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Implementation of Crop Yield Forecasting System based on Climatic and Agricultural Parameters

Publisher: IEEE Cite This PDF

M. Kandan ; Garapati Sravani Niharika ; Mallula Jhansi Lakshmi ; Kallakuri Manikanta ; ... All Authors

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Abstract:

India is an agricultural country, with over half of the population dependent on agriculture. This creates a huge source of income and is an important sector in the Indian economy as it supplies about 17% of the total Gross Domestic Product (GDP). So agriculture in India is said to be the backbone of our Indian economy. Agriculture is not only an occupation for the people but also a way of life. Agriculture is a risky business and the reliance on reliable crop harvests is important in decisions related to agricultural risk management. We often see farmers suffer losses because of improper selection of the crops they grow without taking into account climatic and environmental boundaries. Crop prediction is a tough task because it depends on a variety of factors such as region, season, rainfall, etc. So a system is needed to recommend reliable crops to a farmer by considering climatic conditions, region of cultivation, etc. The proposed work uses the random forest algorithm to solve agricultural problems by recommending the good crop and its average yield to a farmer by analyzing climatic and agricultural parameters like state, season and rainfall.

Published in: 2021 IEEE International Conference on Intelligent Systems, Smart and Green Technologies (ICISSGT)

Date of Conference: 13-14 November 2021

INSPEC Accession Number: 21743232

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AI-Based Crop Rotation for Sustainable Agriculture Worldwide

2021 IEEE Global Humanitarian Technology Conference (GHTC)

Published: 2021

The Role of Innovative Data Mining Approaches for Analyzing and Estimating the Crop Yield in Agriculture Among Emerging Nations

2022 2nd International Conference on Advance Computing and Innovative Technologies in Engineering (ICACITE)

Published: 2022

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Date Added to IEEE *Xplore*: 02 March 2022

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Publisher: IEEE

ISBN Information:

Electronic ISBN:978-1-6654-0416-7

Print on Demand(PoD) ISBN:978-1-6654-4726-3

Conference Location: Visakhapatnam, India

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Computer Science and Engineering, Aditya Engineering College, Surampalem, Andhra Pradesh, India

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Computer Science and Engineering, Sasi Institute of Tech. & Engg, Tadepalligudem, Andhra Pradesh, India

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I. Introduction

In recent years there has been a drop in agricultural production mainly due to climatic changes and soil health. Given that 62% of the land area is still dependent on rainfall, Indian agriculture continues to depend on Climate. These climate changes will have an impact on the agriculture economy, including changes in farm profits, prices, supply, demand and trade. Making the right grain selection leads to better production and reduces farm management and pest control.

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Smart Voting System using Face Detection and Recognition Algorithms

Publisher: IEEE

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M. Kandan ; Koppula Durga Devi ; Kasani Durga Navya Sri ; Nunna Ramya ; Nunna Kr... All Authors

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Abstract:
The electoral system is the backbone of democracy and organization. The electoral system has experienced many efficient changes within the past few decades. India being a majority rule government, the world's biggest, still directs its races utilizing either Secret Ballet Voting (SBV) or Electronic Voting Machines (EVM), the two of which include significant expenses, physical work and are wasteful. In the existing system, it verified only identification proof, which made more chances for fake voting. To avoid the above issues, we developed a web-based smart voting system along with novel face detection and recognition approach. The entire online framework empowers individuals to protect their votes from any place on the planet. Utilizing the ID of appearances lessens the shot at copying a vote and the individuals who are enlisted advance to the political race and are perceived by the framework will be permitted to cast a ballot. Accordingly, the methodology makes the framework the most ideal approach to make the choice.

Published in: 2021 IEEE International Conference on Intelligent Systems, Smart and Green Technologies (ICISSGT)

Date of Conference: 13-14 November 2021

INSPEC Accession Number: 21740305

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Face Recognition in Real-world Internet Videos Based on Deep Learning
2019 8th International Symposium on Next Generation Electronics (ISNE)
Published: 2019

BDPCA plus LDA: a novel fast feature extraction technique for face recognition
IEEE Transactions on Systems, Man, and Cybernetics, Part B (Cybernetics)
Published: 2006

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Date Added to IEEE *Xplore*: 02 March 2022

DOI: 10.1109/ICISSGT52025.2021.00050

Publisher: IEEE

ISBN Information:

Electronic ISBN:978-1-6654-0416-7

Print on Demand(PoD) ISBN:978-1-6654-4726-3

Conference Location: Visakhapatnam, India

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Contents

Elections are that the primary worry of any nation when to choose somebody. Likewise, direct a solid, secure, quick, and reasonable political race so individuals can include confidence inside the framework and that they can choose the individual for whom they need close by the minimal expense of desk work and labor. Elections are the establishment of any vote-based system and the genuine soul of popular government lies in individuals picking their administration. Nowadays in India, two types of voting methods are used like secret ballot paper and EVM [1].

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A Two-Stage Fuzzy Logic-Based Distributed Clustering Scheme for Precision Farmland Monitoring

Publisher: IEEE Cite This PDF

Anagha Rajput ; Vinoth Babu Kumaravelu ; Arthi Murugadass ; Vishnu Vardhan Gudla All Authors

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Abstract:

Agriculture is the major contributor of national revenue for many developing countries. The embryonic of Internet of things (IoT) and wireless smart sensor network (WSSN) for precision agriculture provides automated systems and quick services to farmers. Farmlands should be observed unceasingly to safeguard from crop-raiders, evaluate soil quality etc. for better reaping and productivity. The challenging issue of energy preservation of battery driven sensor nodes is tackled by employing clustering protocols. The main research issue is the best possible choice of cluster head (CH) in order to deal out network energy consumption. This paper proposes a fuzzy logic (FL) based self-organized clustering scheme for farmland monitoring. The data transmission distances of CH are decreased by inculcating super cluster head (SCH). The load balancing between the cluster members is accomplished by nominating an originator node, which executes the cluster formation. The proposed scheme functions in two stages. In stage one, CHs of the network are selected based on three input FL system. In stage two, SCHs are chosen among the CHs using two input FL system, making the network into two levelled structures. The proposed scheme has superior performance over the similar comparable protocols in terms of energy savings and stable network life span.

