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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING



Certificate of Presentation

This is to certify that

Dr. Sahaaya Arul Mary S A

has successfully presented the paper entitled

Geographical Information System-Aided Landmark Recognition System Using Machine Learning

at the

5th International Conference on

Computer Networks and Inventive Communication Technologies (ICCNCT 2022)

organized by RVS Technical Campus, Coimbatore, India

held on April 1-2, 2022.


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International Virtual Conference on
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A Ring Toss game-based optimization-based Routing protocol for Optimal Path Selection in MANET

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Abstract. Nodes in a MANET connect using radio waves, which makes it an ad hoc network. Despite its many advantages, the MANET suffers from several drawbacks, including a lack of dedicated network infrastructure and an unstable topology. Route failures occurred because of the network's uncontrolled node movements that increased energy consumption and delay, as well as limited the node's lifetime. In this research work, to solve these problems by using the Ring Toss Game-Based Optimization (RTGBO) algorithm. RTGBO's major goal is to build an algorithm that mimics the comportment of players and the regulations of the ring toss game. The RTGBO algorithm has no control parameters as its major characteristic. Mathematical models of the suggested algorithm for implementing RTGBO are provided. According to path optimality, delay, throughput, and longevity of the network, the suggested method's performance is evaluated. The results proved that the proposed RTGBO achieved 420s of network lifetime, 2.4s of end-to-end delay, and consumed 12J of energy for node 300.

Keywords. Control Parameters; Mobile ad hoc network; Path Selection; Ring Toss Game-Based Optimization; Mobility; Network Lifetime

Introduction

MANET typically contains a large number of nodes connected via wireless means [1]. Nodes in the MANET network can move continually in nature because there is no centralized management or specific infrastructure [2]. Here, the information is transmitted from one site to another utilizing a wireless node that functions as a router [3]. MANET mobile nodes typically connect without the requirement for base stations. Routes that enable greater connectivity between nodes are also regulated by MANET routing protocols [4]. As smart devices proliferate and transmission speeds improve, the MANET can be used for a wide range of applications [5]. Because the MANET has nodes that can act as routers or hosts, it can be used to communicate during disasters, fire rescue operations, or other situations that demand rapid deployment of communications. As a result of the nodes in MANET being mobile and free to move around, the network architecture changes constantly [6]. After deployment, it is difficult to recharge or replace the nodes' batteries in MANET, which have low-power batteries with limited bandwidth. Therefore, it is essential to take into account the unique characteristics of the networks when building protocols.

Data transmission in a MANET is a difficult task because of its properties such as self-configuration, self-healing, and autonomous mobile nodes. In a MANET, nodes act according to whether or not they want to be part of the network [7].

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Lecture Notes on Data Engineering
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QoS Provisioning in MANET Using Fuzzy-Based Multifactor Multipath Routing Metric



S. Venkatasubramanian, A. Suhasini, and C. Vennila

Abstract Volatile topology is the basic nature of MANET. Haphazardly, the nodes may move which makes and breaks connection between nodes. Because of this nature, providing quality of service (QoS) is a challenging task. For the applications that use real-time data packets delivery, quality of service (QoS) has to be provisioned. This paper discusses a technique to provide QoS in a heterogeneous network with multipath routing is given. The multipath routes are to be discovered primarily using the parameters such as delay, channel occupation, link quality and residual energy. To choose the best routes between the originating node and the target node, a fuzzy logic mechanism is used. This Fuzzy-based multi-parameter and multipath QoS routing (FMMQR) find out the optimal path for data transmission between the two nodes. This technique gives better performance than some of the existing method. The simulation experiments prove our Fuzzy-based multi-parameter and multipath QoS routing (FMMQR) performs better than other methods.

Keywords MANET · Routing · Fuzzy based · Multifactor · Multipath · QoS

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A Sparrow Search Algorithm for Detecting the Cross-Layer Packet Drop Attack in Mobile Ad hoc Network (MANET) Environment

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Abstract: Due to the wide range of applications and ease of deployment Mobile ad hoc networks (MANET) has become increasingly popular. There is no need for a fixed infrastructure in this network. Mobile nodes of this network connection via a wireless channel, making it very vulnerable to various attacks. **Purposes:** The packet drop attack is a famous attack type. The easiest way to cause service denial in such dynamic networks is a packet drop or gray hole attack. This attack reflects the malicious node to be the shortest route and entire packets are received while the designated packets are dropped to provide the user with the wrong service. It is a special type of attack that defends the system and the user from misuse. When a network is attacked, it suffers from network performance. **Methods:** A Sparrow Search Algorithm for a cross-layer packet drop-off attack (CLPDM-SSA) is proposed in this paper. This proposal is used to identify a malicious node within a real-world data acquisition system that was subjected to a packet drop (PD) attack with a cluster-based meta-heuristic detection device. **Results:** NS-2 is used for implementation and the validation is carried out in terms of throughput, Packet

Fruit-Fly Algorithm Based Dynamic Source Routing Algorithm for Energy Efficient Multipath Routing in MANET

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Abstract- Mobile ad hoc network (MANET) performance is critically affected by the mobility and resource constraints of nodes. Node mobility will impact on connecting stability, and node resource limitations will result in congestion, so the development of a routing protocol that promotes quality of service (QoS) in MANET is quite difficult. In particular, frequent interrupting connection may degrade QoS performance in the high-speed node drive scenario, so it is required to build the MANET protocol routing which can be adapted for changes in the networking architecture to support QoS. Therefore, the best suited reactive routing protocol is called Dynamic Source Routing (DSR) protocol, but it suffers from high energy consumption. To minimize this issue, optimization is required and these techniques still degrades the network performance, because single path routing is only supported by DSR. In this research work, multi-path routing is introduced to balance the data transmission by constructing multiple paths with efficient routing. In addition, high energy consumption is addressed by Fruit Fly Algorithm (FFA) to find the optimal values/fitness function for objective parameter (i.e. energy). Each available path, the fitness value is identified and sorted in the best order based on the food finding nature of fruit fly in FFA-DSR. When compared with existing routing protocols, FFA based DSR achieved better performance and implemented by using NS-2 simulator. Nearly 20% of energy is minimized by the proposed DSR-FFA protocol, when compared with existing Ant Colony Optimization (ACO), which is proven by the experimental results.

Keywords:- Ant Colony Optimization; Fruit Fly Algorithm; Dynamic Source Routing; Mobile ad hoc network; Energy Consumption; Multi-Path Routing

I. INTRODUCTION

Another description of wireless network is defined as MANET, which is shipped effectively and based on design [1]. MANETs are independent networks that do not have an infrastructure or a central console. MANET is a network of self-organized and unstructured remote mobile tools [2-3]. Mobile gadgets reflect the network's self-deprecation capabilities without the need for an existing base. These networks are difficult to transmit, scalable, and show better compatibility [4]. Ad hoc mobile networks describe a type of

mobile network that includes remote mobile nodes for communication [5]. Nodes within MANET are set to move at any speed and in any direction as they form unexpectedly. MANET nodes are compared to the path of the target node [6]. MANET is a family of stand-alone mobile terminals that use common multi-hop [7-8] wireless channels without a fixed base. Multi-hop messaging on MANET has been commonly associated with building and implementing a generic network matrix [9-10]. Creates a fairly MANET by cluster-based view and if the algorithm is suitable, it generates the data transfer rate and reduces the default rate [11].

In the MANET system, each node has a high-power consumption. When the node energy decreases, the node is flat. When a failed node has the ability to become the head of a cluster, the node fails like the entire cluster [12]. As a general advanced system, the cluster control system is often used to understand the scaling problem of large single MANETs [13-14]. MANET is created from a set of legally identical nodes using a radio transmitter and receiver, which do not rely on any prototype [15]. In addition, mobile nodes have low power, processing capacity and data transmission resources and require a powerful routing protocol. Additionally, these mobile terminals rely on mandatory battery power [16].

The most important and empirical issue is data parcel routing. Since nodes can enter or exit the network at any time, the terrain changes every time, making it difficult to select a participating node to route packets. MANET faces energy efficiency issues and routing requires additional tool setup [17]. Therefore, in this work, an optimization technique is considered for solving the issues of energy efficiency by finding the optimal route in DSR model. The FFA is considered in this work, which is a swarm intelligence algorithm. This algorithm is easy to adjust for the given problems and uses the less parameters (only energy) as objective parameter to find the optimal path. The simulations are carried out to test the effectiveness of FFA based DSR model.

A Ring Toss game-based optimization-based Routing protocol for Optimal Path Selection in MANET

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FAKE NEWS DETECTION IN SOCIAL MEDIA USING DEEP LEARNING Rengaraj Allias

Muralidharan¹, Ranjani Sampathkumar², Priyanga Subbiah³, Iswarya Gururajan⁴, Dr. Lakshmi Kanthan Narayanan⁵

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Abstract— In today's society, social media plays a critical role in the dissemination of information. It is critical to determine the accuracy of the information being disseminated in order to avoid blame manipulation, misunderstanding, and a negative impact on society as a result of fake news. As more individuals spend their time connecting online through social media platforms, many people are turning to traditional news organizations for information and news. This is because it is less expensive and easier to distribute and comment on. Despite this advantage, established news companies prevailed in the battle for news quality. However, incorrect information is often disseminated on social media for financial and political advantage. The widespread dissemination of bogus news has a harmful impact on society. So, utilizing some machine learning algorithms that study different textual qualities that can differentiate fake content from real, we hope to discover bogus news that has a significant impact on society. We develop numerous machine learning algorithms utilizing various ensemble approaches and evaluate their performance using these properties.

Keywords—TF-IDF, Logistic Regression, Machine Learning, Natural Language Processing, Social Media.

I. INTRODUCTION

The introduction of the World Wide Web and the quick adoption of social media platforms provided the path for new information to emerge, as has been seen. Is it true, however, that all of the news that has been circulated in the media is accurate? Fake news causes erroneous perceptions of some facts, leading to misunderstanding and information manipulation. The introduction of the World Wide Web and the quick adoption of social media platforms provided the path for new information to emerge, as has been seen. Is it true, however, that all of the news that has been circulated in the media is accurate? Fake news causes erroneous

perceptions of some facts, leading to misunderstanding and information manipulation. Machine learning (ML) is a branch of Artificial Intelligence that studies computer algorithms that learn from their mistakes and improve over time. It enables an application to improve its accuracy in predicting outcomes without having to explicitly programmed it using training data. Object recognition, summarization, prediction, classification, clustering, and recommender systems are just a few of the tasks that machine learning models can assist us with. Python's simplicity makes it easier to use in development than other programming languages, allowing you to test techniques without having to build them. Machine learning is used by several businesses. Example, Uber uses algorithms to match drivers with riders. Google uses machine learning to surface the right advertisements in searches. The goal of this article is to integrate fake news detection on social media platforms such as Twitter, Facebook, and WhatsApp.

