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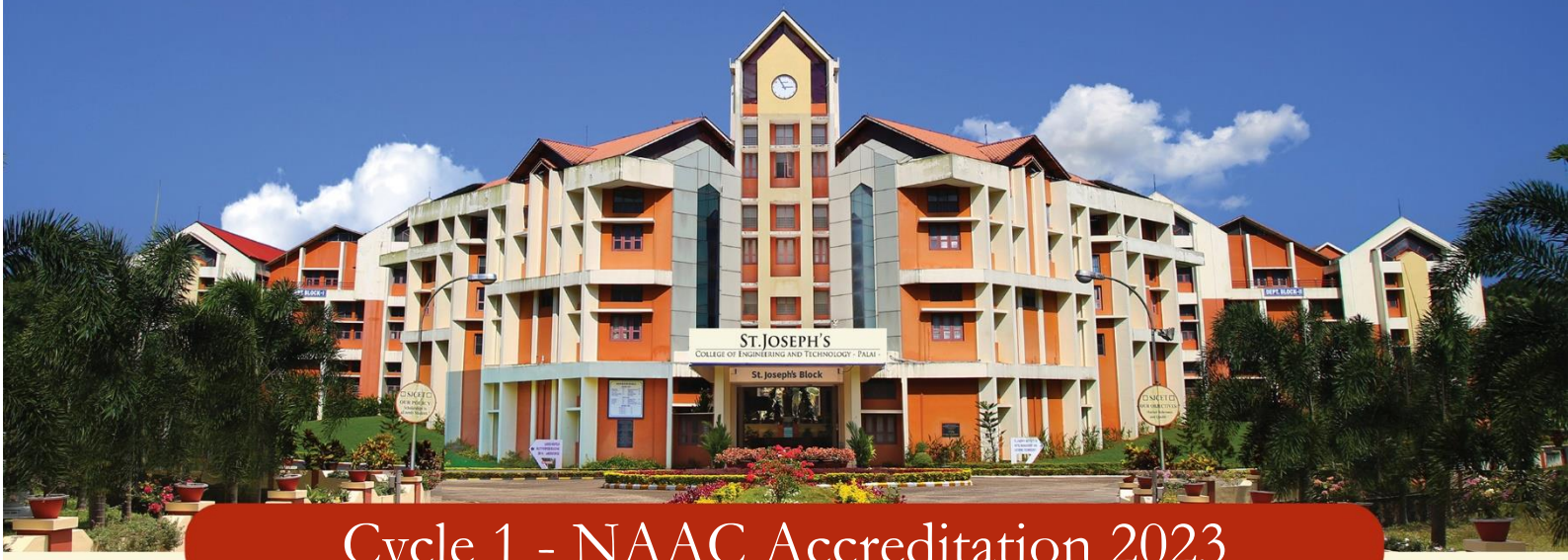

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EVALUATION OF RISK FACORS INFLUENCING BUILDING CONSTRUCTION

C H Sabarinath[1], Jinta John[2], Jenson Jose[3]

[1]*PG Student St Joseph's College of Engineering and Technology, Palai, Kerala.*
[2] *Assistant professor St Joseph's College of Engineering and Technology, Palai, Kerala.*
[3] *Assistant professor St Joseph's College of Engineering and Technology, Palai, Kerala.*

Abstract - *Risk management is the identification, assessment of risk and measures to overcome risks. Risk existing in building construction is more as compared to other construction projects. Risk management in building construction could help to reduce the possible risk of accidents. This study focuses on the risk management in commercial building construction. Four main objectives of this study were to identify risk factors, identify risk frequency and impact, categorize risk and identify measures to manage these risks. Extensive literature survey followed by a questionnaire survey served as the main source of data.. Based on a probability of occurrence and severity of impacts on the project objectives, this paper identifies major risk factors influencing building construction. This research proposes Relative Importance Index (RII) and Technique for the Order Preference by Similarity to ideal Solution (TOPSIS) methodology based on Multi Criteria Decision Making analysis to prioritize and assess the risks.*

Key Words: **Building Construction Projects, MCDM analysis, Risks, Severity of impacts, RII, TOPSIS.**

1. INTRODUCTION

The risk management can be defined as the process to identifying, analyzing, and responding to project risks in order to improve opportunities and reduce threats affecting the objectives of the project. The first step of risk management is risk identification and therefore the next steps are often risk analysis, risk prioritization, and selecting appropriate strategy for handling risks. Building projects are highly risky due to the amount of investment put in for them which shows the necessity of identification of risk drivers, the level of each risk effect, intensity of the influence of the danger on the project, and therefore the probability of every risk. Finally, the appropriate action should be selected by project managers to reduce the loss of projects where the Cost, time, and quality are the main elements which should be concerned.

In this paper, by using RII and fuzzy technique (TOPSIS), it tried to evaluate, identify and prioritize project risks in the Project Life Cycle of construction projects and consequently help managers in decision-making.

1.1 Risk Management Process

Risk management contains the rundown of organized utilization of the executive's strategies, cycles and methods to the undertakings of building up the specific circumstance, recognizing, dissecting, evaluating, treating, checking and conveying risks. Risk management process (RMP) is the fundamental standard of comprehension and overseeing chances in an undertaking. It comprises of the fundamental stages: recognizable proof, appraisal and examination, and reaction. All means in RMP ought to be incorporated when managing chances, to productively execute the cycle in the task. Numerous varieties of RMP are accessible in writing, yet most ordinarily depicted systems comprise of those referenced advances. In certain models there is one more advance added, and most of sources recognize it as risk observation and reviewing. For the future use end goal of this paper the model of RMP could be utilized.

Fig 1 Risk Management Process

1.2 Purpose

Risk management is a core part of conducting a construction project. Within research and academic literature, there are numerous theories that suggest how to successfully identify, assess, and mitigate risks within the construction industry. There are still research studies showing that even though risk management works in theory,

RESEARCH ARTICLE | SEPTEMBER 28 2021

Evaluation and selection of CORDEX-SA datasets and bias correction methods for a hydrological impact study in a humid tropical river basin, Kerala

M. S. Saranya; V. Nair Vinish

M. S. Saranya *

[1]Department of Civil Engineering, Rajiv Gandhi Institute of Technology, Velloor P.O., Pampady, Kottayam 686501, Kerala, India

*Corresponding author. E-mail: saranyamscivil@gmail.com

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Abstract

It is well recognised that the performance of climate model simulations and bias correction meth is region specific, and, therefore, careful validation should always be performed. This study evalu the performance of five general circulation model–regional climate model (GCM–RCM) combinations selected from CORDEX–SA datasets over a humid tropical river basin in Kerala, India, for climate variables such as precipitation, maximum and minimum temperatures. This involves ranking of the selected climate models based on an EDAS (Evaluation Based on Distance from Average Solution) method and the selection of an appropriate bias correction method for the selected three climate variables. A range of indices are used to evaluate the performance of the bias-corrected climate models to simulate observed climate data. Finally, the hydrological impact of the bias-corrected ranked models is assessed by simulating streamflow over the river basin using individual models and different combinations of models based on rank. According to the findings, hydrological simulation using an average of all GCM–RCM pairs provides the best model output in simulating streamflow,

Structural Concrete / Volume 23, Issue 4 / p. 2106-2119

ARTICLE

Experimental investigation and prediction on the effects of glass and bamboo fibers as key mixture parameters in reinforced concretes using support vector regression

Ance Mathew, Muthiah Muthukannan, Sankaralingam Narayanasamy Ramaswamy

First published: 29 October 2021
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Discussion on this paper must be submitted within two months of the print publication. The discussion will then be published in print, along with the authors' closure, if any, approximately nine months after the print publication.

Abstract

Nowadays, reinforcement of fiber is necessary for concrete to enhance its quality with mechanical characteristics. The main objective of this work is to determine the mechanical properties of bamboo and glass fiber reinforced concrete. In concrete, E-glass and bamboo fibers are mixed with three different proportions such as 25:75, 50:50, and 75:25. Cubical-, beam-, and cylindrical-shaped concrete structures are developed for mechanical testing. After the curing period, the cubical structures are utilized for compressive strength testing, the cylindrical specimen for split tensile testing, and the beam-shaped specimen for flexural strength testing. From the outcomes, 1% fiber substance (glass and bamboo fiber proportions of 75:25) provides better split tensile strength 4.13 N/mm^2, compressive strength 42.08 N/mm^2, and flexural strength 7.7 N/mm^2. The comparative analysis of the proposed concrete composition with the conventional concrete mixture is also carried out. The experimental results are validated using support vector regression, and such predicted outcomes are closer to the experimented values. Furthermore, the ETABS platform is utilized for validating the proposed hybrid fiber reinforced concrete (HFRC) with single reinforcement-like glass particles. In which, the testing properties like bending moment, shear force, and axial force are favorable for the HFRC.

Open Research

Thermal efficiency analysis of buildings with phase change materials.