More Like This

Dynamic Cluster Head Selection Method for Wireless Sensor Network for Agricultural Application of Internet of Things based Fuzzy C-means Clustering Algorithm
2019 7th Mediterranean Congress of Telecommunications (CMT)
Published: 2019

Improving the Network Lifetime and Performance of Wireless Sensor Networks for IoT Applications Based on Fuzzy Logic
2019 15th International Conference on Distributed Computing in Sensor Systems (DCOSS)
Published: 2019

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Published in: 2021 Innovations in Power and Advanced Computing Technologies (i-PACT)

Date of Conference: 27-29 November 2021

INSPEC Accession Number: 21720147

Date Added to IEEE *Xplore*: 08 February 2022

DOI: 10.1109/i-PACT52855.2021.9697029

Publisher: IEEE

ISBN Information:

Electronic ISBN:978-1-6654-2691-6

Print on Demand(PoD) ISBN:978-1-6654-2692-3

Conference Location: Kuala Lumpur, Malaysia

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Contents

Precision agriculture is one of the IoT applications for resource utilization and management such as water and compost supply, soil qualities and so forth. The real time physical sensed data is collected by sensors, which are embedded on micro-processor circuits. They are called as smart sensor nodes. WSSNs can quickly aggregate the conditions at farm and transmit the information. This continuous gathered data from deployed sensors can be used by farmers, specialists or computerized embedded systems to settle on choices such as amount of soil treatment, water supply strategy, and so on. In this manner, WSSNs are especially well suited for precision agriculture [1], [2]. Here, agrarian fields can spread over several hectares. Thus, sensor nodes are spread over lengthy open space. In the evolving automated monitoring systems, the gateways/sinks have ubiquitous connectivity. Timely, the physical quantity can be calculated and stored in web cloud. Such information accession from any remote location will progress toward becoming as simple as transferring cell phone information on Internet. The integration of WSSN with IoT may upgrade the agrarian activities to enhance the productivity, crop safety and, in addition, quality of the grains. WSSNs are ad hoc networks developed for particular applications. Thus, the placement of WSSN differ from application to application. Fig. 1 depicts a sample scenario, where WSSN is used for farmland monitoring.

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Extensive Study on Effects of Defects in CZTS/CZTSe Quantum Dots Kesterite Solar Cells

Publisher: IEEE

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G. S. Sahoo ; S. Routray ; G. P. Mishra All Authors

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Earth abundant Kesterite semiconductor is emerging as a promising solar cell candidate due to it's low-cost, environment friendly and non-toxic absorber nature with suitable optical properties. However, the achievable conversion efficiency is quite low because of high defect density, interface traps and grain boundaries. In this study a numerical simulator is used to understand the effects of each point of GB defects on the electrical characteristics of kesterite solar cells step-by-step. An overview of all limiting factors such as GB defects, deep defects and tail states associated with recombination mechanisms are presented with help of exponential tail distribution and Gaussian distributions. The ideal QD embedded kesterite solar cell shows an efficiency of 41.4%, while it reduces to 15.6% after considering all of the above mentioned defects in barrier (CZTS) and QD (CZTSSe) material. The distribution of defects inside the band gap is shown here with the help of density of states by using exponential tail distribution and Gaussian distributions functions.

Published in: 2021 IEEE 16th Nanotechnology Materials and Devices Conference (NMDC)

Date of Conference: 12-15 December 2021

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Grain boundary modeling and characterization of thin-film silicon solar cells

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DOI: 10.1109/NMDC50713.2021.9677478

Publisher: IEEE

ISBN Information:

Electronic
ISBN:978-1-6654-1892-8

Print on Demand(PoD)
ISBN:978-1-6654-4653-2

Conference Location: Vancouver, BC, Canada

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G. P. Mishra
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Contents

Earth abundant kesterite semiconductor materials are emerging among photovoltaic (PV) research communities due to it's low-cost, environment friendly and non-toxic nature with suitable optical properties such as (Cu_2 $ZnSn(S,Se)_4$) (CZTSSe) [1]–[3]. It has the potential to replace silicon and thin film-based PV technology. However, it is showing much lower efficiency than other thin film Cu(In, Ga)Se2 (CIGS) and CdTe solar cells [4]–[6]. One of the main reasons for low efficiency is different defect clusters. Deep intrinsic defects like Sn_{Zn} antisites clusters act as deep recombination centers, leading to low carrier collection and the short carrier lifetime [5], [7]–[8]. Additionally, the large population of defect densities like [$2Cu_{Zn}$+Sn_{Zn}] introduce hidden potential fluctuation due to grain boundaries [9]. It appears due to several factors such as multiple rain boundaries, bulk defects, interface traps, trap charges present in absorber layer, etc. Consequently, it leads to higher recombination rate, lower carrier separation along the junction. So, non-radiative electron-hole pair recombination is one of the most important drawback for kesterite solar cell. It results in a severe potential fluctuation, low minority carrier lifetime, which ultimately degrades it's performance lowering open-circuit voltage (Voc) [10]–[11]. It is well understood from the literature that intrinsic point defects and associated band tailing are the key points behind the V_{oc} deficit [5], [12]–[16].

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Plant Disease Prediction and classification using Deep Learning ConvNets

Publisher: IEEE Cite This PDF

A. Lakshmanarao ; M. Raja Babu ; T. Srinivasa Ravi Kiran All Authors

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A country's inventive growth is dependent on the agricultural sector. Agriculture, the foundation of all nations, offers food and raw resources. Agriculture is hugely important to humans as a food source. As a result, plant diseases detection has become a major concern. Traditional methods for identifying plant disease are available. However, agriculture professionals or plant pathologists have traditionally employed empty eye inspection to detect leaf disease. This approach of detecting plant leaf disease traditionally can be subjective, time-consuming, as well as expensive, and requires a lot of people and a lot of information about plant diseases. It is also possible to detect plant leaf diseases using an experimentally evaluated software solution. Currently, machine learning and deep learning are using in recent years. The agriculture sector is also not a exception for machine learning. In this paper, we applied "Convnets" for plant disease detection and classification. We collected a PlantViallge dataset from Kaggle. It contains images of 15 different classes of plant leaves of three different plants potato, pepper, tomato. We divided the dataset into three datasets and applied Convnets on three datasets. We achieved an accuracy of 98.3%,98.5%,95% for potato plant disease detection, pepper plant disease detection, tomato plant disease detection. Experimental results have shown that our model achieved a good accuracy rate for plant leaf disease detection and classification.