A count vectorizer or a TF-IDF matrix is used in the suggested system (which compares how often words are used in other articles in your dataset). The best approach for this text classification problem is to employ a Naive Bayes classifier, which is the industry standard for text-based processing. The main goal is to develop a text transformation model (count vectorizer/tfidfvectorizer) and determine which type of text to use (headlines vs full text). The next stage is to extract the most optimal features for count vectorizer or tfidf-vectorizer. This is accomplished by using an n-number of the most often used words and/or phrases, lower casing or not, and, in most cases, omitting the stop word. which is done by removing the stop words, which are common words like "the," "when," and "there," and only using those words that appear at least a given number of times in a given text dataset, using an n-number of the most commonly used words and/or phrases, lower casing or not, mainly removing the stop words, which are common words like "the," "when," and "there," and only using those words that appear at least a given number of times in a given dataset.

IOT-FOG ASSISTED SMART IRRIGATION AND POWER MANAGEMENT SYSTEM IN AGRICULTURE

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Abstract - From the past till the present and the future human survival in earth will depend only on the agricultural products. With the advent of integrating IoT-Fog based technologies in agricultural applications, towards the effective usage of water and power resources which are the primary and essential resource. This system facilitates the smarter way of practicing agriculture concentrating these two precious resources with the aid of various sensor based agricultural practice (SBAP) in order to monitor various parameters like moisture, humidity, on-field water level, temperature etc. This proposed model is equipped with the 360 degree reflector system which is vital in improving the light source or temperature adjustment as required by the plant during needy hours. A unique IoT-Fog based automated agricultural monitoring system is proposed. This architecture is emulated as a prototype model using Arduino and various on-field monitoring sensors. Machine learning is imposed into this prototype model to provide crop based decision making system. In order to use the renewable source of energy this system is equipped with a smart change over mechanism which switches over to the renewable power resource when it is adequately available. And also this model encourages ground level water top-up mechanism for lifting up the water table during flood and rainy seasons.

Index Terms - Internet of Things, On-field Sensors, Smart irrigation, Smart Power Changeover Mechanism, Sensor Based Agricultural Practice.

I. INTRODUCTION

The main fuel for a human to sustain on Earth is food and water are the two inseparable commodities. According to a survey conducted by IWA states that the demand for water will be doubled in next three decades [1]. Since the effect of Day-Zero already made a crucial impact many developed countries; this crisis situation leading towards war of water is not so far. Agriculture plays essential role in our day-to-day life. The traditional Irrigation technique started with Bucket irrigation, where the farmers working with manual method for water pumping to the field crops using buckets for drawing water. As the need for water conservation increased and to increase the productivity (field extension for more cultivation), various irrigation methods are being incorporated into fields. Some of them are listed in the table 1.1.

Even though variety of systems available for irrigation, drip irrigation is found to be more efficient due to conservation of water, provides favourable moisture to the soil, less human interaction, easy incorporation of different technologies etc [2][3].

Various renewable sources are used for generating electric power such as, thermal, nuclear and other renewable sources like solar, hydro, are available these days[4]. The history of power supply for irrigation field started with pumps powered with fossil fuels. As technology develops, the methods to generate power also began to gain advancements.

In time period, the motorized pumps were powered by fossil fuels (diesel, gasoline), either through generators that make electricity, or by transmitting power to the pump through a drive belt and vertical shaft. Additionally, some submersible pumps operate by direct displacement

Power Grid connection can power up an electric pump directly using available renewable energy. However, the reliability, cost, availability and quality of supplies determine the employment of this energy source.

Solar energy may well be one among the simplest ways for farmers to supply energy. Indeed, farmers usually have several large buildings whose roofs are directly under the sun, without being hindered by the shadows of the trees, turning them into an ideal place to settle a photovoltaic system. Therefore, the utilization of alternative energy in agriculture is becoming increasingly popular and therefore the energy produced from this renewable source will be used either on the farm or within the local facility, providing the farmer with a further income.

Traditional fields in embedded systems, wireless sensor networks, control system, automation (including home and building automation) et al. all contribute to enabling the web of Things. Within the consumer market, IoT technology is most synonymous with products per the concept of the "smart home", covering devices appliances that support one or more common ecosystems, and may be controlled via devices related to that ecosystem, like smart phones and smart speakers.

Fog Computing may be a new methodology that gives Cloud services closer to the

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SoCPaR 2021: **Proceedings of the 13th International Conference on Soft Computing and Pattern Recognition (SoCPaR 2021)** pp 226–236

Blockchain Based Fictitious Detection in Social Media

[Lakshmi Kanthan Narayanan](#) , [R. Rengaraj Alias Muralidharan](#), [Ranjani Sampathkumar](#), [Iswarya Gururajan](#) & [Priyanga Subbiah](#)

Conference paper | [First Online: 22 February 2022](#)

48 Accesses

Part of the [Lecture Notes in Networks and Systems](#) book series (LNNS, volume 417)

Abstract

The digital information age has given content creators new avenues to distribute so-called fake news, a new type of propaganda that is intended to deceive the reader. With the extensive ramifications of fake news' rapid propagation, efforts have been undertaken to automate the process of detecting fake news. In this paper, we will concentrate on the fact rather than the real fact, which is the replication of emotion and self-perception in the era of post-truth. Fact is the real time occurrence of the

IoT-GIS Integrated Smart System Towards Baby Monitoring

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Abstract—Considering the present world's scenario, every parent is busy in their job and familial routines. In the case of India, both the parents need to work and look after their babies/infants. So more workload and stress will often be felt in such families especially by the mother or the care taker of the babies. This paper presents an affordable baby monitoring system for such busy parents so that they can ensure the proper care and safety of their babies. This system is based on the GSM technique for sending alert messages to the parents in case of any of the monitoring parameters exceeds certain permissible values. The main aim of this work is to save the time of the parents and provides them the satisfaction of maximum security and safety of their babies.

Keywords— GSM, Baby Monitoring System, Sudden Infant Death Syndrome (SIDS)

I. INTRODUCTION

The baby monitoring system is a kind of alarming system that could detect the movements and activities of the babies and activities and can convey the message about the condition of babies to the concerned authority via a radio or mobile or even a display. They are now thinking about adopting the technological and engineering inventions for getting advantages and benefits in terms of safety issues of their babies. Monitoring a baby continuously is really a tough job as well as it is not possible for the parents to carry out their babies all the time with them especially while working. Most importantly parents do not get surety about their babies' safety in both of the cases. In this perspective, a baby monitoring device can be the best solution to remove the anxiety and stress of the parents. To avoid such cases we are adapting a new method in this system, GSM [1] based infant presence monitoring in the cradle. Internet of Things (IoT) simply refers to a network of objects that are connected to the internet.

II. PROPOSED SYSTEM

The purpose of this paper is to reduce the physical interface of the working class parents with greater reliability, efficiency, better adaptability, security and cost effectiveness. The entire system works with the sole purpose of providing convenience by continuously monitoring every activity of the infant and thereby providing real time details [2] and updates to the parents. The paper has been successfully monitoring the activities which include conditions like movements of infants, Apnea detection, Care taking through recorded voice, Automatic Cradle Swing and Alerts to parents. The system will take the parameters like temperature and the wet condition of the baby's bed using a

moisture sensor. Arduino UNO is used as the microcontroller. It converts the values analog to digital. The values are measured and embedded into the Arduino using the appropriate sensors. The Wifi module is used which is a wireless internet access interface to any microcontroller based on its simple connectivity through Serial Communication. If there is any deviation from the threshold values, an alert message is given to the caretaker. The measured values are stored in the cloud and the values are secured by encrypting [3] the data using a security algorithm.

III. FEASIBILITY STUDY

A. Environmental Feasibility

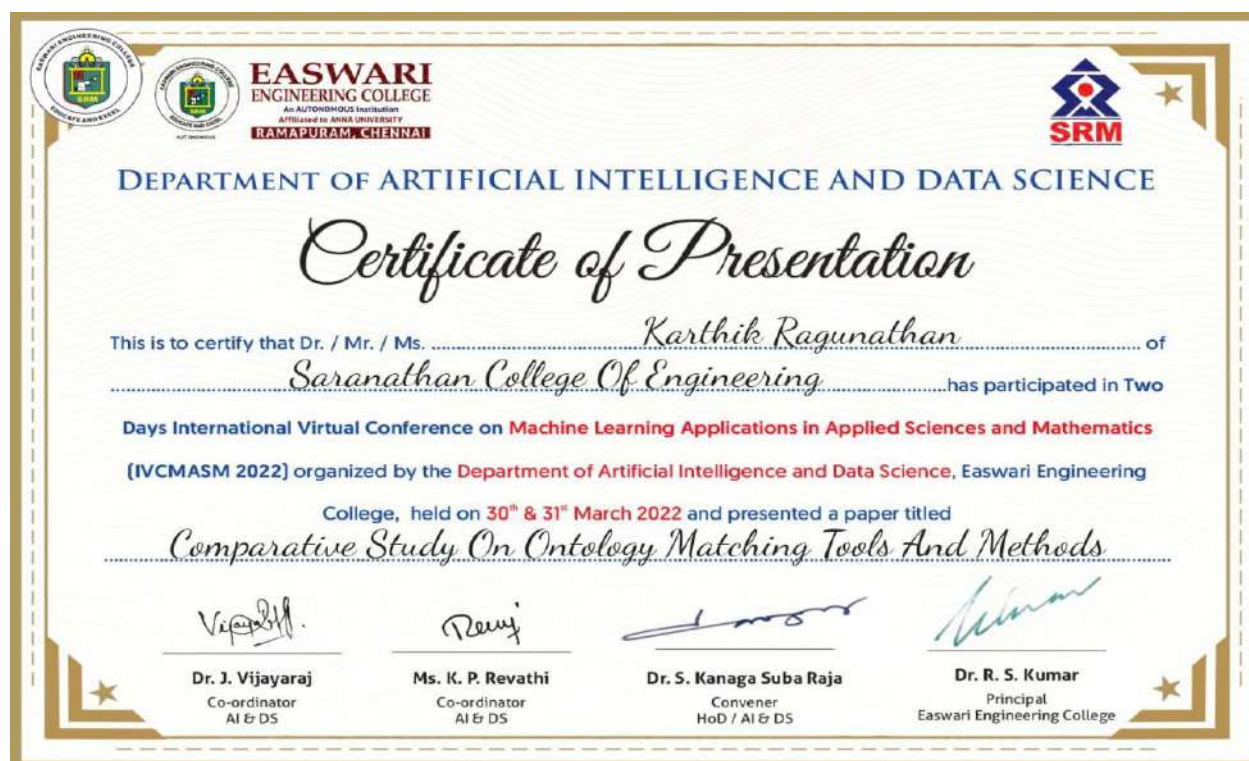
Any successful businesses and practices are distinguished from unsuccessful ones by their entrepreneurial skills and the quality of their product. It is also irresponsible to release a product that is environmentally unsustainable as it is part of our duty as human beings to take care of the planet for ourselves and for future generations. The baby monitoring systems have good environmental sustainability as it is not a detriment to the environment. There are no additional power requirements necessary to run the paper, excluding having access to a powered phone. As long as none of the major components are severely damaged then the paper will likely have a long lifespan compared to the time the paper is actually in use. Due to the nonviolent nature of the usability of the paper frequent disposability should not be an issue. For the times when the product does need to be disposed of, many of the components can be turned into a plant that handles and recycles circuit boards [4].