PDF (https://portalrevistas.uct.cl/index.php/safer/article/view/2577/2135)

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Section

Research Articles

Abstract

Increasing global temperature is alarming the need for construction industry to have thermally efficient building materials. Incorporating Phase Change Materials (PCM) in buildings is widely accepted method for reduction in temperature, thereby achieving better thermal efficiency. This paper focuses on the assessment of thermal performance of PCM-incorporated building under tropical climatic condition. The simulation process was carried out using Design Builder Software and the developed building model is validated with the results available in the literature. A parametric study is also performed in order to identify the effect of different parameters like building orientation, window to wall ratio, ceiling height and construction material on the indoor air temperature. The results showed that the maximum reduction was up to 2.76°C.

Keywords- Thermal Efficiency, Tropical climate, PCM

Autores Licencia Cómo Citar Estadística

Shabana M Thaha
Department of Civil Engineering St. Joseph's College of Engineering and Technology Palai, India

Bennet Kuriakose
Department of Civil Engineering St. Joseph's College of Engineering and Technology Palai, India

Rajesh Baby
Department of Mechanical Engineering St. Joseph's College of Engineering and Technology Palai, India.

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Emotion detection using facial expression recognition based on VGG16 network

RENJU RENJITH[1*], Dr JOBY PP[2]

[1]M techStudent, [2] Professor

Computer Science and Engineering,

St Joseph's college of Engineering and Technology, Palai, Kottayam, kerala, India.

***Abstract*:** Facial Expression Recognition is an innovation which utilizes biometric markers to recognize feelings in human faces. All the more unequivocally, this innovation is a supposition investigation device and can naturally distinguish the six fundamental or general articulations.. Facial Expression is one of the significant nonverbal channels through which human feeling state is conveyed, it includes the examination and acknowledgment of facial highlights. Facial Expression Recognition is classified as social biometrics and furthermore relevant in the field of computer vision . The traditional machine learning algorithms produce high accuracies for similar tasks, they lack to detect emotions of faces, or in different poses or environmental conditions. In this paper, a convolutional neural network architecture, VGG16 network , is proposed to address the FER problem by using a dataset. The proposed architecture is used to detect the emotion of the students in the online class using the facial expression .According to the experimental result, the accuracy of architecture was calculated to be as high 96% on a de-facto standard dataset, namely CK+. The experimental result confirmed that proposed neural network architecture is fast enough to be integrated into real -time FER application .

Index terms: Artificial intelligence, artificial neural networks, Convolutional Neural Network,Facial expression Recognition, Local Binary Pattern

I.INTRODUCTION

Emotion detection assumes a significant part in numerous spaces like clever security , mechanical technology fabricating, clinical brain research, media, and automotive security .Look acknowledgment (FER), which is a significant examination space of Human Machine Interaction (HMI), is the assignment of recognizing feelings by dissecting facial expression that assume a critical part in social collaboration [23] and pass on significant and clear data about the feelings of individuals [1]. As a characteristic outcome of that, different computer vision frameworks dependent on AI calculations have proposed FER where they were prepared utilizing explained face datasets. FER applications take the photographs of subjects as the information and produce the distinguished feelings through different examinations as the yield. The objective feelings fluctuate through the proposed approach which could be happiness, sadness, surprise, anger, disgust, fear, contempt, and neutral. The overall design of FER approaches contains three stages, to be specific, (1) preprocessing, (2) extraction, and (3) classification stage. In the first stage, the preprocessing stage, the nature of the information pictures is upgraded and the repetitive data is taken out. In the extraction phase, the preprocessed input information are changed into the best delegate highlights to lead a touchy and adaptable grouping method that could play out the correct forecasts as far as feelings. In the last stage mapping of input data to the target emotions takes place by virtue of the utilized classification algorithm. Characterization is accomplished by some uncommon grouping calculations, for example, Support Vector Machine (SVM), AdaBoost calculation, Artificial Neural Network (ANN) to specify a group. As the element extraction is significant for acceptable framework execution so additionally is the arrangement calculation carries out. Deep learning networks are more capable for extracting features from the training data and it provide more accuracy in emotion detection.For the proposed architecture ,CK+ dataset was used to examine the result of the emotion detection. Facial expression Recognition take the input image and classify the facial expression into six, which is happiness, sadness, surprise, anger, disgust and fear.

The main steps of the proposed system is as follows:

• The VGG16 architecture, which was specifically designed to detect the facial expression for a given photo in the tolerable limit to latency for real-time applications, was proposed whose accuracy was calculated to be as high as 95% on CK+ dataset

• The proposed architecture was implemented using open-source software (e.g. various Python libraries, OpenCV, Keras , Tensorflow, tkinter etc.), which makes the model more flexible to the proposed system.

• The VGG16 architecture model is build and train the model with CK+ dataset ,then create a dataset using image dataset generator for emotion detection in real time. The dataset which is created by us is trained by the VGG16 model and classify the real image or photo into 6 facial expression.

The rest of the article is structured as follows: Section 2describes the literature surveys . Section 3 describes the proposed VGG16 architecture for detect the emotion using facial expression in real time. Section 4 presents the experimental result and discussion. Finally, Section 5 concludes the paper with future directions.

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Heart Disease Prediction using Fog Computing based Wireless Body Sensor Networks (WSNs)

Dr. Subarna Shakya,
Professor, Department of Electronics and Computer Engineering
Central Campus, Institute of Engineering, Pulchowk
Tribhuvan University, Pulchowk
Lalitpur Nepal - 44600
Email: drss@ioe.edu.np

Dr. P P Joby,
Professor and Head,
Department of Computer Science and Engineering,
St. Joseph's College of Engineering and Technology,
Kerala.
jobypcse@gmail.com

Abstract- Wireless Body Sensor Network (BSNs) are devices that can be worn by human beings. They have sensors with transmission, computation, storage and varying sensing qualities. When there are multiple devices to obtain data from, it is necessary to merge these data to avoid errors from being transmitted, resulting in a high quality fused data. In this proposed work, we have designed a data fusion approach with the help of data obtained from the BSNs, using Fog computing. Everyday activities are gathered in the form of data using an array of sensors which are then merged together to form high quality data. The data so obtained is then given as the input to ensemble classifier to predict heart-related diseases at an early stage. Using a fog computing environment, the data collector is established and the computation process is done with a decentralised system. A final output is produced on combining the result of the nodes using the fog computing database. A novel kernel random data collector is used for classification purpose to result in an improved quality. Experimental analysis indicates an accuracy of 96% where the depth is about 10 with an estimator count of 45 along with 7 features parameters considered.

Keywords: Fog computing, disease prediction, ensemble methods, body sensor network, multi-sensor data fusion

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An Effective Method for Recognition of Facial Expressions from Occluded Images

Shilpa Shiva[1,1], Suma R[2,1]

[1]M.Tech Student, [2]Associate Professor
[1]Department of Computer Science and Engineering, St. Joseph's College of Engineering and Technology, Pala, Kottayam, APJ Abdul Kalam Technological University, Kerala, India

Abstract: The occluded facial expression recognition (FER) technology is challenge in PC vision space. Numerous strategies have been applied to acquire exact and proficient outcomes in facial expressions. In this paper we proposed Local Binary pattern (LBP) method to recognize the occluded facial expressions from the images or faces. And also doing accuracy based comparison with the Wasserstein Generative Adversarial Network (WGAN) method and LBP method. The LBP which is a surface depiction strategy, that portrays the surface component of an image. The WGAN network which is used to measure the real/fake of the generated images. Finally, after the comparison of LBP and WGAN find which one is better method based on the accuracy performance. That is, the proposed method or already existing method. The exploratory outcome shows that the proposed method is superior to the existing method. Therefore, this method proposed in the paper realizes face recognition with occlusion in complex environment and meets the needs of practical applications. The proposed methods are tested using FER dataset.

Key Words **- Facial Expression Recognition, Local Binary pattern, Occlusion, Wasserstein Generative Adversarial Network.**

I.INTRODUCTION

Most of the facial expression recognition is done in the area of machine learning. The machine learning is an application of artificial intelligence (AI), that provides system the ability to automatically learn and improve from experience without being explicitly programs. Machine learning mainly focuses on the development of computer programs, that can access the data and use it learn for themselves. The other use, it is applicable in many fields. Such as, image and speech recognition, medical diagnosis, prediction, classification etc. Then the artificial intelligence, which have the recognition ability in human expression. Human vision is easily replicated by computer learns human vision and performs necessary action to get accurate output.

