICs implemented using Through-Silicon Via (TSV) vertical interconnects.Using this technology, 3D-SICs are created by attaching multiple device layers to each other through wafer or die stacking, and connecting metal layers between dies using vertical TSVs. Compared to traditional two-dimensional SOCs, 3D-SICs provide greater design flexibility, higher on-chip data bandwidth, reduction in average interconnect length, and alleviation of problems associated with long global interconnects.

Testing core-based dies in 3D-SICs brings forward new challenges. In order to test the dies and associated cores, a Test Access Mechanism (TAM) must be included on the dies to transport test data to the cores, and a 3D TAM is needed to transfer test data to the dies from the stack input/output pins. TAM design in 3D-SICs involves additional challenges compared to TAM design for 2D SOCs. In a 3D-SIC, a test architecture must be able to support testing of individual dies as well as testing of partial and complete stacks. Furthermore, test architecture optimization must not only minimize the test time (test length), but it also needs to minimize the number of TSVs used to route the 3D TAM; as each TSV has area costs associated with it and is a potential source of defects in an 3D-SIC.

2. RELATED WORK

There has been quite a number of experiments being conducted in the field of 3D IC. The results that have been obtained is a result of studying these various works and hence an improvement over the former.Testing of 3D stacked ICs (SICs) is becoming increasingly important in the semiconductor industry. In this paper, the problem of test architecture optimization for 3D stacked ICs implemented using Through-Silicon Vias (TSVs) technology. The paper considers 3D-SICs with both fixed, given and yet-to-be-designed test architectures on each die and shows that both corresponding problem variants are NP-hard[1].

Advancement of VLSI technology helps semiconductor industry to manufacture Through-silicon-via (TSV) based 3D stacked ICs (SICs). During 3D assembly, multiple partial stack tests are necessary. In the paper, test architecture optimization for 3D stacked ICs is implemented with hard dies. Two different test sets derive optimal

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Remote Voting System Using Extended Visual Cryptography

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Abstract: ***Establishing trust is one of the most important human-human and human-computer interactions. Authentication can be done using something we know (for example, a password), something we have (for example, a mechanical key), or something we are (a living, breathing human). These may be combined to provide stronger authentication. In this paper, we discuss some of the issues associated with Internet-based remote voting and argue that visual cryptography offers a promising way to provide both satisfactory authentication and secret ballot guarantees.***

Keywords: Remote voting, Extended Visual Cryptography, Authentication

1. Introduction

People all over the world are starting to take a hard look at their voting equipment and procedures, and trying to figure out how to improve them. There is a strong inclination towards moving to Electronic Voting in order to enhance voter convenience, increase voter confidence and voter turnout.

Voting systems must be certified before they are used. Election officials must have confidence that the voting system will prevent fraud and perform reliably.

[1]Visual cryptography was originally invented and pioneered by Moni Naor and Adi Shamir in 1994 at the Euro crypt conference. Visual cryptography is "a new type of cryptographic scheme, which can decode concealed images without any cryptographic computation". No computer participation is required, thus demonstrating one of the distinguishing features of VC. VC is a unique technique in the sense that the encrypted message can be decrypted directly by the human visual system (HVS).

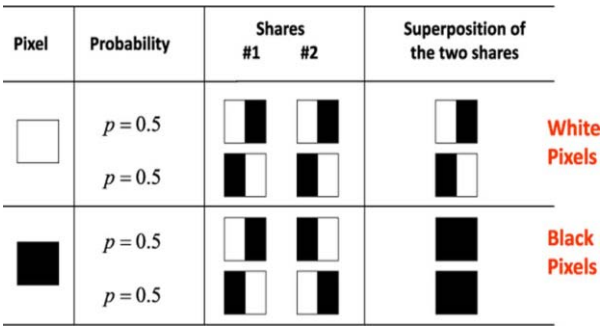
In Remote voting system before an election, the election officials need to generate and send image transparencies to eligible voters. A voter visits the election website. The election web site maintains a list of unique ids and associated passwords. The entered id must be on the list and has not been used already. If the entered id is valid, the election server then allows entering a random string. The complementary image to the password image for the voter's [3]transparency is generated and displayed on a web page. After the web server displays the corresponding image generated, the voter holds the transparency (share1) up to the screen to reveal the password. To continue the voting process, the voter enters the revealed password. This protocol serves to both authenticate the voter to the election server and the election server web site to the voter.