More Like This

A survey on detection and classification of rice plant diseases

2016 IEEE International Conference on Current Trends in Advanced Computing (ICCTAC)

Published: 2016

Plant Disease Detection Techniques: A Review

2019 International Conference on Automation, Computational and Technology Management (ICACTM)

Published: 2019

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Published in: 2021 International Conference on Artificial Intelligence and Machine Vision (AIMV)

Date of Conference: 24-26 September 2021

INSPEC Accession Number: 21457233

Date Added to IEEE *Xplore*: 10 January 2022

DOI: 10.1109/AIMV53313.2021.9670918

Publisher: IEEE

ISBN Information:

Electronic ISBN:978-1-6654-4211-4

Print on Demand(PoD) ISBN:978-1-6654-4212-1

Conference Location: Gandhinagar, India

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Contents

I. Introduction

India is a country where agriculture plays major role in the enhancement of human civilization. Crops were exclusively utilized to feed people and animals. Farming has become far more significant in recent years. People are researching production methods. Increase product activity, use fewer pesticides, and reduce environmental impact are important. The goal is to improve flat land for farming, enhance food production, and create lucrative systems. Possibilities for work are also provided. Agriculture is the primary source of income and provides the food sector with raw ingredients. The agricultural areas are confronted with challenges, including significant crop losses. Agricultural discretion will have an impact on the entire economy. Plant diseases have become a conundrum since they have raised concerns mostly about the production of agricultural outputs. There are numerous diseases in this climate. For these reasons, it is beneficial to identify these diseases effectively and on time to recognize the losses they create. Plantation, nurturing, and preventing plant diseases are key for a country's or region's overall governance. Plant diseases can be checked using a variety of approaches, including man-based and technology-based procedures. Some of the issues in plants can be seen with the naked eye. Some diseases are discovered later in the life cycle of the leaves and have already caused significant harm to the leaves and plants. Plant illnesses such as pathogens, live microorganisms, bacteria issues, fungi-infected plants, microbes, and virials cause problems in plants. It is important to identify the problem in the early stage. We considered three different plant types in this paper. The dataset was collected from Kaggle. It contains 3 types of potato leaves,2 types of pepper leaves, and ten types of tomato leaves. The sample images in the dataset

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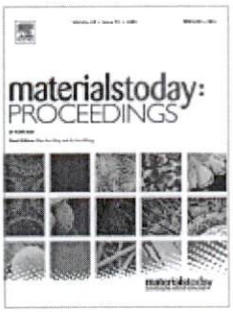

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A review of the implementations of glass fiber in concrete technology

Ch. Devi [a], D.S. Vijayan [b], Ramesh Nagalingam [c], S. Arvindan [b, d]

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Available online 23 February 2022, Version of Record 17 June 2022.

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Abstract

Concrete Technology is the science and art of proportioning raw materials in order to produce concrete that satisfies specified mechanical, stiffness, and workability specifications. That is, evaluating the properties of concrete and its components under a variety of conditions and mixtures. Fiber Reinforced Concrete (FRC) is reinforced by the irregular, isolated, and evenly distributed fibres. FRC is available in a variety of forms and qualities, offers numerous benefits, and is a one-of-a-kind reinforcing material. Fibrous material strengthens the structure of FRC. It is composed of thousands of tiny discrete fibres that are randomly oriented and dispersed. Cement and alkali-resistant glass fibres are used to make glass fibre reinforced concrete (GFRC). The fibres are used to reinforce reinforced concrete in place of steel reinforcing bars, adding flexural, tensile, and impact strength. This enables the production of structural concrete products such as wall panels that are both strong and lightweight. GFRC can also be used to create beautiful concrete products such as façade wall panels and concrete work surfaces. Due to its adaptability, durability, and light weight, the majority of concrete experts use GFRC. The article's primary objective is to educate the public about new, practical, and cost-effective technology. The article's primary objective is to inform readers about emerging low-cost technologies. Additionally, the paper discusses current GFRC applications.

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A review on rheological characteristics, serviceability and failure analysis of steel fiber impregnated concrete

2022, Materials Today: Proceedings

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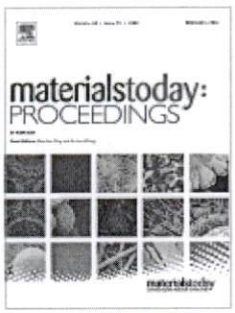

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Available online 24 May 2022
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Analysis of inset feed microstrip patch antenna on flexible (PVA/CMC/AV) substrate

R. Vettumperumal [a], N.R. Dhineshbabu [b, c]

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Available online 24 May 2022.

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Abstract

The development of current wearable mobile devices necessitates the use of antennas that are reduced in size and internally flexible to fit. The miniaturization of the microstrip patch antenna (MPA) improves its communication capabilities in a variety of ways. The use of flexible material in MPA construction enhances its suitability for wireless body area networks (WBAN), which include devices for military, surveillance, and medical purposes. The small MPA is built in this work employing a polymeric (PVA/CMC/AV) flexible substrate with an inset feed technique to resonate at a frequency of 2 GHz. COMSOL Multiphysics software is used to simulate the designed antenna within the perfect matched layer. The antenna's performance parameters are examined, including return loss, gain, directivity, radiation efficiency, and voltage standing wave ratio (VSWR).

Keywords

Microstrip patch antenna; Flexible substrate; COMSOL Multiphysics

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Volume 62, Part 12, 2022, Pages 6450-6454

Micropatterning on stainless steel surface using electrochemical micromachining

S. Kunar, D.V. Janaki

Department of Mechanical Engineering, Aditya Engineering College, Surampalem 533437, India

Available online 19 April 2022, Version of Record 24 June 2022.

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Abstract

Advanced materials propose an outstanding combination of biocompatibility and weight-specific properties that create these materials as ideal components in biomedical and aeroengine applications. However, the important microengineering applications are hindered by the prerequisite to produce high quality ellipse micropattern on stainless steel foils. The advanced and cost-effective method i.e., maskless electrochemical micromachining (EMM) has been established to manufacture micropatterns on SS-304 foils. The dispersal of current flux influences the shape and uniformity of microtextures and spreading of current density depends upon the mask thickness and strength in this process. So, micro ellipse profiles can be generated by controlling mask thickness and process parametric combination. In this paper, the development of investigational setup and utility of appropriate mask are described to fabricate the regular microtextures. The outcome of input factors such as electrolyte concentration, voltage, and machining time on various microtextured characteristics are investigated. A study has been made to achieve the best process variables based on micrographs. From investigational

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results attained in a sequence of experimentation, the appropriate SU-8 2150 mask is reused for making uniform micropatterns. Eventually, a group of micropatterns is produced effectively with the vital accuracy by maskless EMM.