The computer interaction also used in the case of facial expression recognition. Facial expression recognition is the errand of characterizing the expression on face images into different classifications. Such as anger, happy, sad, surprise and neutral. Facial expression is used to detect the expressions in human faces. This innovation is a supposition examination device and can consequently distinguish the five essential or universal expressions. Facial expression recognition is a type of non-verbal communication, which is the principle methods for communicating social information between human beings. Partial occlusion introduced in the face is one of the significant obstructions for precise FER in true conditions. FER is a difficult subject since it is an interdisciplinary innovation, and the innovative work of FER can advance both the hypothetical importance and life applications [19], [22]. As of now, the vast majority of the connected works of this innovation is to distinguish un-occluded facial expression images, and the amazing exploration results are unending. In any case, in fact, the facial expression images by the picture getting device consistently have incomplete occlusion, which for the most part fuse occlusions from hands, glasses, covers, and so forth. These occlusions can meddle with the extraction of enunciation features and impact the precision of expression affirmation [6]. When recognizing the facial expression in occlusion cases, a system can see precisely under occluded conditions is for the need vital. With issues, like light and clamor, being addressed in a steady progression, analysts accept that a really good vigorous acknowledgment technique should be cable to solve the problem of expression recognition under occlusion. The computer interaction also used in the case of facial expression recognition. Facial expression recognition is the errand of characterizing the expression on face images into different classifications. Such as anger, happy, sad, surprise and neutral. Facial expression is used to detect the expressions in human faces. This innovation is a supposition examination device and can consequently distinguish the five essential or universal expressions. Facial expression recognition is a type of non-verbal communication, which is the principle methods for communicating social information between human beings. Partial occlusion introduced in the face is one of the significant obstructions for precise FER in true conditions. FER is a difficult subject since it is an interdisciplinary innovation, and the innovative work of FER can advance both the hypothetical importance and life applications [19], [22]. As of now, the vast majority of the connected works of this innovation is to distinguish un-occluded facial expression images, and the amazing exploration results are unending. In any case, in fact, the facial expression images by the picture getting device consistently have incomplete occlusion, which for the most part fuse occlusions from hands, glasses, covers, and so forth. These occlusions can meddle with the extraction of enunciation features and impact the precision of expression affirmation [6]. When recognizing the facial expression in occlusion cases, a system can see precisely under occluded conditions is for the need vital. With issues, like light and clamor, being addressed in a steady progression, analysts accept that a really good vigorous acknowledgment technique should be cable to solve the problem of expression recognition under occlusion.

In real life conditions there is a high probability that a few pieces of the face become impeded by shades, a cap, a scarf, hands moving over the mouth, a mustache or hair, and so on. Occlusion can significantly change the visual appearance of the face and seriously

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NearByMe - Shared Parking System

Allen Jose[1], Alan K George[1], Amel John[1], Joseph Mathew[1], Bino Thomas[2]

[1]*UG Student, Dept. of CSE, SJCET, Palai, Kerala, India*
[2]*Associate Professor, Dept. of CSE, SJCET, Palai, Kerala, India*

Abstract - *Vehicle parking space is a major problem in cities and highly populated areas of India. Most of the cities in the country are suffering from a lack of parking areas, especially at peak times. The rapid increase of car ownership had created an imbalance between the required demand and supply of parking space. Our work mainly focuses on solving the problem related to parking spaces by using the concept of localized parking spaces. The system is a smart parking application that enables users to find and book the localized slots for parking their vehicles. The private parking space at home could be rented out, when not in use, along with other parking spaces. Everyone with a piece of land could be a spot provider, and they need to register in the App. A space owner's land, when become free, can be issued to vehicle owners by this system. Vehicle owners who are looking for parking space around an area can use these free spaces by paying the money. The space owner can list out the time slots when their parking spaces are available, in advance. The system allows vehicle users to find the slots with a GUI interface in the application and can pre-book their slots. Thus the unused private parking space can be given rental by the owner for a specific period. This system ensures an enhanced availability of parking spaces, helps to reduce conjunction, helps the spot provider to earn some money and to localize the parking spots to find out the nearby parking space where the contemporary pay and park systems are not available.*

Key words: Smart parking, Payment portal, GUI interface.

1.INTRODUCTION

The ongoing urbanization process makes parking a major problem for citizens because of the limited parking space available in cities. One solution is to build a multi-level car park infrastructure so that more cars can be parked in an area. This is a better-voted solution, but the major drawback is massive infrastructure investment and ongoing maintenance[1]. It is also possible to reduce the parking crisis by encouraging the public to use public transport, such as buses, rail, metro. However, public transport may not be large in developing countries and may not have a deep penetration near the outskirts. Therefore, if we can create smart parking spaces with better usability, people can save their time and money by saving gasoline waste and time to find a parking lot along with reduced emissions. This would also reduce road congestion[2]. Every locality has access to privately owned unused land. If some of these lands can create smart parking pools, the intensity of vehicle congestion on the roads looking for a vacant parking lot can be reduced[3].

The landowners can simply rent out their property so people can use these slots and reduce congestion. An affordable parking ecosystem will be built using this approach. The landowner shall get returns from his land with no capital investment, with the assurance that he owns the property. This solution could be extended to accommodate existing parking systems for migration to the proposed system.

2. EXISTING SYSTEMS

Some similar applications or web pages that are useful for NearbyMe are listed below:

2.1 Parkgene

Parkgene, developed by PARKGURU Group, offers a Blockchain as an accommodation predicated platform using cryptocurrency (tokens and wallets) to transact the parking lot between the owners and the terminus users [4]. In this approach, the landowner should shoulder the whole burden of establishing the parking space. The owner can rent out space through the park gene platform and generate revenue out of it.

2.2 Parkaide

Parkaide provides a smartphone predicated application for parking space booking with no ticketing[5]. The mobile app has the option to cull the car park of your accommodation. After culling which car park and predicated on the duration of the stay, one can make payment through a token method and you can avail the parking lot for the allocated time.

2.3 Parkaidapp

Parkaidapp is an augmented reality-based platform that shows the parking slot and other details of street parking using the crowdsourcing concept[6]. Here users can choose how long they need parking for and they can see streets where parking is allowed.

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WE4YOU - System for Online Medicine Purchasing and Online Consultation

Albin Francis[1], Amala Saji[1], Aparna Thomas[1], Dhaya Mathew[1], Mereen Thomas[2]

[1]UG Student, Dept. of CSE, SJCET, Palai, Kerala, India
[2]Assistant Professor, Dept. of CSE, SJCET, Palai, Kerala, India

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Abstract - Health is a vital part of our life, we must ensure that we get the best quality of treatment and also the purchase of medicine through pharmacies is not easily accessible. There are situations when the medicines are not available in the hospital pharmacy or any local pharmacy at the time of requirement which has resulted in people's lives in critical condition. Especially during this pandemic situation all our basic needs have come to a halt and there is a need to depend on online platforms for our livelihood including purchasing groceries, consulting doctors online. We propose a system which will make the users' life easier. "We4you" is an online platform for purchasing medicine anytime from any location within a fingers tap. Users can purchase medicine online through our app provided they upload their prescription and get it delivered at their doorstep through our agents at the earliest. Once the prescriptions are verified, we place the order with our medicine agents. We have a chatbot system where the users can have a live communication with their preferred hospital staff for enquiries. The users can also consult the doctors online. We will assign the doctors who are available at that time which will avoid the pain of searching for a doctor and also reduces the rush in taking the appointment at the hospital. The medicines which are prescribed by the doctors are send to the pharmacy directly without the involvement of users. The doctors can suggest for a further check-up and the appointment can be made right away. We also filter out the best hospitals or doctors around the users opted location through their previous reviews and ratings which makes the app more user friendly. Our app makes our users' lives more relaxed and simpler.

***Key Words*: Online medicine, Online Consultation, Medicine purchasing, Live chat, Application**

1.INTRODUCTION

The aim of the project is to develop a system which can be used to purchase medicine and consult doctors anytime from anywhere. It is developed using android studio with flutter language. Our system can be used by any person irrespective of their age. The main purpose of our project is to avoid the time taken in purchasing medicine in a physical store and waiting long hours to get an appointment with the doctor. Also the doctors can give a convenient time and date to the patients if further check up is needed which will avoid the time delay in getting an appointment with the same doctor. Through this platform not only the users can purchase but also can get it delivered to their location. The services we provide are accessible in a finger tap and also it can be utilized by anyone as we tried to bring out the minimal design. Purchasing medicine has become a tedious job nowadays. One of the main problems that we face in our daily routine is the unavailability of required medicines at the time of your need and also a huge rush in pharmacies which keeps patients or customers waiting, which results in wastage of time. There are also people who don't have easy access to pharmacies. Secondly, Pre-booking systems are not often followed in Kerala. Also to get an appointment as a walk-in patient requires a lot of patience as there can be a huge rush in the booking counter or many procedures we have to go through to get registered there. Finally in India several cases are being reported for misuse of drugs among the youth which happens due to the mere carelessness of pharmacists or the doctors. The project is based on an online medicine purchasing application where all the registered users can purchase their medicine by just uploading their prescription. The user can register in our app by providing their basic details such as mobile number, Email-id etc. The logged in user can avail any of our services without any interruptions. The primary feature of our system is the online purchasing of medicines. The user has to upload their prescriptions and can purchase any of the medicines which are listed on the prescription. The prescribed medicine will be delivered to the customer. The customer has the option to pay the amount online or during the delivery. This helps the individuals in saving time going to the pharmacy and purchasing the medicines. The user can also avail our online consultation option. Once the user conveys their symptoms that they are facing, we will direct them to the concerned doctor who's available at that time. The doctor can prescribe them medicines which will be uploaded to the app and the admins will send it to the pharmacy nearby to the customers locations and from there the delivery person will collect and hand it over to the user. This avoids the pain of the patients in purchasing the medicines from the physical store. If the doctor cannot identify the problem by examining the patient online, he will assign them a date and time to have a physical consultation with him.The user can also search for the best

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Ignis: Fire Detection and Mitigation System

Rithin Jose[1], Romal Roy[1], Roop Saji[1], Rose Maria M T[1], Ashly Thomas[2]

[1]*UG Student, Dept. of CSE, SJCET, Palai, Kerala, India*
[2]*Assistant Professor, Dept. of CSE, SJCET, Palai, Kerala, India*

Abstract - *It is observed that during a fire in a building 83% of deaths are the result of smoke inhalation rather than burns due to the inability to find a safe route with minimal exposure. So our system is a camera-based fire monitoring system that can monitor the specified area in real time. The users will initially register on the system through a QR code linked to the web platform of the system. When a fire or smoke is detected using YoloV5 algorithm, it will send the corresponding visuals to a security personnel or a person designated using webRTC on the platform. The system makes a final confirmation based on the submitted data by this person, who will make sure the fire can be cut off at its early stages but during a worst case scenario the security personnel can send an alert through the system to evacuate the building which will be received to all users present via the web platform. When people try to evacuate through the same path, it will create a congestion in the path and thus make it difficult to move through it. Therefore a IoT based method is introduced to reduce the congestion. The path with less crowd density, moderate crowd density and high crowd density will be shown using green light, orange light and red light respectively. Depending on the crowd density the people will be dynamically routed to the exit.*

Key Words: Fire detection, Web platform, Yolov5, WebRTC, Dynamic Routing, IoT.