B. Social Feasibility

The social sustainability is an equally important aspect in any paper or product as it is the driving force behind people's willingness to use or purchase the paper or product. Hopefully people will understand that the paper is for the social purpose of saving babies' lives while also bringing parents a better sense of security at night. These are two factors that are hard to put a price on. SIDS(Sudden Infant Death Syndrome)[4] cases happen around the world and are truly terrible occurrences. If our paper truly works as intended then there would be no social substitute for it since it is an attempt to reduce the number of lives lost and the heartbreak of the families that follows.

C. Economic Feasibility

This work is strongest in the economic sustainability department. The hardware price is very affordable whereas many commercial baby monitors falls anywhere in the range of \$15 to \$180. So the kit comes in on the less expensive side.





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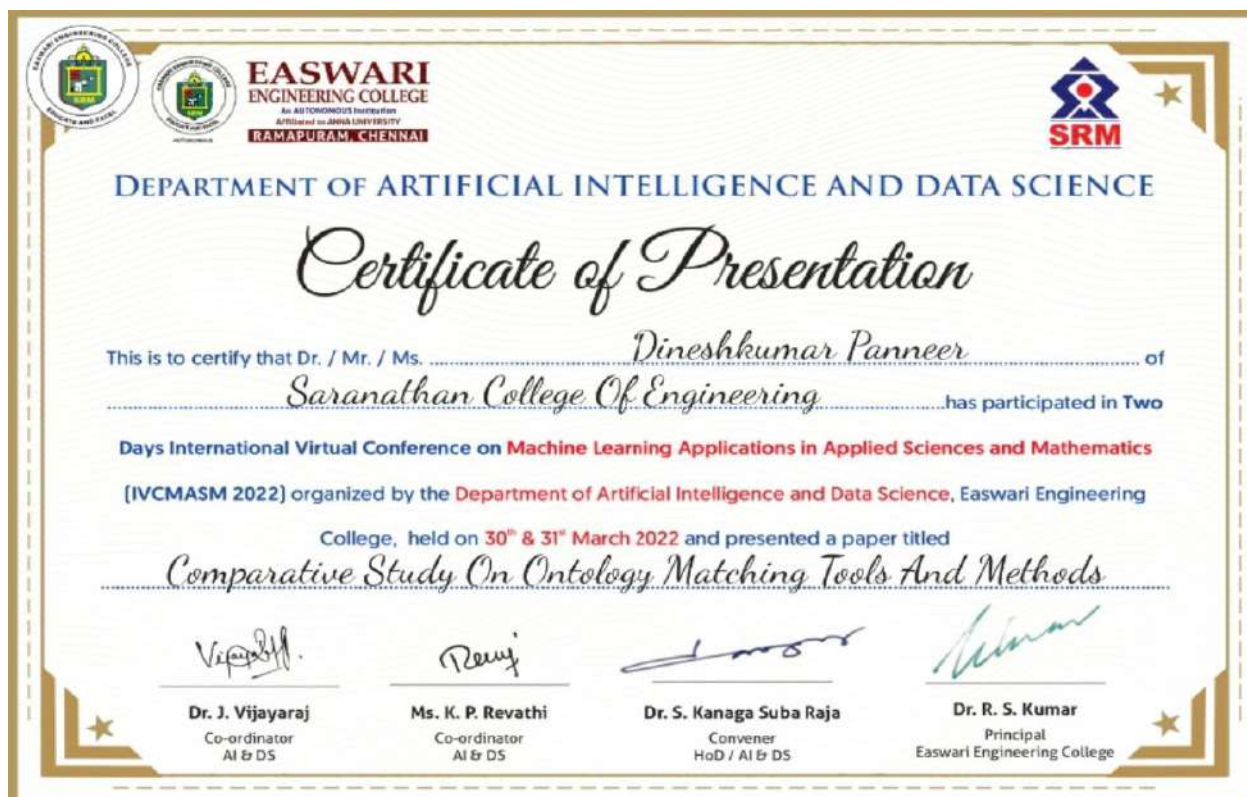
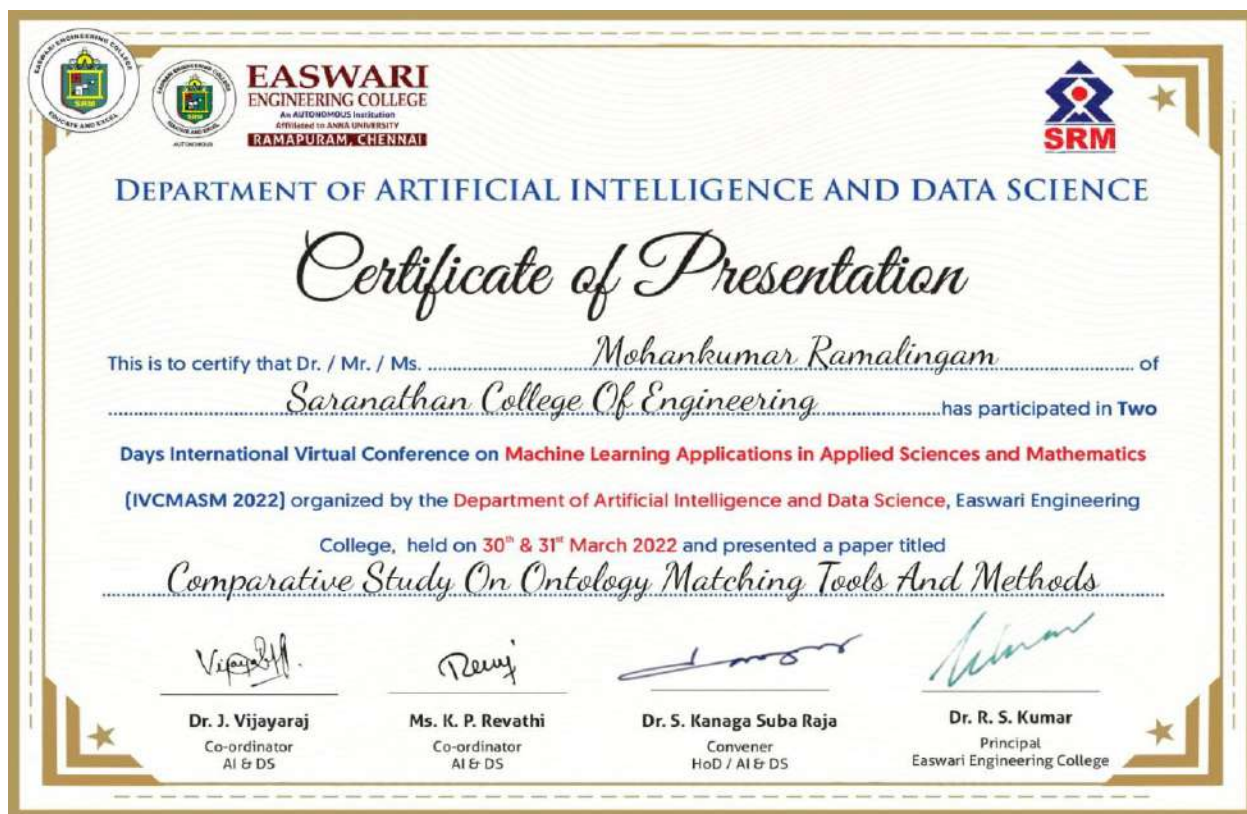
Performance Evaluation in Internet Of Things Dataset Using Machine Learning Based Intrusion Detection System

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Abstract: Many Internet of Things (IoT) applications face significant hurdles in terms of data security. Machine Learning (ML)-based intrusion detection systems (IDS) claim to be effective and accurate at analysing network data and detecting threats. Our suggested technique, n-weighted-univariate feature selection, creates a threshold value that serves as a weight, from which critical features are extracted and then used to machine learning algorithms like support vector machine (SVM) and decision tree (DT). These models were trained using the UNSWNB-15 dataset, which was developed in the Australian Center for Cyber Security's Cyber Range Lab using an IXIA Perfect Storm tool (ACCS). It has a mix of realistic modern normal and contemporary network traffic assault characteristics. Accuracy, precision, and recall were used to evaluate the performance of our suggested model. In DT, the proposed model has a greater accuracy of 96.4 than SVM, which has an accuracy of 89.1.

Keywords: Machine learning, Intrusion detection system (IDS), Internet of Things (IoT), feature selection.





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PAPER TITLE: IoT-FOG ASSISTED SMART IRRIGATION AND POWER MANAGEMENT SYSTEM IN AGRICULTURE

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IOT-FOG ASSISTED SMART IRRIGATION AND POWER MANAGEMENT SYSTEM IN AGRICULTURE

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Abstract - From the past till the present and the future human survival in earth will depend only on the agricultural products. With the advent of integrating IoT-Fog based technologies in agricultural applications, towards the effective usage of water and power resources which are the primary and essential resource. This system facilitates the smarter way of practicing agriculture concentrating these two precious resources with the aid of various sensor based agricultural practice (SBAP) in order to monitor various parameters like moisture, humidity, on-field water level, temperature etc. This proposed model is equipped with the 360 degree reflector system which is vital in improving the light source or temperature adjustment as required by the plant during needy hours. A unique IoT-Fog based automated agricultural monitoring system is proposed. This architecture is emulated as a prototype model using Arduino and various on-field monitoring sensors. Machine learning is imposed into this prototype model to provide crop based decision making system. In order to use the renewable source of energy this system is equipped with a smart change over mechanism which switches over to the renewable power resource when it is adequately available. And also this model encourages ground level water top-up mechanism for lifting up the water table during flood and rainy seasons.

Index Terms - Internet of Things, On-field Sensors, Smart irrigation, Smart Power Changeover Mechanism, Sensor Based Agricultural Practice.