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Keywords

Maskless EMM; Reused masked tool; Ellipse; Micropattern; Depth; Accuracy; R_a

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Volume 62, Part 2, 2022, Pages 1060-1064

Thermal analysis of Laser welding of Grade 91 steel

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[c] Institute of General Mechanics, RWTH Aachen University, Germany
[d] Aditya College of Engineering and Technology, Surampalem, India

Available online 25 April 2022, Version of Record 20 June 2022.

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Abstract

Grade 91 steel is a phase transformed based high temperature application steel. This paper investigates thermal analysis of Laser welding of 2 mm thin plates. A 3-D thermo-elastic–plastic model is developed for thermal analysis of Laser welding using SYSWELD and FlexPDE softwares. Initially heat source fitting of bead-on-plates was carried using conical heat source model then transient analysis of square butt joint was carried out. Bead-on-plate experiment was carried out to predict weld profile based on heat input parameters square butt joint welding of Grade 91 steel was completed.

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Keywords

Grade 91 steel; FlexPDE; SYSWELD; Thermal analysis; Laser welding

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Volume 65, Part 8, 2022, Pages 3273-3277

Micropatterning using maskless electrochemical micromachining

S. Kunar [a, d] ✉, R. Kumar [a, d], Bh. Varaprasad [a, d], S. Rama Sree [b, d], K.V.S.R. Murthy [c, d], M.S. Reddy [a, d]

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Available online 30 May 2022, Version of Record 23 August 2022.

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Abstract

To attain economical micropatterning of microfeatures on the planar surfaces, a developed and maskless electrochemical micromachining procedure (MEMM) is applied wherein a layer of coating with unified micropores is made on the micropatterned tool. The textured tool and substrate are attached mechanically with sturdy structure in economically developed EMM cell. A distinctively electrolyte flow path by accommodating the textured tool with designed textures is manufactured in the cell unit to substantially mitigate mass removal restriction due to opening of the narrow-textured area in the tool. A single micropatterned tool creates multiple identical microtextures cost-effectively. Experimentation is carried out to appraise this anticipated MEMM procedure, with the effort on analysing the uniformity of dimensions of the machined micro impressions utilizing the influence of duty ratio and frequency. It is revealed that the advanced

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MEMM method displays beneficial machinability and pertinency to create micro impressions with considerably identical profiles on the planar surfaces.

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Keywords

MEMM; Reused tool; Microtexture; Accuracy; Depth; Surface quality

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Volume 62, Part 4, 2022, Pages 2392-2395

Influence of Nano-Fe_2O_3 concentration on thermal characteristics of the water based Nano-fluid

Vinjamuri SN Ch Dattu [a] ✉, Venkateswara Rao Roniki [b], Puthalapattu Reddy Prasad [c], Pothu Raju Tupati [d], N. Gayatri Devi [e], Rajyalakshmi Chavakula [f]

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Abstract

The heat transferring characteristics of the working fluids in thermal systems are the key factors which decide the performance of the thermal systems. The recent researches proposed the use of nano-sized particles in low fractions within the base fluids to enhance their heat transport

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behavior. Among the different thermo-physical characteristics of the nano-fluids, the thermal conductivity is considered to be the chief parameter if the enhancement in heat transfer in required. In this work, a water based nano-fluid containing nano-iron oxide (Fe_2O_3) in varying mass proportions (0.0%, 0.1%. 0.2%, 0.3%, and 0.4%) was investigated for its heat transfer capabilities. The thermal conductivity variation and the proportionate variations in the absolute viscosity of the nano-fluids were assessed in a wide range of temperature. The findings revealed that the thermal conductivity was improved with the increment in mass fraction of nano-iron oxide and also with the upsurge in temperature. Conversely, the absolute viscosity was increased with the loading of nano-iron oxide and the decreasing trend in absolute viscosity was reported with the rise in temperature.

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Keywords

Nano-fluids; Nano-iron oxide; Viscosity; Thermal conductivity; Heat transfer

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Volume 62, Part 4, 2022, Pages 2370-2375

Experimentally investigating the influence of static mixers on the performance of a solar water heater

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Available online 9 May 2022, Version of Record 17 June 2022.

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Abstract

For the majority of household, municipal, and corporate heated water needs, solar water heater has become an inescapable renewable source. Due to its relative benefits over alternative methods, evacuation tube collectors (ET) oriented solar water heaters (ETSWH) have become increasingly popular in recent years for the mentioned uses. Specifically, the ET system is particularly affordable and effective for the inactive operations. As a result, ETSWHs are widely

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used in both residential and business structures. Nonetheless, the deprived water flow at the low end of the ETs makes them idle for the majority of time and decreases the useful absorbers area, is a fundamental flaw with ET system in gravity driven type of ET operation. This work aims to address the above ET issues by producing volatility within the ET utilizing two distinct varieties of static mixers, namely combinational static mixers (CSM) and a spring type static mixers (SSM). The experimentations had been carried out in three different ways: ET without static mixers (Empty-ET), ET with combinational static mixers (CSM-ET), and ET with spring type static mixers (SSM-ET). The data was taken from all the cases and then analyzed. The inclusion of static mixers greatly increased the ET water temperature by inducing turbulence, according to the findings. They concurrently increased heat gain, resulting in an increase in mean water tank temperature. With the help of combinational static mixers and a spring type static mixers, the water in the tank's temperature was raised by 8.5 °C and 4.5 °C, correspondingly. Furthermore, as compared to spring type static mixers, the combinational static mixers appear to be superior in terms of enhancing heat transport inside the ETSWH.

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Keywords

ET collector; Gravity flow; Static mixer; SWH; Water temperature

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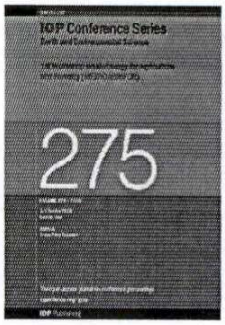

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Desalination of sea water using solar still

Lakshmi Panuganti[1]

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Citation Lakshmi Panuganti 2022 *IOP Conf. Ser.: Earth Environ. Sci.* **982** 012035

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https://doi.org/10.1088/1755-1315/982/1/012035

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Abstract

The consumption of fresh water is increasing at a rapid rate, but its availability is decreasing day by day. The present work is based on developing a low-cost prototype working model called solar still which desalinates brackish water through distillation. The fabrication of solar still installed at the terrace of BILL GATES Bhavan of Aditya Engineering College, involves the components, wooden box of volume - 0.048 m^3, lined by Aluminium sheet 6 gauge coated with black paint, a parabolic reflector (44" x 34"), preheating tray (1 × 1 m), connecting pipes (1"), water collector (2 lit capacity) and glass cover. Sea water samples from Port area (sample-1) and Uppada (sample-2) of Kakinada Beach were collected for purification. The raw water is sent from the inlet valve into the looped pipe placed in the pre-heating tray and then the pre-heated water is discharged into the solar still where distillation takes place, later the desalinated water was collected at the collecting point. The laboratory analyses of