2. Approach

We propose to provide remote authentication for both voters and voting systems using visual cryptography.

Visual Cryptography

Generally speaking, images, audio, and video files are usually much bigger than text files. Therefore, using complicated conventional cryptography to encrypt/decrypt them seems to be rather wasting processing time. Naor and Shamir [1] proposed a new cryptography paradigm, called visual cryptography (VC) or visual secret sharing (VSS), which attempts to recover a secret image via the human visual system by stacking two or more transparencies. In their approach, the secret was partitioned into n shadow images (shares), and each participant would receive only one share. Once any k or more shares of a secret are stacked together, the secret image will be visually retrieved without the help of the computer. That is to say that the secret image will be invisible if the number of stacked shares is less than k. This is known as (k, n)-threshold mechanism.



Extended visual cryptography:

The extended visual cryptography scheme (EVCS) was introduced by Mizuho NAKAJIMA, Yasushi YAMAGUCH.[2], where a simple example of (2,2)-EVCS was presented.

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FUZZY PETRI NET BASED E-COMMERCE SYSTEM DESIGN AND ANALYSIS

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Abstract- In today's daily life the online e-commerce based sites are gaining more importance for shopping purpose among more or less every human being. E-commerce based sites are more prone to suffer from various problems, such as lack of maintenance, products in availability, etc. And thus leads to the less profit in their business. In this work we have proposed an approach of handling products in availability by including an feedback mechanism to maintain the stock of products in all time basis. Also in this work we have included fuzzy constraints for maintenance of the web site. Modeling the total approach for handling all types of problems stated above we have used hierarchical modeling approach combined with the concept of Fuzzy Petri net model. Reachability analysis of this model also has been performed to ensure the liveliness or deadlock freeness of the designed model.
Keywords – Fuzzy Petri net, Hierarchical design, Fuzzy constrints, Reachability Analysis.

1. INTRODUCTION

In today's daily life all human beings are mainly motivated to do their shopping via online e-commerce based site. There are various kinds of online websites dealing with various products across all over the world. In website an user may find that a specific product according to his or her requirement is not available in the online E-commerce site. It may have possible that the websites are showing the product as unavailable or out of stock, which is a major problem for the customer across the globe. The excessive sale of a product sometimes can cause the eventual problem of unavailability of product. Excessive sale of any product mainly depends upon the demand of the product throughout the region where the service of online E-commerce site is available. It may happen that a product has been launched and it has gaining popularity . So depending on the quality the demand gets higher among the customers, which may eventually cause rapid sale in a given time period. This is also becoming a headache for the E-commerce organizations as time to time they are failing to fulfill the customers demand as they are having shortages of that specific product.

Besides the unavailable stock problem in any website there is another important problem of regular maintenance and regular updation in variety of products. As there are various systems all over the world such as windows, android, IOS and others. They are updating themselves to make the customer experiences better and better. So it is a burden for the online E-commerce websites that they should also be update themselves as well as for the betterment of the user and online vendor interacting system. As the time changes requirement of customers gets updated from the E-commerce website. But in case the updation takes a huge time which is not preferable for any customer. Hence the websites should update themselves to cope up with the requirement of customers. Maintenance of Ecommerce site is an important aspect for that we have proposed a solution in this work .

For handling the above mentioned problems associated with E-commerce website the Fuzzy petri net model has been used. Also the concept of Hierarchical designing method is applied in combination with Fuzzy petri net concept.

The rest of the paper is organized as follows. Related theory in section II. Proposed work and detailed modeling in section and Reachability analysis are given in section III.Concluding remarks are given in section IV.

2. RELATED CONCEPT

2.1. Fuzzy Petri Net:

Fuzzy Petri nets is a combination of Petri Net and fuzzy logic. Petri Nets are graphical, and mathematical modeling tool usually used for designing and analysis of discrete event systems. From [1], [2],[3],[4] it can be found that how the modeling techniques of Petri Net has been used in various fields such as computer science, automation and computer integration manufacture. The formalized definition can be found in [2], [3], [5].There are various types of Petri nets are available such as colour petri net, time petri net, Logical petri nets, Fuzzy petri net etc. In [6] the application of colored petri net, in [7] application of logical petri net, in [8] application of stochastic petri net cn be found. Now there are one interesting class of petri net is available called Fuzzy Petri net. The term "fuzzy logic" emerged in the development of the theory of fuzzy sets by