1.INTRODUCTION

Our Project aims at detecting fire in a building at early stages to contain and extinguish it by using real time camera feed. In case the fire is intense our system will provide an efficient and hassle free mitigation route which will be dynamically routed by the system by taking the population density into account. When people try to evacuate through the same path, it will create a congestion in the path and thus make it difficult to move through it. Therefore a IoT based method is introduced to reduce the congestion.

1.1 Background

With the rapid growth in population, buildings are also growing vertically due to the shortage of occupancies. However, with these buildings growing vertically, there arise problems regarding the safe evacuation of people during an emergency like a fire. Similarly, with the growth of insulating materials which catch fire easily and their excessive use in building, a threat to the life of buildings and humans is also increasing. Many people lost their lives, and more are admitted to hospitals due to the fire in India. On an average 520+ injuries and 40+ deaths occur per year according to the National Fire Protection Association.

A fire Accident occurs very rarely, but once it occurs it's consequences will be devastating. As a result, there is substantial attention given by researchers worldwide for the development of intelligent building systems. Many of these casualties can be avoided if we detect a fire early and guide people to a safe location. To build a suitable fire detection and safe evacuation system it is necessary to focus on parameters such as appropriate sensors, software and hardware tools, and combination techniques and at the end effective user interface.

This project gives systematic implementation of intelligent fire detection and evacuation systems as a combination of fire detection (image and video processing), evacuation assistance and crowd monitoring and prediction.

1.2 Scope

History has proven that early detection of a fire and the signaling of an appropriate alarm remain significant factors in preventing large losses due to fire. Properly installed and maintained fire detection and alarm systems can help to increase the survivability of occupants and emergency responders while decreasing property losses. Early detection also plays a significant role in protecting the safety of emergency response personnel. Property loss can be reduced and downtime for the operation minimized through early detection because control efforts are started while the fire is still small.

In general, fire alarm systems are installed :

1. To provide for the safety of occupants in buildings, and to make provision for their evacuation or refuge during a fire or other emergency.

2. To provide the fire department with early notification of a fire in a building and to direct them to the area of risk.

Innovative Data Communication Technologies and Application pp 1–12

DIBSM: Dominance on Incomplete Big Data Using Scoring Method

Anu V. Kottath & Prince V. Jose

Conference paper | First Online: 03 February 2021

Part of the Lecture Notes on Data Engineering and Communications Technologies book series (LNDECT,volume 59)

Abstract

Big data is a collection of data which increases exponentially; generally, big data is complex in nature due to its dimensional characteristics. Present data managing tools do not efficiently process and store huge data. In an incomplete data set, there will be missing nodes, which will be randomly distributed in its dimensions. When the data set is large, it is very difficult to get the information. So the dominance value in the data set is considered as most significant

COMPUTER AIDED DETECTION OF LUNG CYSTS USING CONVOLUTIONAL NEURAL NETWORK (CNN)

Kishore Sebastian, D. S. Devi • Published 2021 • Computer Science

Lung cancer is one of the baleful diseases. The survival rate will be low if the diagonisation and treatment of lung tumour gets delayed. But the survival rate and saving lives can be enhanced with opportune diagnosis and prompt treatment. The seriousness of the disease calls for a highly efficient system that can identify cancerous growth with high accuracy level. Computer Tomography (CT) scan is used to obtain detailed picture of different body parts. However it is difficult to scrutinize the… Expand

Figures and Tables

17 References

Related Papers

Figures and Tables from this paper

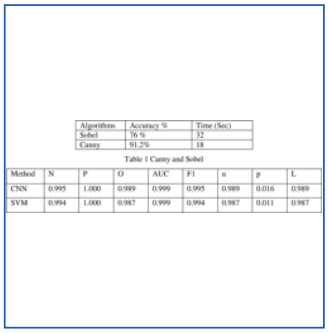


Table 1

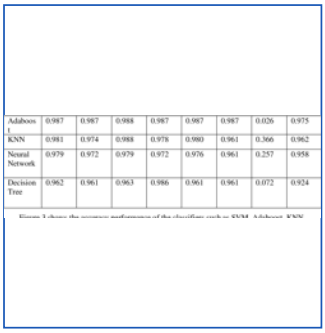
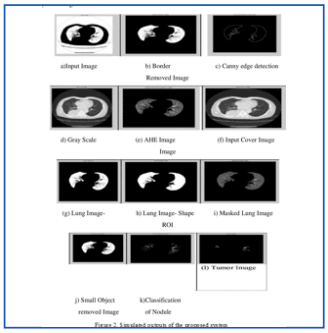


Figure 3



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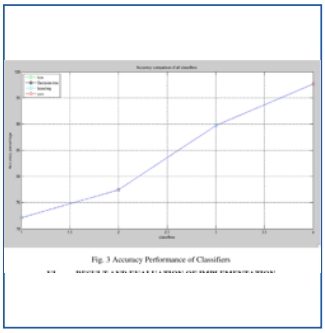

Table II

17 References

TRANSIST ONLINE
An International Journal
Transactions on Innovations in Science and Technology

A Systematic Survey on Comparison of Different Prediction Methods and Crime Analysis

Abstract: *Crime analysis methods are used to analyze the crime data for finding different data trends and patterns in the crime. Crime can be predicted using different models. Crime analysis can find the trend of crime type in different locations. As the crime increases, the data to be processed also increases. The ability to predict the crimes based on the location, sample, and time can serve as a valuable source of information. To predict crime correctly with higher overall performance is a hard task due to the increasing numbers of crime. Therefore, crime prediction technique is critical to discover the future crime and thus to decrease the numbers of crime. In this survey, we are discussing about the overall performance of prediction models such as ARIMA model, Recurrent Neural Network, Long Short Term Memory which are used for crime analysis and prediction.*

Original Paper | Published: 26 July 2020

Integrated fuzzy-based modular cell balancing using mono circuitry for electric vehicle applications

Ginu Ann George, Fossy Mary Chacko, A. Prince & M. V. Jayan

Electrical Engineering **103**, 153–165 (2021)

454 Accesses | **2** Citations | Metrics

Abstract

Series–parallel connected Li-ion battery string is an inevitable component of electric/hybrid electric vehicle (EV/HEV). One of the common concerns of battery system is charge imbalance among the series connected batteries, which leads to over voltage/under voltage stress, reduced cycle life and even fire hazard. To overcome these issues, various

Tomson Thomas*, Prince Asok, Anoopraj Mattathil Radhakrishnan and Sunil Kumar P. R. Puthenpurayil

Real-time hardware emulation of wind turbine model with asynchronous generator under hardware-in-the-loop platform

https://doi.org/10.1515/ijeeps-2021-0095
Received February 15, 2021; accepted May 20, 2021;
published online June 21, 2021

Abstract: Renewable energy sources are becoming as one of the major generation strategies around the world. The wind energy systems have been technologically advanced and integrated to the power system in a rapid routine. This paper looks into the modelling as well as operational exploration of a three blade wind turbine connected to asynchronous generator. State-of-the-art wind turbine topologies and a comparative summary of real-time simulation technologies for electrical systems are described. A 2.4 MW wind turbine with three blades is modelled for the analysis of power characteristics. The shift from sub-synchronous to super-synchronous mode is analysed for type-A wind energy conversion system (WECS) with 2 MW asynchronous generator by using MATLAB/Simulink model. The step-by-step standard operating procedure for modelling and real-time simulation of 2 MW type-A WECS having asynchronous generator under hardware-in-the-loop platform is elucidated. The steady state and transient behaviours of the WECS are validated by the real-time emulation under a hardware-in-the-loop platform.

Keywords: asynchronous generator; hardware-in-the-loop; renewable energy; wind energy conversion systems.