I. INTRODUCTION

The main fuel for a human to sustain on Earth is food and water are the two inseparable commodities. According to a survey conducted by IWA states that the demand for water will be doubled in next three decades [1]. Since the effect of Day-Zero already made a crucial impact many developed countries; this crisis situation leading towards war of water is not so far. Agriculture plays essential role in our day-to-day life. The traditional Irrigation technique started with Bucket irrigation, where the farmers working with manual method for water pumping to the field crops using buckets for drawing water. As the need for water conservation increased and to increase the productivity (field extension for more cultivation), various irrigation methods are being incorporated into fields. Some of them are listed in the table 1.1.

Even though variety of systems available for irrigation, drip irrigation is found to be more efficient due to conservation of water, provides favourable moisture to the soil, less human interaction, easy incorporation of different technologies etc [2][3].

Various renewable sources are used for generating electric power such as, thermal, nuclear and other renewable sources like solar, hydro, are available these days[4]. The history of power supply for irrigation field started with pumps powered with fossil fuels. As technology develops, the methods to generate power also began to gain advancements.

In time period, the motorized pumps were powered by fossil fuels (diesel, gasoline), either through generators that make electricity, or by transmitting power to the pump through a drive belt and vertical shaft. Additionally, some submersible pumps operate by direct displacement

Power Grid connection can power up an electric pump directly using available renewable energy. However, the reliability, cost, availability and quality of supplies determine the employment of this energy source.

Solar energy may well be one among the simplest ways for farmers to supply energy. Indeed, farmers usually have several large buildings whose roofs are directly under the sun, without being hindered by the shadows of the trees, turning them into an ideal place to settle a photovoltaic system. Therefore, the utilization of alternative energy in agriculture is becoming increasingly popular and therefore the energy produced from this renewable source will be used either on the farm or within the local facility, providing the farmer with a further income.

Traditional fields in embedded systems, wireless sensor networks, control system, automation (including home and building automation) et al. all contribute to enabling the web of Things. Within the consumer market, IoT technology is most synonymous with products per the concept of the "smart home", covering devices appliances that support one or more common ecosystems, and may be controlled via devices related to that ecosystem, like smart phones and smart speakers.

Fog Computing may be a new methodology that gives Cloud services closer to the

FAKE NEWS DETECTION IN SOCIAL MEDIA USING DEEP LEARNING Rengaraj Allias

Muralidharan¹, Ranjani Sampathkumar², Priyanga Subbiah³, Iswarya Gururajan⁴, Dr. Lakshmi Kanthan Narayanan⁵

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Abstract— In today's society, social media plays a critical role in the dissemination of information. It is critical to determine the accuracy of the information being disseminated in order to avoid blame manipulation, misunderstanding, and a negative impact on society as a result of fake news. As more individuals spend their time connecting online through social media platforms, many people are turning to traditional news organizations for information and news. This is because it is less expensive and easier to distribute and comment on. Despite this advantage, established news companies prevailed in the battle for news quality. However, incorrect information is often disseminated on social media for financial and political advantage. The widespread dissemination of bogus news has a harmful impact on society. So, utilizing some machine learning algorithms that study different textual qualities that can differentiate fake content from real, we hope to discover bogus news that has a significant impact on society. We develop numerous machine learning algorithms utilizing various ensemble approaches and evaluate their performance using these properties.

Keywords—TF-IDF, Logistic Regression, Machine Learning, Natural Language Processing, Social Media.

I. INTRODUCTION

The introduction of the World Wide Web and the quick adoption of social media platforms provided the path for new information to emerge, as has been seen. Is it true, however, that all of the news that has been circulated in the media is accurate? Fake news causes erroneous perceptions of some facts, leading to misunderstanding and information manipulation. The introduction of the World Wide Web and the quick adoption of social media platforms provided the path for new information to emerge, as has been seen. Is it true, however, that all of the news that has been circulated in the media is accurate? Fake news causes erroneous

perceptions of some facts, leading to misunderstanding and information manipulation. Machine learning (ML) is a branch of Artificial Intelligence that studies computer algorithms that learn from their mistakes and improve over time. It enables an application to improve its accuracy in predicting outcomes without having to explicitly program it using training data. Object recognition, summarization, prediction, classification, clustering, and recommender systems are just a few of the tasks that machine learning models can assist us with. Python's simplicity makes it easier to use in development than other programming languages, allowing you to test techniques without having to build them. Machine learning is used by several businesses. Example, Uber uses algorithms to match drivers with riders. Google uses machine learning to surface the right advertisements in searches. The goal of this article is to integrate fake news detection on social media platforms such as Twitter, Facebook, and WhatsApp.

A count vectorizer or a TF-IDF matrix is used in the suggested system (which compares how often words are used in other articles in your dataset). The best approach for this text classification problem is to employ a Naive Bayes classifier, which is the industry standard for text-based processing. The main goal is to develop a text transformation model (count vectorizer or tfidfvectorizer) and determine which type of text to use (headlines vs full text). The next stage is to extract the most optimal features for count vectorizer or tfidf-vectorizer. This is accomplished by using an n-number of the most often used words and/or phrases, lower casing or not, and, in most cases, omitting the stop word. which is done by removing the stop words, which are common words like "the," "when," and "there," and only using those words that appear at least a given number of times in a given text dataset, using an n-number of the most commonly used words and/or phrases, lower casing or not, mainly removing the stop words, which are common words like "the," "when," and "there," and only using those words that appear at least a given number of times in a given dataset.



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MOBILE COMPUTING

-A TECH SAFARI



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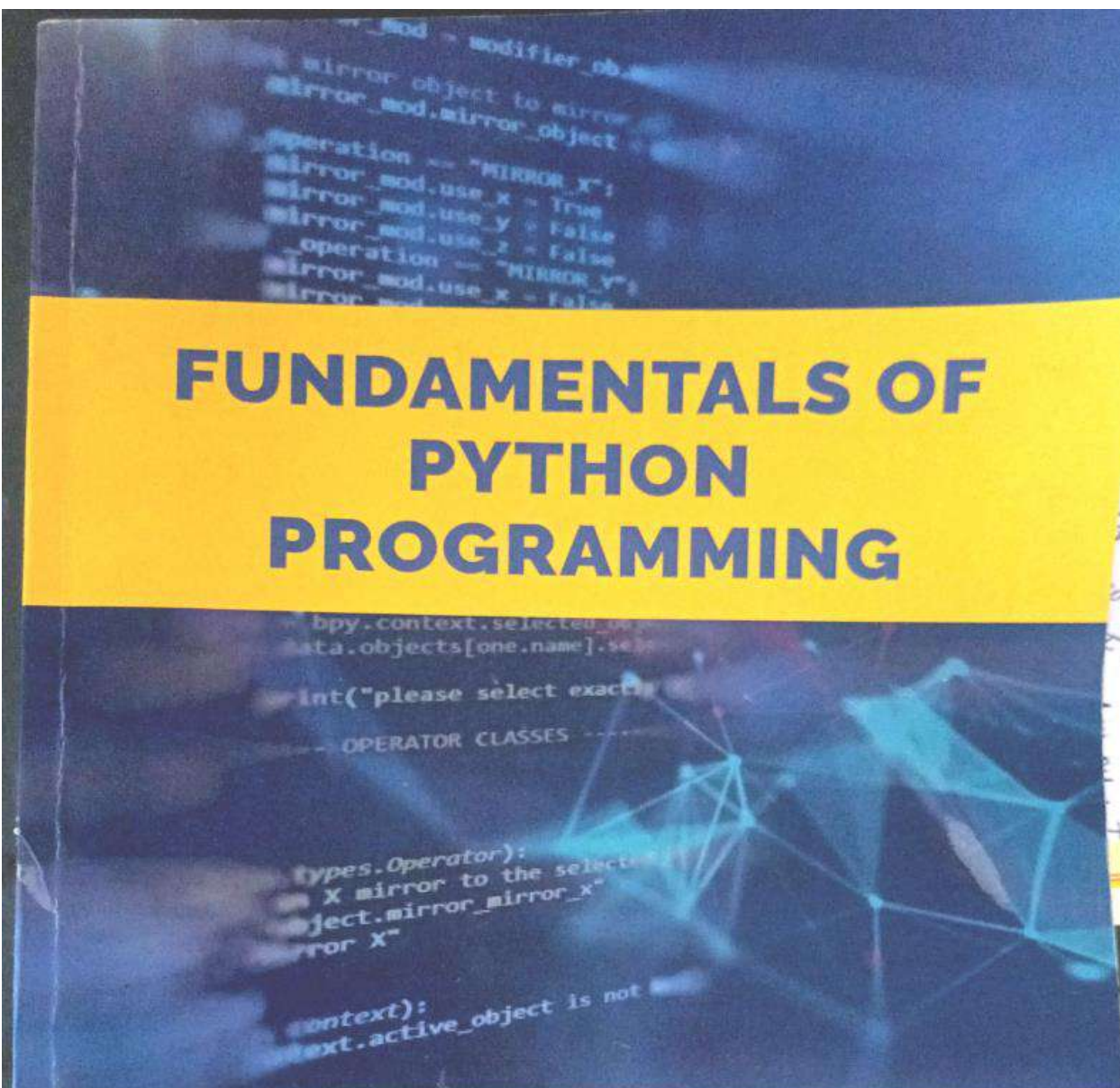


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QoS Provisioning in MANET Using Fuzzy-Based Multifactor Multipath Routing Metric



S. Venkatasubramanian, A. Suhasini, and C. Vennila

Abstract Volatile topology is the basic nature of MANET. Haphazardly, the nodes may move which makes and breaks connection between nodes. Because of this nature, providing quality of service (QoS) is a challenging task. For the applications that use real-time data packets delivery, quality of service (QoS) has to be provisioned. This paper discusses a technique to provide QoS in a heterogeneous network with multipath routing is given. The multipath routes are to be discovered primarily using the parameters such as delay, channel occupation, link quality and residual energy. To choose the best routes between the originating node and the target node, a fuzzy logic mechanism is used. This Fuzzy-based multi-parameter and multipath QoS routing (FMMQR) find out the optimal path for data transmission between the two nodes. This technique gives better performance than some of the existing method. The simulation experiments prove our Fuzzy-based multi-parameter and multipath QoS routing (FMMQR) performs better than other methods.

Keywords MANET · Routing · Fuzzy based · Multifactor · Multipath · QoS

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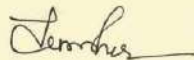
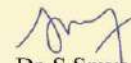
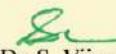
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organized by RVS Technical Campus, Coimbatore, India on 25-26, November 2021.


