Kavita Agrawal | Dr. Halima Sadia | Ankita Srivastava

COMPUTER SCIENCE & ENGINEERING

AARGON PRESS

Computer Science & Engineering

Editors

Kavita Agrawal
Dr. Halima Sadia
Ankita Srivastava

Integral University, Lucknow (U.P) INDIA

AARGON PRESS
New Delhi

Computer Science & Engineering

Kavita Agrawal, Dr. Halima Sadia and Ankita Srivastava

Published by
Aargon Press
EG-130, Inderpuri,
New Delhi-110012, India
Tel.: +91-11-9958121300
Email: info.aargonpress@gmail.com
Website: www.aargonpress.com

Disclaimer:

ISBN: 978-93-94070-54-7

Printed at: Aargon Press, New Delhi

TABLE OF CONTENTS

INTRUSION DETECTION AND PREVENTION IN MANET USING ARTIFICIAL IMMUNE SYSTEM

Dr. Mohd Akbar, Ehteshaam Hussain
Department of Computer Science & Engineering
Integral University, Lucknow, India

In the current scenario, everything has become accessible with the growth of technology. Looking back into the past, one can find that there has been a paramount change in the technology and advancement in IT services. These advancements have changed the perspective and objectivity of the internet world connecting to every corner of the globe including wired and wireless networks. The Internet and mobile applications are at the center of today's world. As the technology grows security concerns also become more challenging. With the evolution of numerous online services and technologies, various Security attacks took place within the network. Some A.I. based strategies are highly prominent in dealing with unauthorized and unwanted nodes accessing the wireless Adhoc network to cater to the security threats in the MANET. Using Artificial Intelligence approaches, the technique provided here tries to detect the presence of malicious nodes in the MANET and thereby preventing the system from such security attack. A mobile ad hoc network (MANET) is a wireless and self-configured network. The node in the network is mobile in nature. So due to mobility in nature, it is infrastructure less architecture because they are not stable in terms of their positions. And that's why it is also a topology-less system due to the undefined position of nodes in an ad-hoc network. In the absence of a permanent topology, there are a lot of security concerns. Like this no secure physical boundary to define the network area. In the absence of a secure boundary, it's vulnerable to a different type of malicious attack.

To cope up with this problem an approach based on the artificial immune system and native search is used to detect the malicious nodes and then corrective measures is initiated to recover the system from such an odd situation. To implement this concept and IDS & Artificial Immune System are used for the detection, prevention, and self-

EMERGENCY VEHICLE PRIORITY BASED SYSTEM

K.C. Maurya, Sarfraz Ahmad
Department of Computer Science & Engineering
Integral University, Lucknow, India

Every country's vehicular traffic is increasing, growing, and there is terrible traffic congestion at intersections. In the current case, most traffic lights have a fixed light sequence, so green light sequence is to determine with-out taking priority vehicles into account. As a result, priority crews such as police cars, ambulances, fire engines are still unable to perform, get stuck in traffic and come in late, which can result in the loss of valuable property and life, which does happen on occasion. The green light sequence is evaluated given the current state of traffic, without taking into account the existence of emergency vehicles. This chapter presents a mechanism for scheduling emergency vehicles. It is provided to important such as access control protocol to convey emergency vehicle information to the Traffic Management Center (TMC) with time delay and to all alerts while using GPS techniques for acquiring emergency vehicle information. Only then is the emergency vehicle quickly dispatched, and the destination is reached on time. It would be helpful in the future for the prominence of casual vehicles.

2.1 INTRODUCTION

In every intelligent traffic management system, traffic light control is critical. In traffic light monitoring, the sequence of green lights and the length of green lights are the two most significant variables to consider. Most traffic lights in many countries include fixed light sequence and light time duration. Priority crews methods, but at the other hand, are suitable for secure or normal traffic, not for dynamic traffic. In the present state of operation, the sequence of green light is established with-out taking into account the possibility of the presence for emergency priority vehicle. As a response, emergency vehicles such as, police cars, fire trucks, ambulances and other types of emergency vehicles wait in traffic points at intersection, avoiding their arrivals at particular result and destination in the loss of life and

A FRAMEWORK FOR SECURITY PREVENTION FROM VARIOUS ATTACK IN ON LINE E-TRANSACTION

Mohd Haroon, Mohammad Salman Husain
Department of Computer Science & Engineering
Integral University, Lucknow, India