***Corresponding author: Tomson Thomas**, Electrical Engineering Department, Rajiv Gandhi Institute of Technology, Government Engineering College Kottayam, APJ Abdul Kalam Technological University, 686501, Kerala, India, E-mail: tomsonpala@gmail.com. https://orcid.org/0000-0002-8356-7250
Prince Asok, Anoopraj Mattathil Radhakrishnan and Sunil Kumar P. R. Puthenpurayil, Electrical Engineering Department, Rajiv Gandhi Institute of Technology, Government Engineering College Kottayam, APJ Abdul Kalam Technological University, Kerala, India, E-mail: prince@rit.ac.in (P. Asok), anoopuraj@gmail.com (A. Mattathil Radhakrishnan), sunil_thodupuzha@rit.ac.in (S. K. P. R. Puthenpurayil). https://orcid.org/0000-0001-9198-8410 (P. Asok). https://orcid.org/0000-0003-1093-6358 (A. Mattathil Radhakrishnan). https://orcid.org/0000-0002-8601-2293 (S. K. P. R. Puthenpurayil)

1 Introduction

Renewable energy sources are clean and inexhaustible energy which are environment friendly compared to fossil fuel centred generation. Sources from renewable energy like wind and solar are getting more importance in the energy sector. Total installed wind energy across the globe is estimated above 743 GW at the end of the year 2020. The global wind industry saw the addition of 93 GW of wind power capacity in 2020, as stated by the Global Wind Energy Council [1]. However increase of renewable generating stations with power electronic converters will produce more control difficulties in maintaining voltage, frequency and stability [2–6]. Reactive power control and low voltage ride-through capabilities of wind energy conversion systems (WECS) are also to be improved to support the power system [7–9].

Real-time simulation technologies for electrical systems are generally used in the electrical power systems by research organizations, utilities and manufacturers of equipment. Conventional test system of electrical systems with large rating has high capital cost and energy utilisation. Better control capability for real-world applications can be achieved in the research laboratory with the help of real-time modelling than that of low power systems. Various real-time platforms are available for real-time research of large rated electrical energy systems. Real-time simulation of WECS can be conducted under various platforms such as dSPACE, RTDS, OPAL-RT etc. [10–14]. A detailed comparison of real-time simulators is described in Table 1.

Hardware-in-the-loop (HIL) platform is feasible for the validation of wind energy conversion systems in real-time [15–18]. HIL platforms have reduced simulation step, time of model compilation and resolution of digital sampling [19]. Typhoon HIL-402 is based on FPGA processor and can be adopted real-time simulation of intricate models of electrical energy systems [20]. Typhoon HIL systems have the features such as enhanced switching frequency of 200 kHz and simulation time step of 500 ns for the electrical simulation including power electronics, micro-grid and power systems, in real-time.

Scientific Paper | Published: 06 July 2021

Hardware-efficient auto-reconfigurable hearing aids using 3-level octave interpolated filters for auditory compensation applications

Tomson Devis & Manju Manuel

Physical and Engineering Sciences in Medicine **44**, 785–798 (2021)

Abstract

A reconfigurable hearing aid is a generic type that can be used for various hearing disabilities without modifying the device hardware. This requires several trials to identify the best matching with the impaired person's audiogram. The objective of this paper is to propose a novel reconfigurable hearing aid of low complexity with auto-adapting capability which makes it suitable for different types of hearing disabilities ranging from mild to severe intensities. The audio spectrum is divided into three regions and for each region, four different schemes are proposed. An automatic selection of the optimum scheme is

Published: 19 September 2020

Pixel matching search algorithm for counting moving vehicle in highway traffic videos

Harikrishnan P. M., Anju Thomas, Nisha J. S., Varun P. Gopi & P. Palanisamy

Multimedia Tools and Applications **80**, 3153–3172 (2021)

Abstract

Traffic monitoring through video processing is one of the hot research areas in the Intelligent Transportation System (ITS). Vehicle counting systems should be simple enough to be applied in real-time circumstances. A novel and fast algorithm for vehicle counting from a traffic video sequence is proposed in this paper where the vehicle tracking step is not necessary. A reference model is only created in the video frames for a narrow area. When going through this narrow area, the moving vehicles are identified as foreground objects. Detection of moving vehicles is achieved by integrating approximated median filter based background subtraction with binary integral projection. The

Journal of Green Engineering (JGE)

Volume-10, Issue-10, October 2020

Efficient Detection of Sheet Metal Defect using KNN

[1]Anoopa Jose Chittilappilly, [2]Giby Jose, [3]Kamalraj Subramaniam

[1]*Department of Electrical and Electronics Engineering, Ilahia College of Engineering and Technology, Muvattupuzha, Kerala, India.*
[2]*Department of Electronics and Communication Engineering, St.Joseph's College of Engineering and Technology, Palai, Kerala, India.*
[3]*Department of Electronics and Communication Engineering, Karpagam Academy of Higher Education, Coimbatore, Tamilnadu, India.*

Abstract

Image restoration and classification algorithms are used for recognizing the defects in industrial applications. The concerned processes are acquirement of metal sheet image, converting original image into gray scale, restoring the image, feature extraction and defect detection. The important preprocessing technique, Image restoration has been addressed with the Non-Local Means (NLM) based algorithm. To improve the performance of the defect detection system, the k-Nearest Neighbour (KNN) algorithm has been suggested. Accuracy, precision, recall, specificity, sensitivity, G-Means and F-Measure are the indices that evaluated the performance of the detection algorithm.

Keywords: Image Restoration, Classification, Non-Local Means (NLM), Average RGB Features, K-Nearest Neighbour (KNN).

Journal of Green Engineering, Vol. 10_10,9670-9680.

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Volume 9 | Issue 3 | Print ISSN: 2395-6011 | Online ISSN: 2395-602X (www.ijsrst.com)

Green Process Innovations and Green Product Innovations: An Environmental Management Strategy and Its Growth Phases in the Manufacturing Sector

Soumya Varghese*[1], Dr. Jagathy Raj V.P[2]

*[1]Research Scholar, Department of School Management Studies, Cochin University Science and Technology (CUSAT), Ernakulam, Kerala, India

[2]Professor, Department of School Management Studies, Cochin University Science and Technology (CUSAT), Ernakulam, Kerala, India

ABSTRACT

A company faces several strategic options when it responds to environmental issues (Banerjee, 2002). Green practices have gained in popularity for manufacturers in the hopes of mitigating their environmental damages while achieving performance gains (Cronin, Smith, Gleim, Ramirez and Martinez, 2011; Qi et al., 2010). Adoption of environmental management (referred to as EM hereafter) activity depends on different strategies and objectives of the firm (Hart, 1995; Porter and Linde, 1995; Darnall, Henriques and Sadorsky, 2008). In the words of Cramer (1998), Montabon, Sroufe and Narasimhan (2007), EM is the activities that directly aim to protect the environment, or the techniques, policies and procedures used explicitly by a firm to monitor and control the impact of its operations on the natural environment. Since different "best practices" of management lead to different kinds of competitive advantage, it is essential to focus on specific "best practices" that reduce firms' negative impact on the natural environment. Hence the paper primarily focuses on examining the changing phases incorporate environmental management strategies and the role of green product innovations and green process innovations for sustainable development.

Keywords: Green process innovations, Green product innovations, Environmental management, Environmental management strategy, Manufacturing sector.

I. INTRODUCTION

Jimenez, Gil and Lorente (2001) stated that EM might be considered a competitive priority for manufacturing because it satisfies two basic requirements- obtaining within the production scope and creating a competitive advantage. Under the "environmental concept," industries will design, plan and produce non-polluting or low-polluting products. Hence "environmental management" to the original operation management has been regarded as "the fifth management" for businesses (Jennings and Zandbergen, 1995). Gallego Alvarez, Ortas, Vicente Villardon and Alvarez Etxeberria (2017) argued that environmental strategies are getting modified to become compatible with the characteristics of the social and institutional

Materials Today: Proceedings

Volume 47, Part 15, 2021, Pages 5302-5307

Effect of discharge gap on EDM using desirability function analysis

Lijo Paul, Ivin Jose, Jestin Jose

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https://doi.org/10.1016/j.matpr.2021.06.051

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Abstract

Electro Discharge Machining (EDM) has been developed as a precise machining process to produce accurate features in electrically conducting materials. A high-speed self- adjusting EDM approach is needed with feedback system to remove the debris in the machining process. In the current study, the micro feature machining in the copper plate is investigated in order to get the optimum gap distance in EDM process. With the change in the gap distance and depth of the hole drilled, the linear actuator automatically adjusts the gap for the electrode. So it is crucial to find out the optimum input parameters that contribute for maximum result. For the experimental analysis Taguchi L27 orthogonal array technique is used. With the help of Desirability Function Analysis (DFA) and Analysis of Variance (ANOVA), the optimum parameters values

Author

Lijo Paul

View in Scopus

View the author's ORCID record

Corresponding author at: Dean PG, Dept of Mechanical Engineering, St.Joseph's College of Engineering and Technology, Palai, Kottayam, Kerala

lijo.paul@gmail.com

Dept of Mechanical Engineering, SJCET Palai, Kottayam, Kerala 686579, India

Advances in Materials and Processing Technologies ›
Volume 8, 2022 - Issue 3

Research Article

Effect of sensing mechanism on machining performance of ECDM process

Lijo Paul ✉ nedi Babu & Libin V K

a Dept of Mechanical Engineering, St.Joseph's College of Engg and Tech Pala, Kottyam, India