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A Deep Convolutional Neural Network-Based Speech-to-Text Conversion for Multilingual Languages



S. Venkatasubramanian and R. Mohankumar

Abstract Designers have been processing speech for decades for a wide variety of applications, from mobile communications to automatic reading machines, among others. By eliminating the need for alternative communication methods, speech recognition saves time and money. In the world of electronics and computers, speech is rarely employed because of the complexity and variety of voice signals and noises. Today's technologies allow us to process speech signals quickly and accurately and recognize the text. A real-time translation of speech into written language requires specific techniques, as it must be extremely rapid and nearly error-free to make sense. A person's speech is the most natural and important form of communication. This system converts human speech into a string of words using the speech-to-text (STT) technology. This system's goal is to extract, classify, and recognize information about speech in a variety of ways. Using convolutional neural networks (CNNs) for voice classification, the proposed system is developed. The input signals are classified by CNN on its own since it is a self-optimizing neural network. In addition, high-level features are extracted by convolutional and pooling layer, where the data is classified using fully connected (FC) layer. A database contains pre-recorded speech. Testing and training are the two key aspects of the database. In the training phase, samples from the training database are run through a series of tests to determine their characteristics. Each sample's features are combined to create a feature vector that is stored for future reference. When a sample is supplied to the system for analysis, its features are extracted. There is a comparison between these features and the reference feature vector, and the words with highest similarity are output. MATLAB (V2018a) environment is used to design the system.

Keywords Convolutional neural network · Multilingual languages · Speech recognition · Speech-to-text · Testing · Training

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FUTURE TRENDS IN 5G AND 6G

Challenges, Architecture, and Applications



MANGESH M. GHONGE
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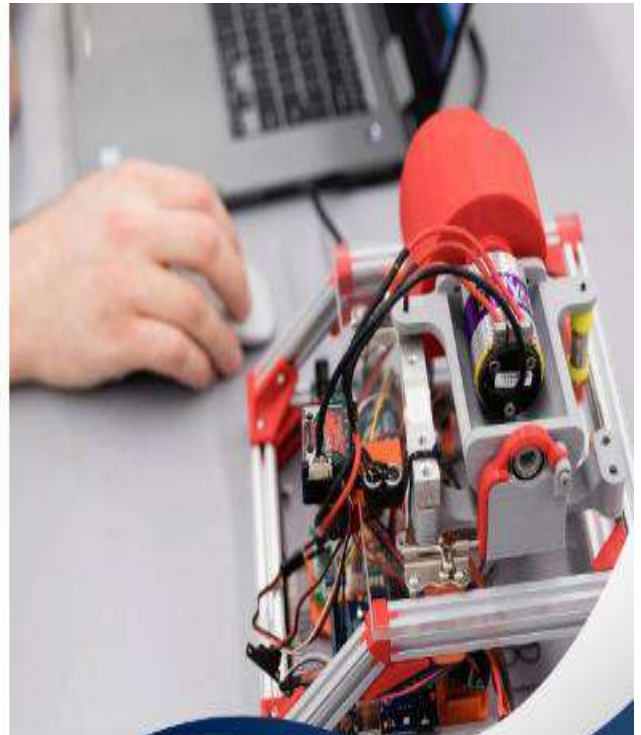


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BASIC ELECTRICAL, ELECTRONICS AND INSTRUMENTATION ENGINEERING



BASIC ELECTRICAL, ELECTRONICS AND INSTRUMENTATION ENGINEERING

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Single-Layer-Single-UWB Patch Antenna for HXLPE-Based Artificial Hip Diagnosis in Microwave Tomography Spectrum



Khalid Ali Khan , Suleyman Malikmyradovich Nokerov ,
Aravind Pitchai Venkataraman , Kehali Anteneh , and Diriba Chali

1 Introduction

Globally, the most common and versatile modalities that are found for biomedical imaging and scanning are X-ray screening, ultrasound imaging, positron emission tomography (PET), computed tomography (CT) scans, and magnetic resonance imaging (MRI) scanning. Moreover, microwave-based imaging technologies are increasing exponentially because they offer non-ionizing radiation as well as non-invasive characteristics. Furthermore, the microwave tomography method provides a complementary method to diagnose human body organs and health [1–3], sensing and imaging the tissue's abnormalities such as breast cancer, brain tumor detection [4], physiotherapy [5], and so on. In other words, vigorous use of non-ionizing forms of electromagnetic waves on the human body for microwave imaging or for monitoring the human organs avoids dangerous effects on the patient's health. But in the case of total hip arthroplasty (THA), component positioning such as acetabular offset, cup orientation, and femoral stem positioning must be known and investigated for successful clinical outcomes or occurrence of complications. Deep knowledge of joint anatomy and biomechanics relies on the vital signals that are collected by the microwave processing unit before image projection on the screen. Therefore, a wideband or ultra-wideband (UWB) antenna is required to achieve the high-definition images even at the lowest peak signal-to-noise ratio (PSNR). Consequently, a microwave tomography (MWT) antenna design, development of

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LABVIEW BASED HILL ASSIST AND BLACK BOX IN FOUR WHEELERS

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ABSTRACT

At present, the vehicle operation research on slope sections in mountainous areas mainly use statistical analysis to describe the correlations between operating speed and road alignment, which could not explain the vehicle's driving risks with different dynamic characteristics on slope sections. Based on vehicle dynamic analysis, a basic operating speed of a passenger car is achieved by the dynamic model, then the model amended by road factors is acquired to predict the operating speed. The operating speed of passenger cars on some of the slope sections were carried out by LABVIEW programming and GUI visualization. The comparison of observation speed with operating one shows that the accuracy of operating speed of the forecast model is higher and has a good applicability.

Keywords: AFS, Automatic braking, LabVIEW, Hill safety, Driving Assist, cruising control, tracking control, hybrid dynamical system, GPS, GSM.

**WAREHOUSE MONITORING SYSTEM OF AN AGRICULTURAL
INDUSTRY USING AI ALONG WITH FIRE DETECTION**

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ABSTRACT

Dangerous fire is an important topic in the warehouse safety system. Fire detection; and its information utilization using image processing and IT can be good hope to reduce the dangerous of fire mishaps. However, there are many ways with new art for fire detection, but unknown signal is still a challenge to avoid. In this project, an automatic fire detection and warning system under warehouse video surveillance is presented in order to identify fire from video camera data and inform the concerned people. The planned system works on a low computational time taking fire detection process using RGB color system, and it warns the people regularly than general alarming unit. The designed project will be able to identify the present conventional fire detection process under security system. The used fire detection approach has been tested under different scenarios is also presented to substantiate the efficiency of the system.

Keywords: Fire detection, image processing AI.

**ARTIFICIAL INTELLIGENCE BASED SMART INDUSTRY
POLLUTION MONITOR AND CONTROL USING LABVIEW**

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ABSTRACT

The majority applications of pollution monitoring systems are in industries. The control of the parameters which causes pollution and deteriorates the industrial and natural environment pattern is a great challenge and has received interest from industries especially in Petro chemical industries, Paper making industries, Water treatment industries and Sugar manufacturing industries. The main objective of our project is to design an efficient and robust system to monitor the parameters causing pollution and to minimize the effect of these parameters without affecting the plant or natural environment. The proposed methodology is to model a system to read and monitor pollution parameters and to inform pollution control authorities when any of these factors goes higher than industry standards. A mechanism using IoT, Artificial Intelligence and LabVIEW is introduced in this proposed methodology, which will automatically monitor when there is a disturbance affecting the system. The system is implemented using LabVIEW software. The system investigates level of pH in industry effluents, level of CO gas released during industry process and temperature of the machinery. With the design of IoT, the signals can be effectively transferred and the actions in these cases can still be made accurate and effective.

Keywords: IOT, Labview, AI, CO.

CONTROLLING AND MONITORING THE AUTOMATED AQUAPONICS USING IOT AND LABVIEW

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ABSTRACT

Aquaponics is the combination of aquaculture and agriculture. Cultivating the plant and fish at the same time. Food feeder mechanism will feed the food for fish for every 5 seconds (for project purpose only we use 5 seconds). Cycle starts with feeding fish excreta is rich in ammonia, which is biologically converted into nitrates by good nitrifying bacteria. The nitrate rich water is then supplied directly to the roots of plants. Plants take up this nitrate as nutrients. Modern aquaponics systems can be highly successful, but they require intensive monitoring and control. IoT-enabled aquaponics systems on the other hand can provide the opportunity to improve the quality of the produce grown with minimal effort and automation of processes. Continuous monitoring of this data, and making necessary adjustments, will facilitate the maintenance of a healthy ecosystem that is conducive to the growth of fish and plants, while utilizing about 90 percent less water than traditional farming. As using this technique water is reused, it requires less space, user gets natural food. Aquaponics can be automatically managed and controlled by making use of IOT technology with the help of sensors like pH, temperature, and humidity. IOT will show the graph for water level in fish tank. In aquaponics system LabVIEW technology is used monitor the parameters values in visa resource. With the help of LabVIEW, we can store the data in excel spreadsheet for the future reference.

Keywords: Aquaponics,IOT,Labview,pH.

DESIGN AND MODELLING OF CANTILEVER BEAM AND CALCULATING ITS NATURAL FREQUENCY

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ABSTRACT

This article concerns about the natural frequency calculation and transient analysis of the cantilever beam for vibration control. The cantilever beam is designed for the vibration control where the natural frequency of the beam with its particular dimension and material properties are used in it. This beam undergoes modelling in the ANSYS and COMSOL for the dynamic analysis of the cantilever for its applied changes. The analytical equation is used to calculate the natural frequency of the beam theoretically. The relation between resonance frequency and damping ratio is also acquired.

Keywords: Natural Frequency, Analytical Equation, ANSYS, COMSOL..

**VIBRATION CONTROL OF A SMART CANTILEVER BEAM USING
DSPACE**

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ABSTRACT

Vibration of a smart beam is being controlled. This smart beam setup is comprised of actuators and sensors placed at the root of a cantilever beam. Vibrations can be caused by various sources including human activity and nearby motorized equipment. In this case, disturbance is produced using a signal to the actuator. The piezoelectric sensors are used to detect the vibration. Simultaneously, feedback controller sends correction information to the actuator that minimizes the vibration. To optimize results, the design of information filter and state feedback controller for vibration suppression of a flexible beam structure at first two modes. The model of the system which includes the dynamics of the structure together with the sensor/actuator dynamics is obtained through on line system identification technique. The performance of the estimator and the controller is evaluated experimentally using dSPACE controller board.

Keywords: Vibration Control, dSPACE, Cantilever Beam, Piezoelectric, State Feedback Controller, Information Filter.

SMART ENTERING SYSTEM USING IOT AND AI

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ABSTRACT

COVID 19 has made a huge impact on the society, the new restriction has been imposed on the number of users allowed in a particular room in offices, shops, etc. to maintain social distancing, along with social distancing and regular temperature and face mask checks at entrances of the office and other organizations is mandatory. In this project we made an automated entry system, we make use of a temperature sensor(MLX90614) and ESP-32 cam to detect the entrance of a person, when the project detects entrance it will check the temperature and face mask of the person if the facemask and temperature attain the criteria the person is allowed entry otherwise the entry is denied. only a pre-determined number of people are allowed in the room. The allowed temperature, the number of people allowed in the room as well as the number of people actively present in the room can be viewed using a firebase.