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Recovery of TSV Based 3D IC

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Abstract: In recent years Through-silicon-via (TSV) based 3D integrated circuit (3D IC) has emerged as an important research area. But due to some manufacturing defects there may have some defected TSVs. To solve this problem it is needed to replace faulty TSVs by redundant TSVs. Allocation of redundant TSVs to a group of functional TSVs is an attracting solution to recover TSVs faults. In this paper we have addressed an approach to allocate redundant TSVs to a group of functional TSVs and to replace defected functional TSVs by the redundant TSV

Key words: Recovery, Redundant TSVs, Multiple dependencies.

1. INTRODUCTION

Three dimension integrated circuit (3D IC) is gaining significance attention in semiconductor industry. A 3D IC is formed by different active device layers stacked one above another and these different layers are connected through a vertical connector known as through silicon via (TSV). TSVs are used as vertical inter connector so that they can act as a single device to achieve improved performance like reducing power consumption, smaller footprint, shorter wire length and heterogeneous integration than two dimensional integrated circuit (2D IC) [1]. During manufacturing of 3D IC different types of errors can occur in TSVs [2]. TSVs defect may reduce the yield because a single TSV defect may paralyze the whole chip, so a recovery mechanism is very much essential to overcome TSV faults and to make the chip functional.

To increase the yield of 3D IC, use of redundant TSV is considered as an attractive solution. A redundant TSV is used to replace a faulty functional TSV so that signal can be rerouted through redundant TSV from lower die to upper die. One of the methods to implement the redundant TSV is to form a group of functional and redundant TSVs. The idea of grouping of functional and redundant TSVs is presented in [3, 4]. In [5], it has been shown that the best group ratio of functional and redundant TSV is created depending on available numbers of multiplexers (MUXs). But in [5] the wire length required to reroute the signal has not been considered. Hence, we focus on providing higher repair capability. The work is also based on utilizing redundant TSVs. Regular and redundant TSVs are partitioned into groups using a specified group ratio (regular-to-redundant), where each group can have multiple spare TSVs and multiplexers are used to reroute the signals through a redundant TSV in case defective TSVs exist in that group. Due to the allocation of multiple TSVs in a group, the repair capability is significantly increased. Also in our work, a group may have more than one redundant TSV; so we use inner spiral search algorithm to find out the nearest redundant TSV for replacing faulty functional TSV. In this manner we can reduce the required wire length.

The rest of the paper is organized as follows. Section 2 describes the previous work related to use of redundant TSV. Section 3 describes problem we have considered. Section 4 describes proposed method and an illustrative example is presented in section 5. Section 6 describes experimental results and comparison with others' works and finally section 7 concludes this paper.

2. PRIOR WORK

As of now there is no public data of TSV failure rate. This failure rate varies due to various parameters like different foundries, maturity of TSV technology, height/width, pitch size etc. But TSV process technology has advanced significantly in recent years.

To improve 3D memory product, Samsung presented [6] a TSV redundancy strategy. In [6] two redundant TSVs and four functional TSVs are clubbed together to form a group. In this method only two faulty TSVs can be replaced as there are only two redundant TSV present in this group.

Hsieh et al. [7] proposed an architecture of TSVs that contains one spare TSV to form a TSV-chain. If there is 'n' number of functional TSVs and one spare TSV, then the redundancy ratio would be 1: n and it can tolerate only one TSV fault. In [8], it is shown that an architecture for uniformly distributed TSV architecture where a grid of all TSVs is formed and if any fault occurs then the signal will be rerouted through nearest TSV of that TSV grid. In [9] NoC link is used for n × n TSVs grid. Here, to overcome the fault row or column is added. Suppose a redundant column is added, so each spare TSV is added to its corresponding row so that it can repair any one of faulty TSVs of that row.

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MODELLING OF AIRTRAFFIC CONTROLLING USING PETRINET

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Abstract – This paper deals with the use of Petri nets in modeling air traffic network and designing appropriate control logic for it to avoid collision. Here, the whole air network is presented as a combination of the elementary models – zones and sensors within the aerospace. We here design an air traffic controlling model (ATC) to ensure safety of the air space network. In this research work, we have actually introduced constraints at the signals in the air traffic control. These constraints ensure safe working of safe traffic in air.