Correspondence
lijo.paul@gmail.com
https://orcid.org/0000-0003-4671-7587

nline: 28 Jun 2021

30/2374068X.2021.1945285

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ABSTRACT

Electro Chemical Discharge Machining (ECDM) has been introduced as an un-conventional hybrid process in last few decades for machining of materials which are electrically non-conducting as well as conducting. In the current work, an effort is carried out to modify the microfeatures produced in ECDM machining with a sensor mechanism. An ECDM setup is fabricated with a sensor mechanism in order to reduce the irregularities in the micromachining process. The microholes machined with a

sensor mechanism has shown improvement in terms of circularity. A multiobjective optimisation is carried out with Grey Fuzzy Reasoning Analysis (GFRA) in order to

Original Paper | Published: 29 January 2021

Model Prediction and Experimental Study of Material Removal Rate in Micro ECDM Process on Borosilicate Glass

Lijo Paul & Somashekhar S. Hiremath

Silicon **14**, 1497–1510 (2022)

Abstract

Miniaturization of products has become a major technological challenge in production industries. Material removal in microscopic and sub-microscopic level has become a demand for producing such products. Electro-Chemical Discharge Machining (ECDM) is one of the hybrid non-conventional machining processes to machine materials that are electrically conductive and non-conductive at a micro-level utilizing the principles of Electro Discharge Machining (EDM) and Electro-Chemical Machining (ECM). The most common nonconductive materials machined with this process are various types of glasses, ceramics, composites, etc. In the current paper, a Finite Element Model

ScienceDirect

Materials Today: Proceedings

Volume 58, Part 1, 2022, Pages 1-6

Modelling and 3d priniting of patient specific cardiovascular graft

Anjaly Vinod [a], Lijo Paul [b]

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https://doi.org/10.1016/j.matpr.2021.11.443 ↗
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Abstract

Engineered vascular grafts are in high demand among patients with cardiovascular disorders who need bypass therapy which lack autologous healthy blood vessels. Furthermore, due to a severe global shortage of organ donors, there is a growing need for engineered vascularized tissue constructs as an alternative to organ transplants. The current artificial blood vessels used are of a standard design, and does not fulfil the size or structural specifications of different patients. In the current paper the need for patient-specific artificial blood vessels, which can be obtained through 3D CAD model from the patient's CT scan image is discussed. 3D slicer is used here for preparing the softcopy from CT scan. It is then 3D printed using two techniques FDM and SLA. FDM 3D printers create layers by depositing molten material in lines. SLA 3D printing uses liquid resin that is hardened by a very accurate laser to build each layer, allowing for considerably finer features and more consistent high-quality outputs. The stress analysis of the model is carried out in the current study.

Author

Lijo Paul

View in Scopus

Dean PG, Dept. of Mechanical Engineering, SJCET Palai, Kottayam, Kerala 686579, India

Corresponding author.

lijo.paul@sjcetpalai.ac.in

DE GRUYTER

Open Access | Published by **De Gruyter** | April 10, 2019

Secure Fingerprint Authentication Using Deep Learning and Minutiae Verification

V.M. Praseetha, Saad Bayezeed and S. Vadivel

From the journal Journal of Intelligent Systems
https://doi.org/10.1515/jisys-2018-0289

Abstract

Nowadays, there has been an increase in security concerns regarding fingerprint biometrics. This problem arises due to technological advancements in bypassing and hacking methodologies. This has sparked the need for a more secure platform for identification. In this paper, we have used a deep Convolutional Neural Network as a pre-verification filter to filter out bad or malicious fingerprints. As deep learning allows the system to be more accurate at detecting and reducing false identification by training itself again and again with test samples, the proposed method improves the security and accuracy by multiple folds. The implementation of a novel secure fingerprint verification platform that takes the optical image of a fingerprint as input is explained in this paper. The given input is pre-verified using Google's pre-trained inception model for deep learning applications, and then passed through a minutia-based algorithm for user authentication. Then, the results are compared with existing models.

Keywords: Biometrics; deep learning; convolutional neural network; inception model; minutiae; fingerprint

Combinatorial Analysis for Securing IoT-Assisted Industry 4.0 Applications From Vulnerability-Based Attacks

Gemini George ; Sabu M. Thampi All Authors

Abstract

Document Sections

I. Introduction

II. Literature Review

III. Modeling of Network Penetration Graph

IV. Combinatorial Analysis on the Network Penetration Graph

V. Algorithm for Isolation of Targets in the Network

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Citations

Abstract: Modern Internet of Things (IoT)-assisted networks deploy many critical computing devices in the edge of the network so as to mitigate the bottleneck of network latency an... **View more**

Metadata

Abstract:

Modern Internet of Things (IoT)-assisted networks deploy many critical computing devices in the edge of the network so as to mitigate the bottleneck of network latency and bandwidth outage. Such computing devices have become attractive targets of attackers, as they derive critical insights that can often regulate the underlying industrial processes. Security administrators have to analyze vulnerable configurations, and evaluate feasible hardening options to secure such systems. In this article, we investigate the security threats to the edge devices in the IoT-assisted networks because of the inherent vulnerabilities present in the IoT devices, and formulate a novel graphical security model to conduct vulnerability-based risk assessment in such networks. We further propose a set of combinatorial optimization techniques for security hardening. For securing the target devices, we propose a randomized algorithm to enforce isolation of potential target devices from the attackers. The algorithm produces the least number of vulnerabilities, the removal of which protects the targets. For densely connected networks, we propose another algorithm to identify a minimal set of vulnerabilities to be hardened so as to keep potential targets below admissible levels of risk. The approach includes the formulation of an integer linear program, which is relaxed to solve in polynomial time, followed by a round-off technique to find the actual solution.

Advances in Computing and Network Communications pp 335–345

Deploy—Web Hosting Using Docker Container

Minto Sunny, Sen Shaji, Sheen Sabu, Udith Uthaman & Gemini George

Conference paper | First Online: 21 April 2021

Part of the Lecture Notes in Electrical Engineering book series (LNEE,volume 735)

Abstract

In traditional web hosting, websites/web applications are configured on a bare metal server a virtual private server. For hosting multiple websites, directories are created for each website and a Linux user is created corresponding to each website. This means that a single web server/application server daemon process is responsible for serving all these websites. This is called shared web hosting. This is not a suitable solution if your application handles secret or sensitive

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Application of Machine Learning In Healthcare with Suitable Examples

Bhagya Roy
Assistant Professor
St. Joseph's College of Engineering and Technology Palai,Kerala,India
bhagyaroy@gmail.com

Abstract: Machine Learning is modern and highly approached technological applications which became an enormous trend within the industry. Machine Learning is widely utilized in various applications. it's playing an important role in many fields like finance, life science and in security. Machine learning is employed to get patterns from medical data sources and supply excellent capabilities to predict diseases.

Keywords: Technological application, data source

I. INTRODUCTION

Machine learning is one of the most trending fiels of computer science industry. It contains wide range of application and research scope. The application differs from medical science to security analysis. Machine learning is a subset of Artificial Intelligence which collect data from given training data, analyze and give proper result or outcome. Machine learning learns from the data given and tries to predict the model from the learned data. Machine learning can be categorized as given below

- Supervised learning
- Semi-supervised learning
- Unsupervised learning
- Reinforced learning

A. Supervised learning

As the name suggest, there will be a "supervisor", a teacher in this type of classification.Here we train the machine using certain set of example data and the machine will learn from this example.

B. Semi-supervised learning

It is a combination of Supervised and Unsupervised learn- ing. Here during training small amount of labelled data will be mapped to a large amount of unlabelled data. The best classifier from the labelled and unlabelled data will also be identified.

C. Unsupervised learning

Unsupervised learning is the correct opposite of supervised learning. Here the machine should do the task like , it should classify the unsorted information based on the like and unlike characteristics in the data(without any proper knowledge of the data provided)

D. Reinforcement learning

There is no training data-set and it learns from its previous experiences. There is no correct answer key but the agent for reinforcement do whatever necessary to perform the given task.

II. WHY THERE IS A NEED OF MACHINE LEARNING IN HEALTHCARE?

Many citizens from foreign countries had lost their life every year because of error report in heath care centres. Machine learning can be used in such a situation for a greater extend because , it provided scalability, speed, accuracy (for a greater extend) , prediction of many result for health care domain also. Both doctor and machine tries to do the same work here. A doctor examine that patients symptom and comes to a conclusion about the type of disease he/she is suffering from the same, the machine also tries to find the disease from the training samples provided to the machine or by its past experience. So, if we apply machine learning to healthcare, it will be of great help.

International Journal of Applied Engineering Research ISSN 0973-4562 Volume 15, Number 9 (2020) pp. 930-932

Blockchain in Real Estate

Jubil Gea Joy[1], Mr. Kishore Sebastian[2]

[1,2]*Department of Computer Science and Engineering St.Josephs college of Engineering, Pala, Kerala, India.*

Abstract

The land transactions that happens around us is a long process which may even take months to complete. Not only it may take time it may also cost extra charges for intermediate people and also for the transaction. Not only it may consumes time and money it may also include fraud activities.