Keywords: RFID, Temperature, Facemask, IoT, Entry Monitoring

**BLOOD PRESSURE AND HEART RATE
MONITERING USING MATLAB WITH ARDUINO**

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ABSTRACT

Physicians' understanding of biosignals as measured with medical instruments becomes the foundation of their decisions and diagnoses of patients, as they rely strongly on what the instruments show. Thus, it is critical and very important to ensure that the instruments' recordings exactly reflect what is happening in the patient's body so that the acquired signal is the real one or at least as close to the real in body signal as possible. The following paper deals with the analysis of PPG (Photo plethysmography) signal to measure heart rate and analysis of resistance change in thermistor for temperature measurement by the means of MATLAB tool effectively. Study of PPG signal include generation of PPG signal, amplification of PPG signal and PPG signal filtering and study of resistance change in thermistor include linearization of the acquired data, measuring the resistance change and interpreting the data. This project is been inspired by the need to find an efficient method for heart rate and temperature analysis which is simple and has good accuracy and less computation time.

Keywords: Arduino, Heartrate Measurement, Thermistor, Temperature Measurement, Photoplethysmography (PPG), MATLAB

**IOT BASED HUMIDITY AND TEMPERATURE
MONITERING USING MATLAB WITH ARDUINO**

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ABSTRACT

Internet of Things (IoT) is emerging and is accustom for remote monitoring of the surrounding parameters and other stuffs with the use of sensors that acquaint for wireless sensing of real time data and transfer them into the desired form and help to forward the sensed data across the network cloud via 'Internet Connection'. Here the project work deals with The IoT 'Cayenne' web service which is a generous open API service that act as a host for the variety of sensors to monitor the sensed data at cloud level and composite a special feature of porting the sensed data to the MATLAB R2022 using a channel ID and read API key that is assigned by services and able to track data value at picky sample at particular intervals. This project also uses an Arduino UNO board, ESP8266 Wi-Fi Module that helps to process and transfer the sensed data to the Cayenne Cloud

KeyWords: SHT25 sensor, Arduino Uno board, Node MCU, Matlab.

DEPARTMENT OF INFORMATION TECHNOLOGY

A Novel Real Time 3D Object Detection Network in Autonomous Driving using reformed rs-resnet network

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Abstract. Extending the RS-Resnets architecture for 3D bounding box detection from 2D images to 3D point clouds that have varying degrees of visibility, a regression module with a Euler-Region Proposal Network that performs complex angle regression is added to predict the direction of bounding boxes around detected objects. Geometrical overlap of predicted labels and ground truth is identified for every set of Lidar point cloud and corresponding image data and compared with the state-of-the-art architectures. With the ability to scale to different architectures of GPU/TPU, the RS-Resnet architecture achieves faster frame rates of reaching threshold value of 70 ms/frame and APH/L2 = 66, on a NVIDIA Tesla V100 GPU and capability to scale to new and more powerful GPU/TPU architectures. The predictions are made to two levels of label hierarchy and three levels of Lidar range images with the associated camera images which are considered as single set. The achieved frame rates and detected AP is compared to the latest state-of-the-art architectures like Complex-YOLOV4 and other leaderboard in the Waymo 2021 3D object detection challenge.

Keywords: RS-Resnet · YOLOV4 · Euler Region Proposal Network · 3D bounding box detection.

1 Introduction

With autonomous vehicles the requirement of a human driver for safely operating a vehicle is no longer required, as a combination of sensors like lidar, radar and camera along with a software stack can do the same task. Combining different sensors so that the weakness of one sensor can be complemented by another sensor, and this process is called as sensor fusion.

Detecting objects in camera images can be done using deep neural networks, but for enabling autonomous driving high levels of precision are required to ensure objects are detected independent of sensor failures due to weather or lighting conditions. Sensor fusion enables lidar data and image data to include lidar data to improve the tracking results through sensor fusion. Additional sensors like radars and lidars have different physical measurement principle and improve the reliability of the environment perception system.

A Novel Rescaled and Reformulated Convolution Network for Semantic Segmentation

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Abstract

Semantic segmentation is an essential mission of Intelligent Vehicle system. It is enforced at pixel level so that multiple objects of the same category can be classified as single class. Enriched performance of semantic segmentation can be attained using state of the art computational resources. This paper proposes a novel network architecture for semantic segmentation with reformulated convolution layer. The proposed reformed training method enhances the learning efficiency. The proposed model is designed using Torch7 with CUDA DNN and evaluated with benchmark dataset. It is observed from the experimental results that there is significant improvement in the performance of the proposed model compared to existing state of art models.

Keywords: Smartphone Application, Facebook Application, Large-Scale Natural Disaster, Disaster Countermeasures Headquarters

1 Introduction

The Intelligent Vehicle system observes the environment using sensors. For better understanding of the environment, it captures multi-dimensional images of the surrounding especially in bio-medical domain. Processing these multi-dimensional images and distinguishing objects in them are difficult tasks [1,2]. Complex algorithms are used to detect traffic elements in the images. Nowadays, deep learning is widely implemented to classify distinct traffic elements in the images. It is executed at pixel level and each pixel is labeled to a category. This process is known as semantic segmentation [4]. CNN is adopted for segmentation problem and produced remarkable outcomes and also outperformed traditional approaches [14] [8]. But the segmentation architecture demands classic computational resources. Recently, the performance reduction in deep architecture is rectified by introducing residual layers in CNN. Increasing the depth in CNN increases the accuracy only in small scale that too with significant increase in computational resources. These challenges in semantic segmentation can be administered by reformulating the residual layers [19] [2] [9]. This demands a novel network architecture for semantic segmentation of real time environment and it is yet to be discussed. The required novel architecture must have convolution layer with one dimensional kernel to reduce the cost of computing. For effective training, the layers must learn residual functions. Moreover these layers are to be stacked sequentially so that encoder and decoder arrangements in the proposed network architecture will provide end to end semantic segmentation with uniform resolution [6] [16]. The efficacy of the novel architecture must be evaluated with the Cityscapes dataset, as it is a challenging dataset and it has distinct urban scenes. Hence this paper examines deep network architecture for convolution layer to facilitate effective semantic segmentation and evaluates the proposed architecture with Cityscapes dataset.

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A Roadmap to Smart Home Automation Sensors and Technologies

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Abstract

Life is becoming simpler and easier in almost every way as automation technology advances. A wireless automation system that uses the internet to monitor simple home functionality and features from anywhere in the world is known as a smart home automation. Because of their various applications to users, smart home systems have gained importance. Smart homes, smart buildings, industrial Internet of Things (IoT) are those in which household appliances, electrical appliances, safety systems and computers can be monitored and controlled remotely. This chapter includes a roadmap on IoT, automation technology and various recommendations into smart home automation system sensors.

1.1 Introduction

The homes in the future will be completely automated and self-controlled because of its smart handling and other benefits. Industrial IoT automation system that enables the users to control the various kinds of electrical appliances. The wired communication is used by many existing domestic automation systems. This will not cause a problem until the system is planned and installed well in advance during the physical building. But the realization of cable networks costs for existing buildings in relation to other buildings is very high.

In the case of wireless systems, it can help for automation systems. Due to the advancement in technologies such as Wi-Fi, cloud networks in recent days, wireless systems are used everywhere than before. So, the wireless network is more advantageous and easily



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Facial Emotion Recognition System Using VGG Neural Network

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IoT-GIS Integrated Smart System Towards Baby Monitoring

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Abstract—Considering the present world's scenario, every parent is busy in their job and familial routines. In the case of India, both the parents need to work and look after their babies/infants. So more workload and stress will often be felt in such families especially by the mother or the care taker of the babies. This paper presents an affordable baby monitoring system for such busy parents so that they can ensure the proper care and safety of their babies. This system is based on the GSM technique for sending alert messages to the parents in case of any of the monitoring parameters exceeds certain permissible values. The main aim of this work is to save the time of the parents and provides them the satisfaction of maximum security and safety of their babies.

Keywords— GSM, Baby Monitoring System, Sudden Infant Death Syndrome (SIDS)

I. INTRODUCTION

The baby monitoring system is a kind of alarming system that could detect the movements and activities of the babies and activities and can convey the message about the condition of babies to the concerned authority via a radio or mobile or even a display. They are now thinking about adopting the technological and engineering inventions for getting advantages and benefits in terms of safety issues of their babies. Monitoring a baby continuously is really a tough job as well as it is not possible for the parents to carry out their babies all the time with them especially while working. Most importantly parents do not get surety about their babies' safety in both of the cases. In this perspective, a baby monitoring device can be the best solution to remove the anxiety and stress of the parents. To avoid such cases we are adapting a new method in this system, GSM [1] based infant presence monitoring in the cradle. Internet of Things (IoT) simply refers to a network of objects that are connected to the internet.

II. PROPOSED SYSTEM

The purpose of this paper is to reduce the physical interface of the working class parents with greater reliability, efficiency, better adaptability, security and cost effectiveness. The entire system works with the sole purpose of providing convenience by continuously monitoring every activity of the infant and thereby providing real time details [2] and updates to the parents. The paper has been successfully monitoring the activities which include conditions like movements of infants, Apnea detection, Care taking through recorded voice, Automatic Cradle Swing and Alerts to parents. The system will take the parameters like temperature and the wet condition of the baby's bed using a

moisture sensor. Arduino UNO is used as the microcontroller. It converts the values analog to digital. The values are measured and embedded into the Arduino using the appropriate sensors. The Wifi module is used which is a wireless internet access interface to any microcontroller based on its simple connectivity through Serial Communication. If there is any deviation from the threshold values, an alert message is given to the caretaker. The measured values are stored in the cloud and the values are secured by encrypting [3] the data using a security algorithm.

III. FEASIBILITY STUDY

A. Environmental Feasibility

Any successful businesses and practices are distinguished from unsuccessful ones by their entrepreneurial skills and the quality of their product. It is also irresponsible to release a product that is environmentally unsustainable as it is part of our duty as human beings to take care of the planet for ourselves and for future generations. The baby monitoring systems have good environmental sustainability as it is not a detriment to the environment. There are no additional power requirements necessary to run the paper, excluding having access to a powered phone. As long as none of the major components are severely damaged then the paper will likely have a long lifespan compared to the time the paper is actually in use. Due to the nonviolent nature of the usability of the paper frequent disposability should not be an issue. For the times when the product does need to be disposed of, many of the components can be turned into a plant that handles and recycles circuit boards [4].