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Comparative Analysis of Drowsiness Detection Using Deep Learning Techniques

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Abstract:

Driver drowsiness increases crash risk, resulting in significant road damage each year. Driver drowsiness and rash driving are the leading causes of road accidents, which result in the loss of valuable lives and deteriorate road traffic safety. Various drowsiness detection systems have been developed using various technologies, with an emphasis on the unique parameter of detecting the driver's drowsiness. Deep learning techniques are currently a hot research topic in detection systems. The purpose of this paper is to compare the detection of driver drowsiness using deep learning techniques such as artificial neural networks (ANN), convolution neural networks (CNN), and deep convolutional neural networks (DCNN). This will determine whether the person is drowsy based on their eye score. If the eyes are closed until the bench score, the red alert will be activated, along with an alarm sound. This will determine

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whether or not the person is drowsy based on their eye score. If the eyes are closed until the bench score, the red alert will be activated, along with an alarm sound. The eyes will be detected whether they are open, semi-closed, or closed, and an alert will be generated to help prevent any type of road accident. To prevent accidents and improve road safety, reliable and precise driver drowsiness systems are required.

Published in: 2022 International Conference on Computer Communication and Informatics (ICCCI)

Date of Conference: 25-27 January 2022

INSPEC Accession Number: 21699169

Date Added to IEEE *Xplore*: 31 March 2022

DOI: 10.1109/ICCCI54379.2022.9740888

Publisher: IEEE

ISBN Information:

Electronic ISBN:978-1-6654-8035-2

Print on Demand(PoD) ISBN:978-1-6654-8036-9

Conference Location: Coimbatore, India

Print on Demand(PoD) ISSN: 2329-7190

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Increases in the size of the network and associated data have been a direct effect of technological breakthroughs in the technology and communication areas. As a result, new types of assaults have emerged, making it more difficult for network security systems to identify potential threats. An intrusion Detection is a critical cyber security method that keeps track of the progress of the network's software or hardware. In order to keep up with the ever-increasing rate and diversity of cyber threats, researchers have turned to machine learning approaches to build intrusion detection systems (IDS). Using machine learning algorithms, it is possible to identify with high precision the major differences between normal and abnormal data. In this paper, we proposed three feature selection techniques followed by machine learning and deep learning for IDS. We collected two different datasets and used the ANOVA F-value based method, impurity-based feature selection, and mutual information-based techniques for identifying the best features. Later, we applied three ML algorithms K-NN, Decision Trees, Logistic Regression, and Deep Learning Feed Forward Neural Networks on two datasets and achieved an accuracy of

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88%, 99.9% with feed forward neural networks. The results shown that our model performed well compared to conventional methods.

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Published in: 2022 International Conference on Communication, Computing and Internet of Things (IC3IoT)

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INSPEC Accession Number: 21728599

Date Added to IEEE *Xplore*: 12 May 2022

DOI: 10.1109/IC3IOT53935.2022.9767727

Publisher: IEEE

ISBN Information:

Electronic ISBN:978-1-6654-7995-0

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Contents

I. Introduction

The Internet has become an essential aspect of our lives as the digital world has grown. With the rise of smart cities, the Internet's role in daily life is becoming more and more important. There is also a chance of cyberattacks with this vast usage. In 1987, Denning [1] recommended the use of intrusion detection systems as an additional method of network security. Using these methods, networks can be kept safe from both internal and external threats. Cyber security is safeguarded by IDSs, which are detection systems that keep tabs on how well software and hardware are working on a network. False alarms are common in many IDS, which means that security analysts must deal with a lot of false alarms, which can lead to dangerous attacks going unnoticed. Intrusion occurs in a matter of seconds in today's world. There are two types of IDS available: anomaly based and signature based. Anomaly based IDS figures out what is usual for a given network, bandwidth, protocols, ports, and other devices are all monitored and compared to a pre-established baseline. Signature based IDS monitors all packets transiting the network and compares them to a collection of signatures of known harmful threats. This is similar to antivirus software. This

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2018 13th IEEE Conference on Industrial Electronics and Applications (ICIEA)
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Abstract:
Spatial modulation techniques (SMTs) are a promising solution for the design of future fifth generation (5G) and beyond communication systems, which activate only one or few antennas at the transmitter as per the incoming bit pattern. SMTs offer promising spectral efficiency, energy efficiency, and error performance with reduced hardware cost and complexity. Recently, fully quadrature spatial modulation (FQSM) has garnered attention as spectral efficiency SMT, which can vary the active antennas from one to multiple/all at any time instance. As more antenna subsets are utilized for bit mapping, spectral efficiency of FQSM grows linearly with the quantity of antennas at the transmitter. All SMTs suffer from huge error performance degradation under correlated channel conditions and hence in this paper, we evaluate the performance of FQSM under various channel fading scenarios. For

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performance evaluation, uncorrelated and correlated Rayleigh, as well as Rician channel fading scenarios are considered. Extensive Monte Carlo simulation demonstrates the superiority of the FQSM under various channel fading scenarios.

Published in: 2022 2nd International Conference on Artificial Intelligence and Signal Processing (AISP)

Date of Conference: 12-14 February 2022

INSPEC Accession Number: 21725275

Date Added to IEEE *Xplore*: 25 April 2022

DOI: 10.1109/AISP53593.2022.9760567

Publisher: IEEE

ISBN Information:

Electronic ISBN:978-1-6654-4290-9

Print on Demand(PoD) ISBN:978-1-6654-4291-6

Conference Location: Vijayawada, India

ISSN Information:

Electronic ISSN: 2640-5768

Print on Demand(PoD) ISSN: 2572-1259

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Abstract:
The precise detection of brain tumors through magnetic resonance imaging (MRI) at an early stage in clinical imaging applications is a difficult task for scientists these days. The death rate from mental disease-related deaths is reduced when the increase is detected early. Because of its low ionization and radiation, MRI is a popular clinical imaging modality, although manual assessment takes a long time. In this paper, we describe a Machine-Learning-Technique (MLT) that uses the cerebrum MRI dataset to discriminate and categorize tumorous and non-tumorous regions. Then, using the chan-vese (C-V) technique, the dynamic growth is portioned by selecting a precise starting point. In the extremely subsequent stage, the elements of the cancer region are

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extricated utilizing the gray level co-event network (GLCM), and afterward, significant measurable highlights were picked. At long last, a two-class classifier is carried out utilizing the support vector machine (SVM) and its presentation is then approved with k nearest neighbor (KNN). The presentation of the proposed stream work was assessed as far as exactness, affectability, particularity, and accuracy by performing on the BRATS 2017 benchmark dataset. The recreation results uncover that the proposed framework performs better compared to the current strategies with high exactness.