Blockchain, an emerging technology may provide a solution for this problem. Using blockchain, land or property transactions can be made more easier and secure. Transactions can be done within no due of time and the unwanted cost and people can be limited. The blockchain may prevent fraud activities included in a real estate or land transactions.

Keywords: Blockchain, smart contract, land transaction, real estate

I. INTRODUCTION

Land transactions in a real estate business is a long process which may take long time even months for the change of ownership from one person to other or from seller to buyer; even in the new world of technology. Not only the time but also it may cause unwanted cost for the land transaction.

In the present world, in the property transaction or in a real estate, it may include third parties like broker, document writer etc other than buyer and seller. A buyer and seller has to depend on a third party for their land transactions. Involvement of a third party in a transaction may cost extra charges. And the buyer and seller are forced to trust in that third party no matter what.

Even though we may got a faithful third party, there is no guarantee that there had not involved any fraud activities in the land transaction. Real estate or property transaction is an area where many fraud activities are involved. Many fraud activities were reported in the past and still it is continuing on.

The main fraud activity that is involved in this field is double spending. The seller can sign multiple agreements of sale on the same piece of property with multiple buyers with the help of multiple third parties (In most cases the third party will be a victim).

The blockchain as the name indicates ,is a chain of blocks which may contains list of growing records [4]. The block and chain are information and public databases respectively. The blockchain is a technology where we store information in a public database. The blockchain is a decentralized technology.

At first blockchain was created for bitcoins. But now it is been used with different technologies and in different fields.

By using the blockchain we can solve the problems that are faced in a property transactions or in real estates.

The blockchain may stores all the transaction that had done using it and they cannot be tampered. A blockchain may reduces unwanted costs, intermediates involved in a transaction. The contracts involved in a transaction will be written by the smart contracts.

II. BLOCKCHAIN ON REAL ESTATE

Property or land transaction can be done by using blockchain. While using blockchain we can make our property transactions more secure and faster.

As for now we can develop a private blockchain for land transaction. The persons or people who are interested in land transaction using blockchain have to join or register the blockchain for land transactions.

A registered user can only buy or sell property by using blockchain. The smart contracts of blockchain will helps in the process of land transaction. Once the buyer and seller agrees on terms and conditions (details about land) and the buyer wants to proceed the transaction then with the help of smart contract the land can be transacted.

A smart contract is a computer program which will be executed automatically when the pre-determined conditions are met. So when a transaction between buyer and buyee happens a contract between then will be generated by smart

International Journal of Applied Engineering Research ISSN 0973-4562 Volume 15, Number 9 (2020) pp. 930-932

Blockchain in Real Estate

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Land transactions in a real estate business is a long process which may take long time even months for the change of ownership from one person to other or from seller to buyer; even in the new world of technology. Not only the time but also it may cause unwanted cost for the land transaction.

In the present world, in the property transaction or in a real estate, it may include third parties like broker, document writer etc other than buyer and seller. A buyer and seller has to depend on a third party for their land transactions. Involvement of a third party in a transaction may cost extra charges. And the buyer and seller are forced to trust in that third party no matter what.

Even though we may got a faithful third party, there is no guarantee that there had not involved any fraud activities in the land transaction. Real estate or property transaction is an area where many fraud activities are involved. Many fraud activities were reported in the past and still it is continuing on.

The main fraud activity that is involved in this field is double spending. The seller can sign multiple agreements of sale on the same piece of property with multiple buyers with the help of multiple third parties (In most cases the third party will be a victim).

The blockchain as the name indicates ,is a chain of blocks which may contains list of growing records [4]. The block and chain are information and public databases respectively. The blockchain is a technology where we store information in a public database. The blockchain is a decentralized technology.

At first blockchain was created for bitcoins. But now it is been used with different technologies and in different fields.

By using the blockchain we can solve the problems that are faced in a property transactions or in real estates.

The blockchain may stores all the transaction that had done using it and they cannot be tampered. A blockchain may reduces unwanted costs, intermediates involved in a transaction. The contracts involved in a transaction will be written by the smart contracts.

II. BLOCKCHAIN ON REAL ESTATE

Property or land transaction can be done by using blockchain. While using blockchain we can make our property transactions more secure and faster.

As for now we can develop a private blockchain for land transaction. The persons or people who are interested in land transaction using blockchain have to join or register the blockchain for land transactions.

A registered user can only buy or sell property by using blockchain. The smart contracts of blockchain will helps in the process of land transaction. Once the buyer and seller agrees on terms and conditions (details about land) and the buyer wants to proceed the transaction then with the help of smart contract the land can be transacted.

A smart contract is a computer program which will be executed automatically when the pre-determined conditions are met. So when a transaction between buyer and buyee happens a contract between then will be generated by smart

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RESEARCH ARTICLE

WILEY

Event analysis and real-time validation of doubly fed induction generator-based wind energy system with grid reactive power exchange under sub-synchronous and super-synchronous modes

Tomson Thomas | **Prince Asok**

Department of Electrical Engineering, Rajiv Gandhi Institute of Technology Kottayam, APJ Abdul Kalam Technological University, Kerala, India

Correspondence
Tomson Thomas, Department of Electrical Engineering, Rajiv Gandhi Institute of Technology Kottayam, APJ Abdul Kalam Technological University, Kerala 686501, India.
Email: tomsonpala@gmail.com

Abstract

The insertion of renewable power generators into the power system network has been promoted by the environment protection aspects. Doubly fed induction generator (DFIG)-based wind energy system is one of the most viable technologies for sustained power generation. This paper focuses on the operational analysis of DFIG-based wind energy conversion systems (WECS) with real-time experimental validation. An event analysis is executed under sub-synchronous and super-synchronous speeds with the variation in wind velocity and reactive power exchange by controlling the rotor side converter and grid side converter under MATLAB/Simulink platform. The results of the analysis with reactive power exchange can be utilized for the enhanced control of power electronic converters of DFIG-based WECS for better support to the grid. The validation of results is accomplished by emulation of 2 MW DFIG-based three blade wind turbine system in the laboratory under a real-time hardware-in-the-loop platform.

KEYWORDS

doubly fed induction generator, hardware-in-the-loop, renewable energy sources, renewable power generators, wind energy conversion systems

1 | INTRODUCTION

Renewable energy sources have substantial potential to generate electricity as they are abundant in nature and are harmless as well. Global warming is considered as a major hazard to the environment and the use of conventional generating systems with fossil fuels adds to this crisis. Pollution of the environment can be reduced by renewable energy sources such as solar energy and wind energy which are treated as unpolluted energy with zero carbon dioxide emission. The global installed capacity of wind turbines has been enhanced to over 651 GW in the year 2019 as per the data from the Global Wind Energy Council.[1]

Renewable power generators (RPGs) will curtail the conventional fossil fuel generators. Penetration of renewable energy sources in power system, will improve its voltage profile and reliability. Optimal placement of RPGs has been

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A low-complexity 3-level filter bank design for effective restoration of audibility in digital hearing aids

Tomson Devis[1,2] and Manju Manuel[2]

Abstract

A low-complexity method for sub-band decomposition of audio signals in digital hearing aids for audibility restoration applications is described in this paper. This 3-level filter bank is capable of generating an array of 4, 8, and 16 sub-filters from a single finite impulse response filter. The prototype low pass filter is accomplished using the Parks McClellan algorithm with a minimal number of 28 multipliers. Fractional interpolation technique is utilized to generate more number of sub-bands with narrow bandwidth from the prototype filter. This filter bank can be used for patients with any degree of hearing impairment to compensate his audiogram. The selection of filter bank is based on the rate of change of impairment recorded in the audiogram. Apart from reduced complexity, the developed filter bank has the advantage of requiring only minimal hardware, which makes the implementation of cost-effective hearing aids a reality.

Keywords: Multirate system, Filter bank, Hearing aid, Fractional interpolation, Audiogram

Introduction

Hearing impairment is one of the most common sensory disturbances affecting humans. Estimates by World Health Organization has revealed that by 2050, one in every ten people around the globe will be suffering from disabling hearing loss [1]. Genetics, noise, diseases, drugs, ageing etc. are some of the major factors resulting in hearing impairment. There are various methods employed to overcome this defect such as, use of hearing aids and other assistive-listening devices and cochlear implants. Among these, the most effective way to compensate common hearing loss is to employ a hearing aid system which can selectively intensify the sound signals in order to suit the hearing characteristics of the patients and can also improve the speech intelligibility [2, 3].

Article PDF Available

Video content analysis and retrieval system using video storytelling and indexing techniques

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Authors:

Jaimon Jacob **M. Sudheep Elayidom** **Devassia V P**
St. Joseph's College of Engineering and Technology, Palai

Abstract and Figures

Videos are used often for communicating ideas, concepts, experience, and situations, because of the significant advances made in video communication technology. The social media platforms enhanced the video usage expeditiously. At, present, recognition of a video is done, using the metadata like video title, video descriptions, and video thumbnails. There are situations like video searcher requires only a video clip on a specific topic from a long video. This paper proposes a novel methodology for the analysis of video content and using video storytelling and indexing techniques for the retrieval of the intended video clip from a long duration video. Video storytelling technique is used for video content analysis and to produce a description of the video. The video description thus created is used for preparation of an index using wormhole algorithm, guarantying the search of a keyword of definite length L, within the minimum worst-case time. This video index can be used by video searching algorithm to retrieve the relevant part of the video by virtue of the frequency of the word in the keyword search of the video index. Instead of downloading and transferring a whole video, the user can download or transfer the specifically necessary video clip. The network constraints associated with the transfer of videos are considerably addressed.