B. Social Feasibility

The social sustainability is an equally important aspect in any paper or product as it is the driving force behind people's willingness to use or purchase the paper or product. Hopefully people will understand that the paper is for the social purpose of saving babies' lives while also bringing parents a better sense of security at night. These are two factors that are hard to put a price on. SIDS (Sudden Infant Death Syndrome) [4] cases happen around the world and are truly terrible occurrences. If our paper truly works as intended then there would be no social substitute for it since it is an attempt to reduce the number of lives lost and the heartbreak of the families that follows.

C. Economic Feasibility

This work is strongest in the economic sustainability department. The hardware price is very affordable whereas many commercial baby monitors falls anywhere in the range of \$15 to \$180. So the kit comes in on the less expensive side.

FAKE NEWS DETECTION IN SOCIAL MEDIA USING DEEP LEARNING Rengaraj Allias

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Abstract— In today's society, social media plays a critical role in the dissemination of information. It is critical to determine the accuracy of the information being disseminated in order to avoid blame manipulation, misunderstanding, and a negative impact on society as a result of fake news. As more individuals spend their time connecting online through social media platforms, many people are turning to traditional news organizations for information and news. This is because it is less expensive and easier to distribute and comment on. Despite this advantage, established news companies prevailed in the battle for news quality. However, incorrect information is often disseminated on social media for financial and political advantage. The widespread dissemination of bogus news has a harmful impact on society. So, utilizing some machine learning algorithms that study different textual qualities that can differentiate fake content from real, we hope to discover bogus news that has a significant impact on society. We develop numerous machine learning algorithms utilizing various ensemble approaches and evaluate their performance using these properties.

Keywords—TF-IDF, Logistic Regression, Machine Learning, Natural Language Processing, Social Media.

I. INTRODUCTION

The introduction of the World Wide Web and the quick adoption of social media platforms provided the path for new information to emerge, as has been seen. Is it true, however, that all of the news that has been circulated in the media is accurate? Fake news causes erroneous perceptions of some facts, leading to misunderstanding and information manipulation. The introduction of the World Wide Web and the quick adoption of social media platforms provided the path for new information to emerge, as has been seen. Is it true, however, that all of the news that has been circulated in the media is accurate? Fake news causes erroneous

perceptions of some facts, leading to misunderstanding and information manipulation. Machine learning (ML) is a branch of Artificial Intelligence that studies computer algorithms that learn from their mistakes and improve over time. It enables an application to improve its accuracy in predicting outcomes without having to explicitly program it using training data. Object recognition, summarization, prediction, classification, clustering, and recommender systems are just a few of the tasks that machine learning models can assist us with. Python's simplicity makes it easier to use in development than other programming languages, allowing you to test techniques without having to build them. Machine learning is used by several businesses. Example, Uber uses algorithms to match drivers with riders. Google uses machine learning to surface the right advertisements in searches. The goal of this article is to integrate fake news detection on social media platforms such as Twitter, Facebook, and WhatsApp.

A count vectorizer or a TF-IDF matrix is used in the suggested system (which compares how often words are used in other articles in your dataset). The best approach for this text classification problem is to employ a Naive Bayes classifier, which is the industry standard for text-based processing. The main goal is to develop a text transformation model (count vectorizer or tfidfvectorizer) and determine which type of text to use (headlines vs full text). The next stage is to extract the most optimal features for count vectorizer or tfidf-vectorizer. This is accomplished by using an n-number of the most often used words and/or phrases, lower casing or not, and, in most cases, omitting the stop word. which is done by removing the stop words, which are common words like "the," "when," and "there," and only using those words that appear at least a given number of times in a given text dataset, using an n-number of the most commonly used words and/or phrases, lower casing or not, mainly removing the stop words, which are common words like "the," "when," and "there," and only using those words that appear at least a given number of times in a given dataset.



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Blockchain Based Fictitious Detection in Social Media

Lakshmi Kanthan Narayanan R. Rengaraj Alias Muralidharan Ranjani Sampathkumar Iswarya Gururajan
& Priyanga Subbiah

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Abstract

The digital information age has given content creators new avenues to distribute so-called fake news, a new type of propaganda that is intended to deceive the reader. With the extensive

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Blockchain Based Fictitious Detection in Social Media

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Abstract— The digital information age has given content creators new avenues to distribute so-called fake news, a new type of propaganda that is intended to deceive the reader. With the extensive ramifications of fake news' rapid propagation, efforts have been undertaken to automate the process of detecting fake news. In this paper, we will concentrate on the fact rather than the real fact, which is the replication of emotion and self-perception in the era of post-truth. Fact is the real time occurrence of the perception and belief that common people have, according to our definition. By verifying and communicating facts, we want to gradually bring people's minds to a consensus on the truth. Tracking, sharing, and creating are three interactive capabilities of social media that allow users to stay up to date on current events and reposting of any current affairs as flash news, such as exclusive coverage, live news coverage, and the technological research and innovations that are occurring around the globe. The integration of block chain into social media is to communicate exclusively decided information and even to host a live show. The most important and integral actions of Social media can be developed using block chain technology by sharing the news feeds, recording the audio and video footages which is helpful in creating the interaction between the vast community of viewers and fan base.

Keywords— Digital information, Fake news, Block chain

I. INTRODUCTION

Blockchain has the ability to transform a wide range of sectors. Its capabilities can improve commodity, data, and financial asset transparency and traceability, as well as market access and transaction efficiency. However, realising the potential of blockchain requires a policy environment that supports innovation and experimentation when we try to equate the ratio of exploiting the risks. The role of governing organization is highly responsible towards framing the framework for regulating fictitious information to help deal with blockchain's challenges and support transparent, fair, and stable markets as the technology matures. The OECD is looking into the policy implications in areas such as health, transportation, agriculture, the environment, and supply chain management.

A. Blockchain

A blockchain is a continuously increasing set of documents known as blocks that are related through cryptography. A cryptographic hash of the preceding block, a timestamp, and transaction data make up every instance of a block on the blockchain. A blockchain is a consensus-based peer-to-peer distributed ledger that also includes a smart contract framework. All committed transactions are stored in a list of blocks on the blockchain's public ledger. This chain continues to develop as additional blocks are added to it. For user security and ledger consistency, asymmetric cryptography [2] and distributed consensus techniques were used.

B. Types of blockchain

A permission-less blockchain is also known as a public blockchain. Anyone can participate in this blockchain by running as a node, mining a block, or performing transactions in the blockchain. Public blockchains include Bitcoin and Litecoin. Anyone can join the network because it is open. It necessitates a significant amount of energy consumption. It has a slow transaction completion rate. Private Permissioned blockchain is another term for a private blockchain. Only selected persons or members of an organisation can be a part of the blockchain, so participation is restricted. Private blockchain projects include Multichain and HyperLedger. Only authorised individuals are invited to join the network. It necessitates a lower level of energy use. It has a high transaction completion rate. Hybrid A hybrid blockchain combines the benefits of both centralised and decentralised blockchains. The chain's exact operation depends on which parts of centralization and decentralisation are used. The hybrid blockchain differs from other blockchains in that it is not exposed to the general public but still provides blockchain properties such as integrity, transparency, and security. Hybrid blockchain, like other blockchains, is completely customisable. Members of the hybrid blockchain can choose who can join the blockchain and which transactions are made possible.

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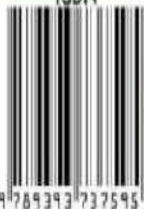


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MODELING AND 3D-PRINTING OF PLA DENTAL CROWN

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Abstract

The Aim of the work is to develop a dental crown using 3D additive manufacturing method with Poly lactic Acid (PLA) as raw material. As 3D Printing is an additive manufacturing process, there will be reduced wastage of material and greater accuracy during manufacturing. 3D printing bestows the user with various customizing options such as varying the density of the product, fabrication of intricate structures with greater accuracy and precision, etc. Modeling of 3D printable dental crown is developed using computer-aided design (CAD) package by means of a 3D scanner and Creo software. The ease of machining PLA using 3D Printer makes it a best replacement for ceramics in dentistry. The manufacturing of the tooth using the 3D printer is very easy and fabricated dental crown exhibits greater accuracy and strength.



DESIGN AND ANALYSIS OF FIXTURE USING SQUARE GUIDED MECHANISM IN MANUFACTURING PROCESS

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Abstract

A mechanism is a device that allows motion to be transferred from one connection to another. In the industry, many mechanisms such as sliders, watts, quick returns, and Whitworth are now available. However, in industry, motion transfer from circular to square is not available. Cutting or joining the work piece to make square geometry is highly beneficial. It is mostly utilized for marking, joining, and cutting operations since the



A SIGNIFICANT REVIEW ON DIE SINKER ELECTRICAL DISCHARGE MACHINING PROCESS

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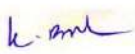


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Feasibility Study on Fabrication of PLA Dental Crown using 3D Printer

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Abstract

There is a continuous demand in the field of dental crown development and methodology in order to replace existing materials. Owing to ceramic's high degree of brittleness, less wear resistance and high cost there is a necessity for a new material to replace ceramics. Several research studies are being carried out to select a proper material and manufacturing process for the dental crown. In this work, survey has been carried out to fulfil the need and demand. Advancement in the technology with composite usage has increased range and scope for use of composites in dentistry. Thereby PLA (poly(lactic acid)) material is found to be the appropriate replacement for the existing material and additive manufacturing is the most feasible and efficient methodology to manufacture the dental crown. PLA is an eco-friendly polymer which is biodegradable, biocompatible and non-toxic in nature. PLA's growth in biomedical sector like Tissue engineering, bone implants and its ease of manufacturing using 3D Printer makes PLA material a best replacement for ceramics in dentistry. As 3D Printing is an additive manufacturing process there will be reduced wastage of material and greater accuracy during manufacturing. 3D printing bestows the user with various customizing options such as varying the density of the product, fabrication of intricate structures with greater accuracy and precision.



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EXPERIMENTAL STUDIES ON THE EFFECT OF HARDNESS ON METAL INERT GAS WELDING PROCESS PARAMETERS ON AISI 1018 MATERIAL

M. Evangeline Sheeba*, Y. Michael Santhosh, N. Mohamed Mansoor,
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ABSTRACT

The quality of the welding process is vital for the industrial sector to satisfy customer requirements. Welded joints generally have superior mechanical properties, especially when compared to screwed joints. Heat energy is play crucial role in the joining of materials with (or) without the use of filler rod. The Metal Inert Gas (MIG) welding is used to join similar/dissimilar material combinations by using filler rod. The AISI 1018 material is used as the test specimen for the welding process, and it has many applications in the automotive, aerospace, nuclear, and manufacturing industries. The input parameters are considered as voltage, current and flow rate and the output response as hardness of the weldment which is determined by using Rockwell hardness testing machine, Taguchi Design of Experiments (DOE) of L9 orthogonal array has been used with three levels and three factors for experimentation. The weldment's quality is determined by the input process parameters selected based on customer requirements and satisfaction. So after the experimentation, the S/N ratio is optimized and ANOVA is used to identify that current is a major dominating parameter in welding of AISI 1018 material.