Published in: 2022 First International Conference on Electrical, Electronics, Information and Communication Technologies (ICEEICT)

Date of Conference: 16-18 February 2022

INSPEC Accession Number: 21778785

Date Added to IEEE *Xplore*: 10 May 2022

DOI: 10.1109/ICEEICT53079.2022.9768591

Publisher: IEEE

ISBN Information:

Electronic ISBN:978-1-6654-3647-2

Print on Demand(PoD) ISBN:978-1-6654-3648-9

Conference Location: Trichy, India

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Contents

The most aggressive brain tumors in adults are gliomas, which arise from glial cells and the surrounding infiltrative tissues [1] Low-grade gliomas (LGG) and high-grade gliomas (HGG) are the two types, with HGG being the most aggressive [2]. However, there are about 130 multiple forms of high-grade and low-grade brain tumors, with average survival uttermost between 12 to 15 months [3].

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Twitter Sentiment Classification with Deep Learning LSTM for Airline Tweets

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2020 7th International Conference on Computing for Sustainable Global Development (INDIACom)
Published: 2020

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Published: 2020

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I. Introduction
II. Previous Work
III. Proposed Method
IV. Experiments and Results
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Abstract:
As a result of increase in internet usage, there is a massive amount of information available to web users, as well as a massive amount of new information being created daily. To facilitate internet pick-up, trading ideas, and disseminating assessments, the internet has evolved into a stage of large volumes of data. Facebook, and Twitter generate a lot of data every day. As a result, text handling is crucial in making decisions. Sentiment analysis has surfaced as a method for analyzing Twitter data. In this paper, we collected a Kaggle dataset with airline tweets. It contains three variants of tweets: neutral, positive, negative. First, we used NLP methods to clean the text data. Later, we applied RNN, LSTM, stacked LSTM, bidirectional LSTM, and GRU techniques for classifying tweets in three different ways: positive vs negative sentiment analysis, neutral vs positive sentiment analysis, and neutral vs negative

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sentiment analysis. We achieved an accuracy of 93% for the classification of positive and negative airline reviews. We achieved accuracy values of 84.5%,83.8% for neutral vs positive and neutral vs negative tweets. The results show that, the proposed RNN/LSTM/GRU model performed well for sentiment classification. Keywords-Sentiment analysis, Tweets, RNN, LSTM, GRU.

Published in: 2022 8th International Conference on Advanced Computing and Communication Systems (ICACCS)

Date of Conference: 25-26 March 2022

DOI: 10.1109/ICACCS54159.2022.9785208

Date Added to IEEE *Xplore*: 07 June 2022

Publisher: IEEE

Conference Location: Coimbatore, India

ISBN Information:

Electronic
ISBN:978-1-6654-0816-5
Print on Demand(PoD)
ISBN:978-1-6654-0817-2

ISSN Information:

Electronic ISSN: 2575-7288
Print on Demand(PoD) ISSN: 2469-5556

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An Efficient Mouse Tracking System Using Facial Gestures

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A. Lakshmanarao ; B. Lokesh ; Kilarapu Sarita All Authors

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Abstract:

A large number of human beings influenced with neuro-locomotor handicaps or those incapacitated by injury can't utilize computers/laptops for fundamental assignments like sending or getting messages, perusing the web, watching beloved Television shows or films. Through a past research study, it was presumed that eyes are a fantastic possibility for universal registering since they move in any case during cooperation with processing hardware. Utilizing this hidden data from eye developments could permit taking the utilization of computers back to these type patients. For this reason, we propose an mouse tracking framework which is totally worked by natural eyes as it were. The motivation behind this work is to develop an mouse tracking system that can viably follow eye-developments and empower the client to perform activities

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A Rapid Webcam-Based Eye Tracking Method for Human Computer Interaction
2018 International Conference on Control, Automation and Information Sciences (ICCAIS)
Published: 2018

Computer Vision Based Analysis for Cursor Control Using Object Tracking and Color Detection
2014 Seventh International Symposium on Computational Intelligence and Design
Published: 2014

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planned to explicit eye developments/signals through computer/laptop webcam. The proposed model controls mouse movements through facial gestures.

Published in: 2022 8th International Conference on Advanced Computing and Communication Systems (ICACCS)

Date of Conference: 25-26 March 2022

DOI: 10.1109/ICACCS54159.2022.9785044

Date Added to IEEE *Xplore*: 07 June 2022

Publisher: IEEE

Conference Location: Coimbatore, India

ISBN Information:

ISSN Information:

Electronic ISSN: 2575-7288

Print on Demand(PoD) ISSN: 2469-5556

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Contents

There has recently been a surge in interest in achieving natural human-computer interaction. Several research in universal human-computer interaction was done earlier. In this era, the concepts of computers are added. There are many different types of gestures that can be used to communicate with another person. The interface based on vision The approach extracts motion data without incurring a substantial cost. However, in order to progress, a multimodal human-computer interface based on vision The tracking of eyes and faces, as well as their recognition, is part of the system. The main intention of this work is to design eye gesture tracking system, which may be helpful for physically disable people to to use computers. With realtime gesture system, a client can handle a PC by just doing motions before the web cam which is connected with the PC.

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Plant Disease Prediction using Transfer Learning Techniques

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Plant diseases are a significant hazard to feed a growing population, but due to a lack of infrastructure in many regions of the world, timely detection is challenging. Finding and detecting plant illness is essential in agricultural production. It takes a great deal of time and effort to find the disease. Agricultural sector can also reap the benefits of machine learning and deep learning. There has been a recent rise in the use of ML & DL techniques in plant disease identification. In this paper, we applied transfer learning technique for plant disease prediction. We used a 'plantvillage' dataset collected from Kaggle. Images of fifteen different types of plant leaves (Tomato, Potato, Pepper bell), from three distinct plants are included in this collection. We split the original dataset into three parts for three different plants and applied three transfer learning techniques VGG16, RESNET50, Inception and achieved

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accuracy of 98.7%, 98.6%, 99% respectively. The results of experiments shown that our proposed model achieved good accuracy when compared to traditional models.