Security in various E-commerce Applications includes an efficient framework in Information Security especially in Computer Security, Data Security, and other online transactions in E-commerce applications. Security in E-Commerce application plays an important role for the secure and scalable transaction which includes various dimensions such as security integrity, Confidentiality, Non-repudiation, Privacy etc. Hence for the Security of Online Transactions in E-Commerce based application various Security algorithms are implemented. Although these Security algorithms are efficient and provide Security from various attacks Data Storage during the transactions and Computational time of the algorithms is also important. The existing architecture proposed for the security of online e-transactions in web applications provides security from different attacks and is efficient in terms of computational parameters, but there are certain issues which need to be overcome such as: Security Prevention from different attacks during Online Transactions in Web Mining especially in E-commerce Applications, Increase use of Computational Cost at the Client and Server Side. The Proposed framework provides Security prevention from various attacks especially in IoT. The methodology implemented here works on the basis of authenticating the validity of the User by allocating a challenge value and hoping that our proposed framework will be more effective and efficient. E-commerce is today's world is playing an inevitable role. As much as technology makes things easier for us, it makes us open to online attacks. Say for a banking transaction, all we must do is login to our account and do the transaction. Currently, financial sites use static passwords, which are easier for customers to use. These can also potentially put the user's account at risk. Given enough time and a few attempts, an attacker can easily access a login. Static passwords can be vulnerable to attacks such as shoulder-surfing, dictionary attacks, and so on. By constantly altering the password, as is done with a one-time password, this risk can be greatly reduced.This system with a different perspective of

AUTOMATIC DRIVING SYSTEM BY RECOGNIZING ROAD SIGNS USING DIGITAL IMAGE PROCESSING

Dr. Sheeba Praveen, Afroz Alam
Department of Computer Science & Engineering
Integral University, Lucknow, India

Object Visual Detection (OVD) is a technique used in autonomous driving systems to extract exact ongoing on-street traffic signs. It consists of three stages: finding of things of interest, recognition of identified items, and following of moving items. In this case, the OpenCV instrument provides computation support for diverse item identification. Item finding is a PC innovation linked with image handling and computer vision that manages detecting event items of a certain class in computerized photos and recordings. In vision-based PC applications, item identification is a tough problem. It is common to be able to determine whether or not an object is there in a landscape or photograph. In this chapter, we'll go through processes and approaches for recognize or perceiving objects with various benefits such as efficacy, precision, power, and speed.

5.1 INTRODUCTION

Object Visual Detection (OVD) is one of several new topics in the intelligent transportation system that is rapidly gaining traction. Over the last ten years, this topic of study has been extensively pursued. TSP comprises three phases: detection, recognition, and tracking. Because the results of detection are frequently used in identification and tracking, the ability to accurately identify items of interest is critical in TSP. We'll look at three different types of things in this section: traffic signs, vehicles, and bicycles. a typical on-road traffic scene with recognized items of interest that shows some good instances from the three types listed For each of these three classes, the majority of prior techniques created unique detectors utilizing various attributes.

AN APPROACH FOR DETECTION AND VERIFICATION OF MALICIOUS NODE IN BLACK HOLE ATTACK USING DIGITAL SIGNATURE ALGORITHM

Shish Ahmad, Sana Zeba
Department of CSE, Integral University, Lucknow, India

The rapid growth of technology has changed many things around us. If we talk about network a few years back, it was just used for making the broad permanent network for sharing the resources and in communication, but now we can make the temporary network for our own purpose. There are number of applications in mobile ad-hoc networks. If we compare today's current situation from years back, we'll notice a huge difference in terms of technologies. Today our modern era is significantly dependent on Internet and Mobile applications. Many security attacks occurred in the network. To expand the energy efficiency and reduce the security problem in the MANET network, some techniques are considered for reducing the black hole attack. This technique is identifying the malicious nodes in the Black Hole Attack.

Such an approach may be used to detect the malicious node in the Black Hole Attack. For detection of a malicious node in Black Hole Attack threshold values can be used, and further the node authenticity can be verified by using Digital Signature'. Here a native approach to verify the nodes by using the digital signature standard algorithm is used. This is a reliable approach since all mobile nodes cooperates to detect malicious nodes in a Blackhole attack with the signature of nodes. In case of doubtfulness, demanding a signature from that node makes that node authenticated or malicious. Signatures of node minimize the security issue in MANET network occurred due to black hole attack. This approach decreases the false route in the network and improves the efficiency of the network also.

6.1 INTRODUCTION

In recent years Mobile Ad-hoc Networks (MANETs) have received wonderful consideration because of their self-configuration, no centralized administrator, and self-maintenance

MAINTAINING PRIVACY AND OVERCOMING DUPLICATION IN CLOUD COMPUTING

Anwar Ahmed Shaikh, Zarka Khan
Department of Computer Science & Engineering
Integral University, Lucknow, India

Social networking sites a few years back was just used as a medium for communication for making new friends etc. If today's current situation is compared from years back, one w'll notice a huge difference in terms of how these sites maintaining their data. Nowadays social networking sites stores their data online. Cloud storage technology is one of the most prominent way to store huge amount of data and it can provide the benefits of greater accessibility, maintaining privacy and reliability; rapid deployment; strong protection for data backup, archival and disaster recovery purposes. Today our modern era is significantly dependent on Internet and online storage. To maintain memory efficiently by not storing the same images again in cloud it required a robust method to manage the storage efficiently. An image once uploaded is allotted an id which is unique and the image occupies the space in cloud storage and if any similar image is uploaded again then the reference of the similar stored image is used to upload that image and it does not occupy any memory in cloud. This approach will surely improves memory efficiency and overcomes deduplication overhead and maintains the privacy of the user as well.