Key word: Petri net, ATC, Safeness

1. INTRODUCTION

Petri net is a formal modeling technique and consists of places, transitions and arcs directed from either places to transitions or transitions to places, representing flow relations. Pictorially, places are drawn as circles and transitions as boxes or bars (Figure 1). Arcs are labeled with weights. Labels for unity weights are generally not given. A place from which a directed arc goes to transition is called input place of that transition. A place, to which there is a directed arc from a transition, is called output place of that transition. A Petri net is given a state by marking its places with tokens. A marking M is a function [9] that assigns to each place a non negative integer representing number of tokens at that place. In graphical representation, black dots in circles denote tokens in places. Petri Nets May formally be defined as A Petri net is a 5-tuple - (P, T, F, W, M 0) where:
P = {p1, p2, pm } is a finite set of places,
T = {t1, t2, . . . ,tn } is a finite set of transitions,
F ϵ (P x T) U (T x P)} is a set of arcs (flow relations),
W: F → {1, 2, 3, . . .} is a weight function,
M0: P → {0, 1, 2, 3, . . .} is the initial marking,
P ∩ T= Ø and P U T ≠ Ø .where, (P x T) and (Tx P) denotes the ordered pair of sets P and T.
By changing distribution of tokens on places the occurrence of events (transitions) may be reflected. The flow of tokens in Petri net is governed by the following rules. A transition t is said to be enabled if each input place p oft contains at least the number of tokens equal to the weight of the directed arc connecting p to t.

2. RELATED WORK

Petri nets are used for a very wide variety of applications. Especially they are well-suited for systems those are concurrent, asynchronous, distributed, parallel and nondeterministic [1]. In [6], the author presents how timed Petri net is used to model the GPRS charging system and to analyze its performance when the system works in the normal status and how it handles the maximum supportable busy hour call attempts of the GPRS network.[7] also depicts application of timed Petri net to model traffic signal control where two separate subnets are designed for signal indications (green, yellow, and red)and the transitions between indications (one light becomes red before another becomes green).Besides these, Petri nets have been successfully applied in modeling and performance analysis of communication protocols, flexible manufacturing systems, sequence controllers, distributed-software systems, distributed database systems, multiprocessor systems, fault-tolerant systems, programmablelogic and VLSI arrays [1] etc. Using Petri

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APPROXIMATECOMPUTING: ERROR TOLERANT ADDER

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Abstract: Approximate Computing is a specific technique through which the calculation & computations are done in an approximated way but properly and efficiently. In recent years this technique has become a well-known procedure. It relies on the ability of many systems and application to self-heal or to tolerate some loss of quantity or optimality in the computed result. The main idea is to exploit the inherent error resiliency or error tolerance of the system to achieve energy efficiency or trading accuracy with energy consumption. In most of the cases some performance improvements like faster operations, area reduction etc also happened. In the approximate computing the final result is approximated, not the exact value of accurate result we get but it is very faster in the calculation & energy efficient than that of traditional computing. For an example in a normal adder the accurate result of addition is been generated but it takes long time to calculate it and also generate much more heat that may damage the components. But in the Error tolerant adder (Approximate Adder) the result of addition is in approximated form but the time of calculation is lesser than before & the process is also energy efficient , heat formation is also less so longevity of components also high in this case. Another perfect example for the approximate computing is approximate signal processing, which is the utilization of incremental refinement. So it is evident that trades off allows approximate computing to handle tasks beyond what we can do in traditional computing. There are different levels of design abstractions where approximate computing methods can be implemented. In this paper we have discussed the process & method of working of Error Tolerant Adder in details and also the process of approximation in brief.

Keywords : Error Tolerant Adder , Traditional Computing , Normal/Full Adder , Accurate Section , Inaccurate Section , Energy Efficient , Longevity , Time of Computation

1. INTRODUCTION

Approximate Computing is a computation whichReturns a possibly inaccurate result rather than a guaranteed accurate result for a situation where an approximate result is sufficient for a purpose. One of the example of such situation is for a search engine where no exact answer may exists for a certain search query hence many answers are acceptable. Similarly occasional dropping of some frames in a video application can go undetected due to perceptual limitations of humans. Similarly in approximate adder the final result is in approximated form [1]. It is based on the observation that in many scenarios although performing exact computations require large amount resources allowing bounded approximation can provide disproportionate gain in performance and energy. The key requirement in approximate computing is that approximation can be introduced only in non-critical data. This is what the approximate computing is introduced [2].