Published in: 2022 Second International Conference on Advances in Electrical, Computing, Communication and Sustainable Technologies (ICAECT)

Date of Conference: 21-22 April 2022

Date Added to IEEE *Xplore*: 01 July 2022

INSPEC Accession Number: 21845461

DOI: 10.1109/ICAECT54875.2022.9807956

ISBN Information:

Electronic
ISBN:978-1-6654-1120-2

Print on Demand(PoD)
ISBN:978-1-6654-1121-9

Publisher: IEEE

Conference Location: Bhilai, India

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Contents

I. Introduction

The primary energy source for the human body is plants. A wide range of plant diseases can easily impact farming-based products. Farmers suffer ecological, social, and economic losses as a result of these diseases. The entire economy will be harmed if agricultural products decline. There are a variety of plant diseases on the earth. A decrease in the quality of agricultural products and a large decrease in returns could be caused by these illnesses, which could also jeopardize food safety. Preventative measures begin with early discovery and diagnosis of plant diseases. Agricultural technicians are typically the ones that identify and diagnose plant diseases in the field. Farmers face ever-increasing hurdles every day as population grows. Farming relies heavily on the availability of land and water. To handle these issues in real time, modern agriculture employs a wide range of technological advances. This paper describes a method for detecting and classifying leaf diseases. We used a Kaggle plantvillage dataset for out experiments. Some of the plant leaf images from the dataset are shown in Fig-1, Fig-2.

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A Comparative Analysis of Zeta and Bridgeless LUO PFC Converters Fedbldc Motors with PI-Controller

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Abstract:

Brushed DC motors are being replaced by BLDC motors for low power applications BLDC motors unlike brushed DC motors host their phase windings on the stator and eternal electric on motor. Electronic commutation in BLDC motors is carried out using Hall sensors. Typical brushed AC motor techniques import thermalized toys, appliances, and computer peripherals. So improving the shape of voltage outcomes at the input supply is most important. PFC converters usually control the shape of current waveform by adjusting the duty ratio of its switches (MOSFET) such that it becomes zero at zero crossings and passes the current through input side inductor only at the peaks, making the load act as resistor. The PFC converter's control unit usually compares the DC link power and the reference velocity(multiplied by a voltage constant) and uses a controlled to improve the stability response, a comparative analysis of zeta

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Power factor correction in brushless DC motor drive using a boost-forward SSIPP

2014 Annual IEEE India Conference (INDICON)

Published: 2014

Power factor correction in a brushless DC motor drive using an isolated-Luo converter

2014 6th IEEE Power India International Conference (PIICON)

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and bridgeless Luo converters has been performed in this project with PI controller using matlab/simulink model software results are presented.

Published in: 2022 International Conference on Advances in Computing, Communication and Applied Informatics (ACCAI)

Date of Conference: 28-29 January 2022

INSPEC Accession Number: 21689147

Date Added to IEEE *Xplore*: 15 April 2022

DOI: 10.1109/ACCAI53970.2022.9752471

Publisher: IEEE

ISBN Information:

Electronic ISBN:978-1-6654-9529-5

Print on Demand(PoD) ISBN:978-1-6654-9530-1

Conference Location: Chennai, India

Marlapudi Asha Swarna Sri
Department of Electrical Engineering, Aditya Engineering College, AP

Bapayya Naidu Kommula
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Contents

In the recent past, most of the brushed DC motors are being replaced by the Brushless DC motors to avoid the losses, wear & tear of the conventional DC motors caused by the brushes and commutator. Permanent Magnet Brushless DC motors (PMBLDC) won't require any brushes and they provide similar Torque-speed characteristics as of conventional DC motors with the help of electronic commutation. They possess high power density due to high Torque to weight ratio. The major issue with the BLDC motors is the cost incurred with the electronic commutation, and the maintaining of power factor at the AC mains (supply). Many DC-DC converters have been developed over time to keep BLDC's AC mains power factor constant while also allowing the motor speed to be independently controlled [1].

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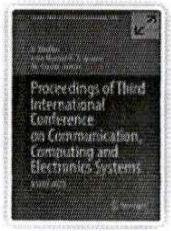

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Hand Gesture Mapping Using MediaPipe Algorithm

Ravi Kishore Veluri ✉, S. Rama Sree, A. Vanathi, G. Aparna & S. Prasanth Vaidya

Conference paper | First Online: 20 March 2022

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Abstract

Hand gestures are a type of nonverbal communication that may be deployed in a variety of situations, including communication between deaf and deaf-mute individuals, robot control, and human–computer interface home automation, and medical applications, among others. A wide range of approaches have been used in hand gesture-based research publications, as well as those based on designed to operate sensing technology and Internet

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international workshop on depth image analysis and applications

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Third International Conference on Communication, Computing and Electronics Systems . Lecture Notes in Electrical Engineering, vol 844. Springer, Singapore.
https://doi.org/10.1007/978-981-16-8862-1_39

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DOI
https://doi.org/10.1007/978-981-16-8862-1_39

Published	Publisher Name	Print ISBN
20 March 2022	Springer, Singapore	978-981-16-8861-4

Online ISBN	eBook Packages
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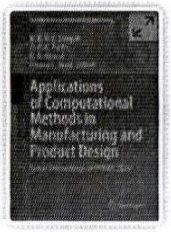

Applications of Computational Methods in Manufacturing and Product Design pp 153–163

Experimental Investigation on the Performance of the Novel 3D-Printed Micro-Cross Axis Wind Turbine

V. S. Surya Prakash, P. S. V. V. Srihari, P. S. V. V. S. Narayana, G. Udaysai, P. S. S. Rajesh & K. Venu

Conference paper | First Online: 04 May 2022

174 Accesses

Part of the Lecture Notes in Mechanical Engineering book series (LNME)

Abstract

Cross axis wind turbine which is a combination of both vertical and horizontal axis wind turbine is effective in extracting wind energy in urban regions. In this study, a novel CAWT with auxiliary blades arranged on its vertical components is proposed. The performance parameters such as co-efficient of torque, co-efficient of power, and co-efficient of moment of a 3D-printed scaled models are evaluated

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Disclosure Statement

The author declares that they have no potential conflicts.