Set of shots in video clip-…

Video index corresponding t…

Effect of brand on customer loyalty - Study on the Post Office Savings Bank of Kerala circle

Dr. Suma Mathew

Associate Professor
St. Joseph's Business School
St. Joseph's College of Engineering and Technology, Palai
Choondacherry P.O. Kottayam (District) Kerala State

***Abstract*: The brand name has a direct and positive association with perceived quality of services and customer satisfaction. Establishments should have a strong and powerful brand strategy and should safeguard it. Organizations should achieve significant competitive advantage, implement marketing techniques, and relationships for strengthening the brand value. The brand name is the useful concept of this model. Finally, customer satisfaction and perceived quality will lead to customer loyalty.**

***Keywords*: Brand Value, Perceived Quality, Customer Satisfaction, Customer Loyalty**

1. INTRODUCTION

In India, the service sector has got greater economic importance over the past decade and has the largest share in GDP. Banking and other financial services, being an important part of service sector, are facing critical challenges to compete with the international players while satisfying customers. Banking plays a crucial role in the development of the economy of any nation. Adequate banking facilities are necessary for the development of industry, trade, commerce, transport, and agriculture. Banking institutions organize savings and use them for productive purposes. Financial inclusion is no longer a fringe subject. It is now recognized as an important part of the mainstream consideration on economic development based on country leadership. As banking services are in the nature of public good, it is essential that availability of banking and payment services are offered to the entire population without discrimination. India Post is a reliable establishment having proper reach nationwide with wide line up of financial instruments. India Post has about 1, 54,965 post offices (as on 31.03.2017) of which 1,39,067 (89.74%) are in rural areas. There is one post office for every 7,753 people in India. India Post also has 2,49,000 agents in the rural area. About 2.2 crore people, already receive their National Rural Employment Guarantee Act (NREGA) payments by post offices. After State Bank of India(SBI), India Post has the largest deposits valued at ₹6 lakh crore. The present study is an attempt to analyze the spatial and temporal distribution of financial inclusion and contemplate steps for further improvements of improving access of finance. The results indicate low preference for postal services among the more prosperous states. To make post office savings scheme aware as well as to enhance customer loyalty the brand name and perceived quality of service should be improved. Studies in the area of branding states that there exists positive effect of customer satisfaction on perceived quality and customer loyalty but perceived quality has no effect on customer loyalty. Satisfaction has a significant effect on trust, reliability and loyalty and perceptual value has an effect on customer satisfaction and loyalty. The study details out the various aspects of Brand effect on customer loyalty towards Post Office Savings Bank, a financial service offered by the Department of Posts.

The study specifies about customer satisfaction, loyalty, perceived quality and brand value in relation to customer loyalty. The study will inculcate the insights of common people involved in branding of banking services offered by the postal service of India giving focus to the process of brand loyalty from the perspective of Department of Posts.

Brands are valid symbols which make companies honest about their products or services and take notice of customers' complaints. The importance of credit is the fact that incomplete and uneven information can result in customer uncertainty about the characteristic of the product. Customer uncertainty may occur after data collection. This leads to consumer's perceived risk (Erdem and Swait, 2004)

Brand reliability will decrease the perceived risk because it increases the customer's trust about the firm's claims. Credit and reliability will reduce the costs of information because customers may use valid and reliable brand as a source of knowledge to reduce the cost of data collecting and data processing. It is important to understand that the major service brand and its related organization have the same meaning in the field of service. As a result, we can say that brands will have a wider impression in the area of services.

2. METHODOLOGY

This study explores the ways the POSB contributed to the formation of Banking system in the mid nineteenth, twentieth and twenty-first century. In particular, this is a study of how the POSB plays an instrumental role in transforming the Economy of the state and the Nation by uplifting the monetary requirements of rural population. Despite of attaining a wide area of coverage and infrastructure facility, are they delivering the quality of service as compared to the other nationalized banks? Do they possess the brand name and customer loyalty as for twenty-first century? Are the customers satisfied by the processing system? Though various services are offered by Post Office how the savings bank service (if offered efficiently) can generate profit for the organization. This study is meant to know about the satisfaction to the customers from the various service schemes.

SWOT Analysis on Indian Postal Schemes - Study on the Post Office Savings Bank of Kerala Circle

Dr. Suma Mathew

Associate Professor
St. Joseph's Business School
St. Joseph's College of Engineering and Technology, Palai
Choondacherry P.O. Kottayam (District) Kerala State

***Abstract*: Strong and robust financial institutions are the standards of economic growth, development and success of modern economies. A financial system, which is inherently strong, functionally varied and displays efficiency and flexibility, is critical to our national objectives of creating a market-driven, dynamic and competitive economy. A mature system supports higher levels of investment and promotes reasonable growth in the economy with its depth and coverage.**

***Keywords:* Strength, Weakness, Opportunity, Threat**

1. INTRODUCTION

The Department of Posts, which functions as an organ of the Government of India, apart from the banking systems, also has a great potential to cater to the rural population and contribute towards further inclusion. India Post is a reliable establishment having proper reach nationwide with wide line up of financial instruments. India Post has about 1,56,600 post offices (as on 31.03.2019) of which 1,41,001 (90.04%) are in rural areas. There is one post office for every 8,511 people in India. India Post also has 2,39,637 agents in the rural area. About 2.2 crore people, already receive their National Rural Employment Guarantee Act (NREGA) payments by post offices. After State Bank of India(SBI), India Post has the largest deposits valued at ₹6 lakh crore. Pradhan Mantri Jan-DhanYojana (PMJDY) is National Mission for Financial Inclusion to establish access to financial services, namely Banking Savings & Deposit Accounts, Remittance, Credit, Insurance, Pension in an affordable manner. Run by Department of Financial Services, Ministry of Finance, on the launch of the scheme , 1.5 Crore (15 million) bank accounts were opened. Guinness World Records Recognizes the Achievements made under PMJDY, Guinness World Records Certificate says "The most bank accounts opened in 1 week as a part of financial inclusion campaign is 18,096,130 and was achieved by Banks in Indian continent from 23 to 29 August 2014". By 13th January 2016, over 20 crore (200 million) bank accounts were opened and ₹301.08 billion (US$4.4 billion) were deposited under the scheme

The present study is an attempt to analyze the spatial and temporal distribution of financial inclusion and contemplate steps for further improvements of improving access of finance. The results indicate low preference for postal services among the more prosperous states.

2. METHODOLOGY

The Post Office Savings Bank (POSB) is one of the Financial Services provided by the Department of Posts. It is one of the oldest and largest banking institution in the country. It operates more than 35.67 crore savings accounts. The Post Office Savings Bank Scheme is an agency function performed by the Department of Posts on behalf of the Ministry of Finance, Government of India. Savings Bank facilities are provided through a network of more than 1,56,000 post offices. There are a number of schemes provided by the Post Office Savings Bank and these include: Savings Accounts, Recurring Deposits (RD), Time Deposit(TD) Monthly Income Scheme (MIS), Public Provident Fund (PPF), National Savings Certificate (NSC), Kisan Vikas Patra (KVP), Senior Citizens Savings Scheme (SCSC) and Sukanya Samriddhi Accounts.

This study explores the ways the POSB contributed to the Financial inclusion or inclusive financing in the delivery of financial services at a reasonable prices to sections of disadvantaged and low-income groups of society, in contrast to financial exclusion where those provisions are not available or affordable. It is estimated that about 2 billion working-age adults globally have no access to the types of formal financial services provided by regulated financial institutions. This study is meant to know about the Strength, Weakness, Opportunity and Threat Factors Indian Postal Schemes.

The method used in the study is exploratory as it utilizes scoring of the variables. The collected data contains both the qualitative and quantitative data. Accordingly, the study uses both qualitative and quantitative techniques for the analysis of data. The statistical analysis comprised of two stages. The first stage examines the descriptive statistics of the measurement items and assessed the reliability and validity of the measure applied in this study. The second stage tested the SWOT and this involves assessing the contributions and significance of the manifest variable's path coefficients (Grimm, 2000).

Confirmatory factor analysis was used to explore the relationships between independent and moderating variables and to describe the construct of the theoretical frame work. This was done using the software AMOS 18 (Arbuckle, 2006 a). In the confirmatory factor analysis, first a theoretically supported model was developed for each factor, a path diagram of casual

A Review on DoS Attacks in IoT

Jeethu Mathew, Dr. R. Jemima Priyadarsini

Abstract

Internet of Things (IoT) is an innovative technology and becomes more popular recently. Nevertheless, the security concern is associated with it. Cybercriminals have different types of methods to misuse the vulnerabilities and weak spots in the network. The number of devices added to a network are increased day by day which is more than what we think or expect. Hence there are many possibilities for the occurrences of an attack.Serious loss will be led by the attack on the IoT.

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