2. BRIEF OVERVIEW ON ERRORTOLERANT ADDER

An Error Tolerant Adder is an approximated adder which can do the addition of numbers by using the process of Approximation. It can calculate the final result much more faster than that of any traditional adders (half/ full adders) . Some steps which are mandatory in traditional adders are not required to be performed so required energy for computation is also less , moreover the heat formation of the circuitry is also low so the longevity of the components are very high in this type of adders[1][4] .

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TEXT DETECTION FROM CAMERA CAPTURED IMAGE AND VIDEO

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Abstract-In recent years, with increasing popularity of portable devices for capturing images,text extraction, etc.Extraction of text information from images or scene involves detection, localization, tracking, segmentation, enhancement and character recognition. But variations involved in text such as font style, size, orientation, alignment and illumination effect, as well as low image contrast and complex background details make text extraction from image more difficult job.Text in video and images is an extremely important feature to extract summary knowledge of video or image. But sometime it happen that few text components feel unnecessary, and so various methods have been proposed till a day to detect, and extract the text out of image and video. This paper performs covering survey a large area of various techniques available for text detection and extraction from images and video and images automatically to create visually plausible output like videos/images without any of the embedded text..

1. INTRODUCTION

Text from images or videos is an important applications in many research field like document processing [1, 2], image indexing, video content summary [3–5], video retrieval [6], video understanding [7], and since including.Texts embedded in an image or a frame originally capture from camera .The most important media contexts such as player's name, title,creation date, story introduction,scene text etc. including.

Now a days a large amount of videoes or lecture videoes are produce every day.Students can search a specific portion of video may get by video searching.for example we can say that NPTEL site has large no. of lecture videoes are available.Students can download it or search it directly.Suppose a student needs specially TCP/IP part.But he has to be browse all the video.Because he dosenot know in which section TCP/IP videoes are available or it may reside in any section. And each video size is 60 minute.Almost 40 lecture videoes are available.So,It is very tought job to locate the exact position of the video in a desired time.So,student has to individually browse through each of the choosen videoes to find the portion where TCP/Ip protocol is discussed.If the student is not familiar with the area or if the topic is very specific or particular the student may not be able to decide the videoes to be scrutinized.A very big amount of textual metadata will be created by using OCR and ASR(automatic speech recognition) which provide the contain of the lecture.

Digital video has become a popular storage and exchange medium due to rapid development in recording technology. Videotaping of lecture video is more common e-Learning. A number of universities and research institutes are taking the opportunity to record their lectures and publish them online for students. As a result, there has been a lot of multimedia data are available in on Web. Hence, for a user it is nearly impossible to find desired videos without a search function within a video archive.

Content-based video retrieval have a very big range of applications such as quick browsing of video folders, analysis of visual electronic commerce, remote instruction, digital museums, news event analysis, intelligent management of web videos (useful video search and harmful video tracing), and video surveillance also

2. RELATED WORK:

There are several technique to detection ,localization and extraction of text from image or videoes.Here we discuss some proposal to text detection .Wonjun Kim et. al. has proposed a novel frame for Overlay text detection and extraction from image or video. First the transition map is generated. Then candidate regions are extracted and overlay text regions are gets detected on the basis of occurrence of overlay text in each candidate region. At the last localization of overlay text regions is performed by projecting overlay text pixels in transition map and immediately a step of extraction is carried out [4]. X. Chen, J. Yang, J. Zhang, A. Waibel [7], combined 1) multiresolution and multiscale edge detection 2) adaptive searching, 3) color analysis, 4) affine rectification in a hierarchical framework for sign detection with different priority at each phase to handle the text in different orientations ,sizes, color distributions and backgrounds.here they have used affine rectification to improve deformation of the text regions caused by not proper circumstances camera view angle. They extracted features from an image directly rather using binary information for OCR.In this method binary conversion are not required. They proposed a local intensity normalization method to effectively handle lighting variations, a Gabor transform is used to find local

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Text Recognition using Image Processing

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Abstract: The goal of Text Recognition is to recognize the text from printed hardcopy document to desired format (like .docx). The process of Text Recognition involves several steps including preprocessing, segmentation, feature extraction, classification, post processing. Preprocessing is for done the basic operation on input image like binarization which convert gray Scale image into Binary Image, noise reduction which remove the noisy signal from image. Segmentation stage for segment the given image into line by line and segment each character from segmented line. Future extraction calculates the characteristics of character. A classification contains the database and does the comparison. Nowadays it plays an important role in office, colleges etc.