Keywords: Metal Inert Gas welding, AISI 1018, Hardness, Taguchi Design, ANOVA Analysis.

DIE SINKER ELECTRICAL DISCHARGE MACHINING PROCESS - A REVIEW

G. Kelvin Christober, R. Nataraj, M. Pravin Ajay, K. Sundar
M. Ganesan, N. Baskar, S. Karthikeyan, R. S. Shiva Ranjani
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ABSTRACT

The process of removing excess material from a work piece in order to attain the result, as well as the product's required shape and structure, is described as machining. A variety of machining processes are available to remove unwanted materials in the form of chips for achieving the required quality and dimensions. However, it has some disadvantages like tool wear, friction losses and drive train losses. In order to overcome these difficulties, Die Sinker Electrical Discharge Machining is one of the most significant machining processes that is generally applicable to machine the materials. During this machining process, heat energy is produced by the electrical spark discharge between tool and the work piece, a dielectric medium is used to remove material in the size of micro craters. This paper discusses the work carried out by the previous researchers on Die Sinker Electrical Discharge Machining for different work piece materials and its performance based on Material Removal Rate, Machining Time and Surface Integrity. Based on the review of literature, it is clearly addressed that the main difficulties during Die Sinker EDM process on various parts and also to evaluate the influence of machining parameters during the Die Sinking EDM process.

Keywords: Die Sinker Electrical Discharge Machining Process, Input Process Parameters, Pulse ON Time, Pulse OFF Time, Mechanical Properties, Output Responses.

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PROCESS PARAMETERS INFLUENCE STUDY EXPERIMENTAL INVESTIGATION AND OPTIMIZATION OF MILLING ALUMINIUM LM 25

Maria Jackson¹, N. Baskar², M. Ganesan³, M. Meignanammoorthy⁴

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Optimizing the input parameters in the milling process of Aluminum LM 25, Taguchi method is chosen for Design of Experiments by which [L9] Orthogonal Array is done here. The optimization is carried out in both Taguchi DOE and Genetic Algorithm for Surface Roughness, Machining Time, Temperature and Material Removal Rate (MRR) individually having feed rate, spindle speed and depth of cut as input parameters. The deviation of performance characteristics from the actual value is calculated by using Signal to noise ratio. Among the various input parameters that affecting the Output responses, the one that causing significant effect has been identified by using Analysis of Variance (ANOVA). Dynamics of natural genetics is the source for Genetic Algorithm (GA). Once the objective function is clearly defined for the optimization problem the fitness function developed by GA and evaluates the input process parameters. Upon Investigations on milling process of Aluminum LM 25, the recommendations for input process parameters are made.

Keywords: Milling, Aluminium LM 25 material, Taguchi methodology, S/N ratio, ANOVA, Material Removal Rate, Surface Roughness, Genetic Algorithm.



DEPARTMENT OF SCIENCE AND HUMANITIES

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Synthesis, characterization, energy engineering and environmental applications of a new Mannich base ligand and its d^{10} metal complexes

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Abstract:

Rapid industrialisation has resulted in the huge discharge of pollutants into the environment and they affect all organisms on our planet. Some of these toxic pollutants enter the food web and water resources and have thus become a major threat to human and animal life. The need to protect the environment from further contamination by transition and heavy metal ions is well established and universally reinforced by legislations that set acceptable limits for various pollutants in effluents that may be discharged into sewers and local water bodies. It has become mandatory for all chemical plants, factories and other facilities employing chemical compounds of metallic ions in their process to treat their effluent water before discharge. Several industries have become zero-discharge units by recycling the water after proper treatment. In this regard, organic compounds (ligands) as metal-binding compounds are gaining momentum. The unique ability of these compounds to bind metal ions has been attributed to the presence of various functional groups, which can attract and sequester metal ions.

Relating to energy aspects, a number of metal complexes have been used in photo-splitting of water (yielding H_2 or O_2 depending on the conditions employed) and as sensitizers in photovoltaic or dye sensitized solar cells (DSSCs). The salient features of the metal complexes like their prominent absorption in visible region, feasible redox reactions, stability, solubility, processability into thin films, suitability to tune their redox potentials via facile ligand substitutions offer them the utility in DSSCs. These points are the important requirements to be met in using the metal complexes for DSSCs. In this regard and in view of synthetic feasibility the use of a new series of Mannich base ligands containing hetero atoms and their d^{10} metal complexes are considered significant and accordingly they will be employed in this proposal. Interaction of some d^{10} Mannich base metal complexes with TiO_2 -nanoparticles (NPs) will be studied using UV-fluorescence (UVF) methods.

Keywords: sequestration, photosplitting, Mannich base, fluorescence methods.

Synthesis, Characterisation and Biological Studies of Cobalt(II) Complexes of Schiff Bases

V. Balamurugan^{*}, L. Muruganandam and R. Natarajan

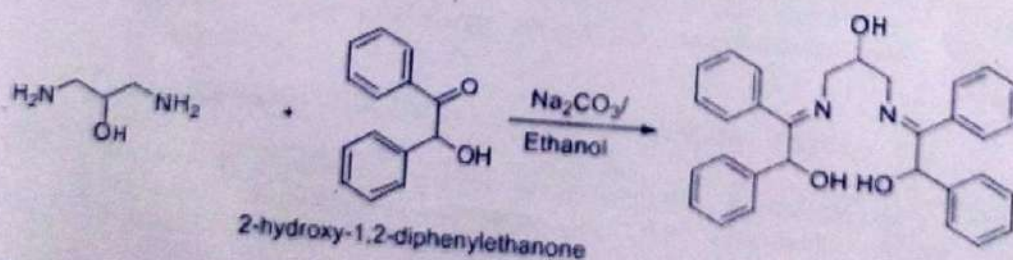
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Abstract:

The coordination chemistry of cobalt is of considerable interest because several metallo proteins such as vitamin B12 are cobalt complexes. Cobalt(II) complexes have shown specific hypoxic radiosensitization and thermosensitization as well as antitumour activity in vivo. The antitumour action of cobalt(II) complexes with tetradentate Schiff bases derived from aliphatic beta-diketones and diamines is observed in the case of Ehrlich-Lettre ascites carcinoma (EAC). Cobalt(II) complexes of Schiff bases are found to be potential antiviral agents. Many model complexes of cobalt in both +2 and +3 oxidation states have been prepared and investigated, with particular emphasis on the reactivity of metal ions in trans methylation reaction and the reversible absorption of molecular oxygen. Cobalt complexes are also useful as catalysts in the synthesis and hydrolysis of peptide. Imine acts as an inhibitor for several enzymes like ATPases. Hence, the study of metal-imine complexes is very useful for the understanding the biological processes. The complexes with diamine are also interesting for the development of new molecules. In this study, new metal complexes of Co(II) with Schiff bases. Synthesis of a model compound is given in the scheme 1 below:



Scheme 1. Synthesis of Schiff base (2E,2'E)-2,2'-((2-hydroxypropane-1,3-diyl)bis(azanylylidene))bis(1,2-diphenylethanol).

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Characterization of Titanium Coated by Chitosan, Zinc Oxide and Silver Nanoparticles and its Anti-fungal Activities. OP 10

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Abstract:

Every revolution in this world is fully dependent on human knowledge and the advancement of a comfortable existence through scientific methods. Titanium is utilized widely in the aerospace sector, defense industry, automobile industry, farm machinery and medicinal applications. Nanomaterial coatings play an important role in enhancing the strength of the microstructure of titanium sheets. The type of coating may be changed based on the required application. Electrodeposition process is used to coat titanium sheets with chitosan-zinc oxide-silver nanoparticles. Morphology and dispersion of chitosan, zinc oxide and silver nano particles on titanium is studied using UV, SEM, EDAX, XRD and Raman spectra. Antifungal properties of the material are examined against *Candida albicans* and the results of these studies are presented in this research work.

Keywords: Electro deposition; Titanium; Chitosan; Zinc Oxide; Silver.

A Green approach for the synthesis of Ni and Zn co-doped Cr_2O_3 nanoparticles by precipitation method and their anti-microbial activity.

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Abstract:

Chromium oxides have recently gained prominence in the fields of science and technology. Due to its various oxidation states, chromium can create a variety of oxides. Chromium oxide (Cr_2O_3) is important in specific applied applications such as in high temperature resistant materials, corrosive resistant materials, liquid crystal displays, green pigment, catalysts, H_2 absorption material, gas sensing and as a glaze in ceramics. Since Cr_2O_3 nanoparticles have diverse applications in science and technology, an attempt to synthesize Cr_2O_3 nanoparticles have been made by chemical precipitation method using sodium hydroxide as the precipitating agent. For the synthesis of Cr_2O_3 nanoparticles, this approach utilizes a facile, low-cost, one-step method. In this paper, we report synthesis of pure Cr_2O_3 and Ni and Zn doped Cr_2O_3 nanoparticles by chemical precipitation method and its characterization by means of UV- Vis, FTIR spectroscopic methods, Scanning Electron Microscopy (SEM), Transmission Electron Microscopy (TEM), Energy Dispersive X-Ray Analysis (EDX) which will give much valuable information about these materials. The synthesized nanoparticles have also shown inhibition of bacterial growth as they can be used as promising antimicrobial agents against bacteria.

Keywords: Cr_2O_3 , Chromium oxide nano particles, Anti-microbial.

DEPARTMENT OF MBA

This book of *Industrial Relations and Labour Legislation* provides a helpful background to the subject of industrial relations. It contains and analyses studies of a range of industrial relations issues. This book is intended to be useful for students who are pursuing these studies but also for those working in the relevant area of industry and government work.

Dr. R. Karthikeyan is currently working as Professor since 2009 in the *Anna College of Engineering, Tiruchengode*. He has more than 25 years of experience in teaching Management subjects, under his supervision 7 research scholars has been published journal has done and awarded doctorate degree in Management, and various Conferences. He has initiated 2 books in Process in Management Education in digital form in English. He is also developing minor and major modules on Management Conferences.

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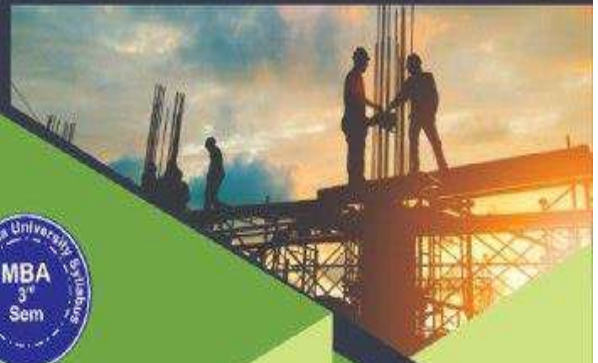
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