7.1 INTRODUCTION

Social media are the sites where trillions of users connect with each other and share their contents with each other. Due to great success of social media sites as number of users connecting with it are increasing at a huge rate and large number of data is shared every second. As data is increasing day by day on social networking sites it has become important to provide users with easy environment so that users can share their contents more efficiently and memory can be used efficiently avoiding data redundancy. Cloud technology is changing

ENERGY EFFICIENT WORKFLOW SCHEDULING FOR GREEN CLOUD

Afsaruddin, Pratiksha
Department of Computer Science & Engineering
Integral University, Lucknow, India

Resource Allocation (RA) in cloud computing involves allocating necessary resources to the respective cloud applications through the internet resource allocation. It restricts services when distribution has not been supervised precisely. Resource provisioning challenges this defect by providing service providers to handle resources for each single module. RAS(Resource Allocation Strategy) is needed for combining cloud provider exercises for utilizing and assigning acute resources present within the cloud environment. It has limitations to address cloud application problem. It needs measure and type of resources needed by each application to finish clients' work. Workflow is stated as the business process automation, either part or whole; it is when tasks, information, or documents are transferred from one performer to the other for action, following certain technical rules. Workflow scheduling problem is a very dynamic and random in nature. They lack prior knowledge about randomness due to unpredictable workloads, and hence, execution time and cost factors which makes this problem to be in the class of NP-hard problem, being intractable in polynomial time. Various heuristic and meta-heuristic methods are used to get an optimal schedule with polynomial time complexity. The tasks of the workflow must be executed in a specific order so that dependency constraint is handled.

8.1 INTRODUCTION

Cloud computing paradigm promises reliable delivery of services through data centers built on virtual computation and storage technologies and infrastructure. It allows consumers to access data and applications, process their jobs using the cloud environment. In this chapter, firstly a brief overview of cloud computing covering its introduction and cloud computing service models are elaborated subsequently followed by discussion on application and open challenges related to cloud computing are presented.

AN APPROACH TO SMART PARKING ALGORITHM USING ANT COLONY OPTIMIZATION AND DECISION TREE ALGORITHM

Mohammad Arif, AnkitaYadav
Department of CSE, Integral University, Lucknow, India

This model is created to deal with the main problem of traffic congestion and road accidents that are caused because of improper parking management. . Hence, cities must have a well-managed parking system. In the past various researches has been done to design a suitable smart paring algorithm. However, each research had its pros and cons. Our research leads to a smart algorithm that is secure and is convenient enough to develop a system that can manage the available slots and can notify the users about the available parking slot beforehand to the client. The result analysis clearly shows that the algorithm designed is more accurate than other algorithms used in the past. A model has been designed using ACO, decision tree, and GPS mapping. The idea of working on this research was to provide a cost-effective solution, helps people on large scale and maintains the laws and order.

9.1 INTRODUCTION

9.1.1 Why Smart Parking System

As per the Indian Ministry, the governing body, of Road Transport and Highways, that maintenance and administration the rules and laws relating to transport ha reported increasing the in the transportability and proficiency of the road transport system in India. Moreover, in referring to the aforesaid statistics provided by the ministry of India, the present-day transportation framework and vehicle park solutions are expected to be restricted in defending the incursion of the automobile on the road.

India is ranked 2nd in terms of having the largest population in the world. However, where the rise in population is the root cause of many problems like extreme poverty, unemployment, shortage of land, pollution, and so on, it is also responsible for an increase in private vehicles and that leads to PARKING PROBLEM in India. Vehicle drivers are not aware of the vacant space in the parking areas and hence they abruptly park their vehicles on the road which further leads to congestion and traffic. As per the track of the records the

DESIGNING A BIG DATA MODEL TO IMPROVE LIVING LIFE IN SMART CITIES

Dr. Manish Madhava Tripathi, Mohd Shameem
Department of Computer Science & Engineering
Integral University, Lucknow, India

Welcome to the era of big data, as it is well known that, this is the era of big data and every model in this era is directly or indirectly by utilizing the concepts of big data. The most important aspect of big data is to handle volume, velocity, and Variety. While implementing the concept of the smart city these features of big data will play an important role in efficiently managing various services. Transportation can be handily overseen with the aid of Big Data. A jam or congestion on road is a very weary thing for commuters. The analysis of vehicular movement-related data work can be done to address this issue effectively. Big Data will also serve this purpose. In this chapter, all data analytics-based models to tackle these problems have been discussed. Techniques of big data in traffic-related data segments in urban cities have voluminous in nature and the size of data will decrease as traffic density will increase. The aim of this chapter is to estimate the conduct of the urban traffic of any urban city. The strategy of the chapter comprises important occasions that influence the progression of the traffic of the city and the utilization of information investigation to prepare with these prominent events to foresee the conduct of traffic. This chapter presents the outcomes in anticipating the conduct of the traffic of the city for seven days.

10.1 INTRODUCTION OF BIG DATA

Big Data is additional data but with enormous size. Big Data may be a term won't to describe a set of knowledge that's huge in volume and yet growing exponentially with time. In short, such data is so large and sophisticated that none of the normal data management tools are ready to store it or process it efficiently.

Simply, big data is very big, more complex data, especially from new data sources. These data sets are so voluminous that traditional processing software just can't manage them. But