Keywords: Text detection, text segmentation, character recognition, scene image.

1. INTRODUCTION

Nowadays all over digitization technology is used. Text Recognition usually abbreviated to OCR[2][5][14], involves a computer system designed to translate images of typewritten text (usually captured by a scanner) into machine editable text or to translate pictures of characters into a standard encoding scheme representing them. OCR began as a field of research in artificial intelligence[24] and computational vision[26]. Text Recognition used in official task in which the large data have to type like post offices, banks, colleges etc., in real life applications where we want to collect some information from text written image. People wish to scan in a document and have the text of that document available in a .txt or .docx format.

2. PRIOR WORK

Preprocessing is the first step in the processing of scanned image[1][9]. The scanned image is checked for noise, skew, slant etc. There are possibilities of image getting skewed with either left or right orientation or with noise such as Gaussian. Here the image is first convert into grayscale and then into binary. Hence we get image which is suitable for further processing.

After pre-processing, the noise free image is passed to the segmentation phase, where the image is decomposed into individual characters.The binarized image is checked for inter line spaces. If inter line spaces are detected then the image is segmented into sets of paragraphs across the interline gap. The lines in the paragraphs are scanned for horizontal space intersection with respect to the background. Histogram[13] of the image is used to detect the width of the horizontal lines.Then the lines are scanned vertically for vertical space intersection. Here histograms[13] are used to detect the width of the words. Then the words are decomposed into characters using character width computation.

Feature extraction follows the segmentation phase of OCR[2][5][14] where the individual image glyph is considered and extracted for features. First a character glyph is defined by the following attributes like height of the character, width of the character.

Classification is done using the features extracted in the previous step, which corresponds to each character glyph. These features are analyzed using the set of rules and labeled as belonging to different classes. This classification is generalized such that it works for single font type. The height of the character and the width of the character, various distance metrics are chosen as the candidate for classification when conflict occurs. Similarly the classification rules are written for other characters. This method is a generic one since it extracts the shape of the characters and need not be trained. When a new glyph is given to this classifier block[10] it extracts the features and compares the features as per the rules and then recognizes the character and labels it.

Fig 1.Flowchart of Text extraction process

3. ALGORITHMS

1. Start

2. Scan the textual image.

3. Convert color image into gray image and then binary image.

4. Do preprocessing like noise removal, skew correction etc.

5. Load the DATABASE.

6. Do segmentation by separating lines from textual image.

4. RELATED WORK

Development and progress of various approaches to the extraction of text information fro m the image and video have been proposed for specific application, including page

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Monitoring Suspicious Discussions on Social Media Case Study

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Abstract: The goal of data analysis is to selecting words from the social media like “face book”, “twitter”, “Orkut” etc. The words are analyzed using algorithm like c4.5 or with any other algorithm, the patterns are judged to discover that whether the word or comment can create any negative impact or not. It is the nature of some people making suspicious discussions and sometimes they cross their limits and this may create havoc in the society. Monitoring these staffs very carefully & effectively is necessary. The steps involve collecting data from social media known as Data Mining, analyzing them with some negative & positive words which are affecting peoples is known as Data Analysis, making decision with some effective Algorithms, & lastly Monitoring them carefully. It’s become much more helpful now-a -days to watch criminal activities and to deal with cybercrime.

Keywords: Data Mining, Data Analysis, Algorithms, Monitoring *et.*

I. INTRODUCTION

In recent days people are addicted to the social media like anything, it has become the part & parcel of our life. And we have started using it as a live platform to express our feelings, opinions, promotions of the current events on any topic. Fraud or misguided people doesn’t leave any space to spread criminal activities & social media is one of the popular medium of them. Data mining & Data analysis is the technique by which we can keep eyes on social media. The process includes
mainly four steps – Data Mining

- Data Analysis
- Making Decision Tree
- Monitoring them

II.LITERATURE SURVEY

DATA MINING[3][6] is the first step of data analysis. It is a process of discovering patterns of datasets. Main goal of data mining is to extract the information from the dataset and to give it a proper structure for further use. So, collecting data and giving it a understandable structure by extracting it’s proper meaning, up to this part is done in the first step of data analysis, i.e. data mining.The term "Data mining" was introduced in the 1990s, but data mining is the evolution of a field with a long history.
Data mining roots are traced back along three family lines: classical statistics, artificial intelligence, and machine learning.Data mining is a data analysis approach that has been quickly adapted and used in a large number of domains that were already using statistics.
Next step **DATA ANALYTICS**[5]is a method in which data is collected and organized so that one can derive helpful information from it. In other words, the main purpose of data analysis is to look at what the data is trying to tell us. For example, what does the data show or do? What does the data not show or do? For Cane, will his data show that there are more young hunters out hunting deer each year? Or, will it shock Cane and show that more young hunters are hunting bears? There are many different methods of collecting data. It is the process of cleaning and modifying a data or a dataset to find out useful information. In this step we

Congestion Control in VANET with Time Synchronization Approach and by Controlling Number of Messages

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Abstract – The main objective of congestion control in VANET is to best exploit the available network resources and to minimize the congestion in the network. In this context, we present a congestion control approach, based on time synchronization approach reducing number of messages, to ensure reliable and safe communication within VANET. It supports discarding of similar types of messages and time synchronization.

Keywords –SCH, CCH, RSU, CA, V2V, V2I.

1. INTRODUCTION

Congestion control is an important research issue to ensure safe and reliable vehicle to vehicle (V2V) communication by using the limited resource available in vehicular ad-hoc network (VANET). Each vehicle in VANET is a node which is able to transmit its own message and can receive messages from other vehicles. VANETs are composed of vehicles equipped with advanced wireless communication devices without any base stations. Each vehicle equipped with VANETs device will be a node in the ad-hoc network and can receive and relay other's messages through the wireless network.

A congestion control approach as proposed in [1] considers dynamic priority based scheduling. The service messages are scheduled in control channel if it is free. But the authors have not suggested the message format. Moreover the performance analysis is not presented graphically in [1].

A Cooperative Scheme for service channel (SCH) reservation is proposed in [2]. According to Wireless Access Vehicular Environment (WAVE) standard, the safety messages are carried over a dedicated control channel (CCH) while non-safety messages are delivered over one of a set of available service channel (SCH) [2]. But in [2] there is a possibility of bandwidth wastage when the SCH is overloaded and CCH is idle.

Unlike [1] the performance of the proposed scheme is evaluated and presented graphically. Unlike [2] the proposed scheme considers the transfer of messages from service queue (SQ) to control queue (CQ) when SCH is overloaded and CCH is free to avoid misuse of bandwidth and transmission delay.

The objective of the proposed scheme is to minimize the channel congestion and to revoke misbehaving vehicles from VANET. The scheme in [3] aims for the reduction of channel congestion. The VANET in that proposed scheme is a hierarchy having certifying authority (CA) at the root level, road side units (RSUs) at the intermediate level and vehicles at the leaf level. Each vehicle has an electronic license plate (ELP) in which the encrypted vehicle identification number (VIN) of the vehicle is embedded by the vehicle manufacturer. Each vehicle is equipped with global positioning system to know its current location.

This scheme supports V2V communication of safe and unsafe messages among authentic vehicles. It also supports vehicle to infrastructure (V2I) communication of unsafe message among authentic vehicles and RSU. The priority of safe messages is assumed as higher than the priority of unsafe messages to disseminate the safe messages among vehicles without delay. The ELP of a vehicle broadcasts (as per IEEE P1609 and IEEE 802.11p) the encrypted VIN after entering into the coverage area of a new RSU. The new RSU verifies the authentication of the vehicle. It assigns a digital signature to the vehicle as a valid key if the vehicle is authentic. Each authentic vehicle includes its digital signature in the message format which helps to prevent the unauthentic vehicle from participating in V2V and V2I communication. Each RSU revokes the misbehaving vehicles from its coverage area without which antisocial and criminal behavior jeopardizes the benefit of the system deployment.

A control queue (CQ) is maintained for keeping safe messages and a service queue (SQ) is maintained for keeping unsafe messages at each vehicle. The length of CQ and SQ at each vehicle is assumed as variable and it depends upon the number of safe and unsafe messages. The duplicate messages are discarded from CQ to minimize channel congestion.