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.RIS .ENW .BIB

DOI
https://doi.org/10.1007/978-981-19-0296-3_14

Published	Publisher Name	Print ISBN
04 May 2022	Springer, Singapore	978-981-19-0295-6

Online ISBN	eBook Packages
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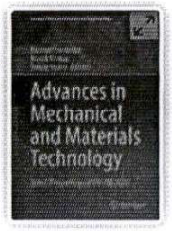

Advances in Mechanical and Materials Technology pp 1347–1362

A Numerical Approach to Find Distinct Mechanisms of a Planar Kinematic Chain Using Linkage Coordinates

Vinjamuri Venkata Kamesh, V. Srinivasa Rao, D. V. S. S. S. V. Prasad & P. S. Ranjit

Conference paper | First Online: 01 January 2022

841 Accesses

Part of the Lecture Notes in Mechanical Engineering book series (LNME)

Abstract

In a planar kinematic chain, different mechanisms are possible when on link's mobility is restricted by fixing it. These mechanisms obtained are called as inversions. In the present paper, a numerical approach is proposed which is based on new concept defined as 'linkage coordinates' related to connectivity of a link in a closed planar kinematic chain. The proposed method is tested on various

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12. Shukla A, Sanyal S (2017) Gradient method for identification of isomorphism of planar kinematic chains. Aust J Mech Eng. https://doi.org/10.1080/14484846.2017.1374815

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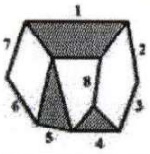	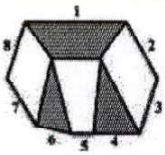		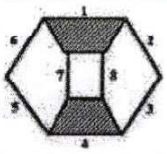
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Kamesh, V.V., Srinivasa Rao, V., Prasad, D.V.S.S.S.V., Ranjit, P.S. (2022). A Numerical Approach to Find Distinct Mechanisms of a Planar Kinematic Chain Using Linkage Coordinates. In: Govindan, K., Kumar, H., Yadav, S. (eds) Advances in Mechanical and Materials Technology . Lecture Notes in Mechanical Engineering. Springer, Singapore. https://doi.org/10.1007/978-981-16-2794-1_114

.RIS .ENW .BIB

DOI
https://doi.org/10.1007/978-981-16-2794-1_114

Published Publisher Name Print ISBN

PRINCIPAL
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01 January 2022	Springer, Singapore	978-981-16-2793-4

Online ISBN	eBook Packages
978-981-16-2794-1	Engineering Engineering (R0)

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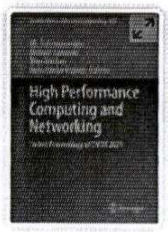

High Performance Computing and Networking pp 181–191

A Slant Transform and Diagonal Laplacian Based Fusion Algorithm for Visual Sensor Network Applications

Radha Nainvarapu ✉, Ranga Babu Tummala & Mahesh Kumar Singh

Conference paper | First Online: 23 March 2022

227 Accesses

Part of the Lecture Notes in Electrical Engineering book series (LNEE,volume 853)

Abstract

Multi-focus image fusion has developed as a promising research area in the field of visual sensor networks, and its objective is to combine multiple images of the same scene into a single image with enhanced reliability and interpretation. But, the current fusion methods based on focus measures are not able to get the entire focused fused image as they neglect the diagonal neighbor pixels during the

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Nainvarapu, R., Tummala, R.B., Singh, M.K. (2022). A Slant Transform and Diagonal Laplacian Based Fusion Algorithm for Visual Sensor Network Applications. In: Satyanarayana, C., Samanta, D., Gao, XZ., Kapoor, R.K. (eds) High Performance Computing and Networking. Lecture Notes in Electrical Engineering, vol 853. Springer, Singapore. https://doi.org/10.1007/978-981-16-9885-9_15

.RIS .ENW .BIB

DOI

https://doi.org/10.1007/978-981-16-9885-9_15

Published	Publisher Name	Print ISBN
23 March 2022	Springer, Singapore	978-981-16-9884-2

Online ISBN	eBook Packages

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High Performance Computing and Networking pp 193–204

Tracking Industrial Assets Using Blockchain Technology

N. B. L. V. Prasad ✉, M. N. A. Pramodh, R. V. S. Lalitha, Kayiram Kavitha & K. Saritha

Conference paper | First Online: 23 March 2022

244 Accesses

Part of the Lecture Notes in Electrical Engineering book series (LNEE,volume 853)

Abstract

There are several methods to track the movement of goods using different custom developed software applications. This paper presents the implementation of blockchain technology for tracking the movement of assets/equipment within the organization effectively and to share the asset/equipment without any formal authorizations. In this paper, software application is developed to implement transactions. Usage of blockchain technology for this application

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pp 383–389.
https://doi.org/10.1145/3383219.3383274

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Prasad, N.B.L.V., Pramodh, M.N.A., Lalitha, R.V.S., Kavitha, K., Saritha, K. (2022). Tracking Industrial Assets Using Blockchain Technology. In: Satyanarayana, C., Samanta, D., Gao, XZ., Kapoor, R.K. (eds) High Performance Computing and Networking. Lecture Notes in Electrical Engineering, vol 853. Springer, Singapore. https://doi.org/10.1007/978-981-16-9885-9_16

.RIS .ENW .BIB

DOI

https://doi.org/10.1007/978-981-16-9885-9_16

PRINCIPAL
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Published	Publisher Name	Print ISBN
23 March 2022	Springer, Singapore	978-981-16-9884-2

Online ISBN	eBook Packages
978-981-16-9885-9	Computer Science Computer Science (R0)

Not logged in - 210.212.210.83

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Innovative Data Communication Technologies and Application

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Innovative Data Communication Technologies and Application pp 181–196

An Analysis on Classification Models to Predict Possibility for Type 2 Diabetes of a Patient

Ch. V. Raghavendran, G. Naga Satish, N. S. L. Kumar Kurumeti & Shaik Mahaboob Basha

Conference paper | First Online: 24 February 2022

375 Accesses | **1** Citations

Part of the Lecture Notes on Data Engineering and Communications Technologies book series (LNDECT,volume 96)

Abstract

Machine learning (ML) is a theoretical method in which computers learn how to solve problems without being explicitly programmed. Classification algorithms in machine learning can extract useful information from datasets, text files, photographs, audio and video. Several factors affect the choice of a machine learning algorithm, including, but not limited to, data size, consistency and diversity, market

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S.N. Srirama. Lecture Notes in Networks and Systems, vol. 185 (Springer, Singapore, 2021). https://doi.org/10.1007/978-981-33-6081-5_7

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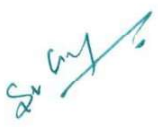
Raghavendran, C.V., Naga Satish, G., Kumar Kurumeti, N.S.L., Basha, S.M. (2022). An Analysis on Classification Models to Predict Possibility for Type 2 Diabetes of a Patient. In: Raj, J.S., Kamel, K., Lafata, P. (eds) Innovative Data Communication Technologies and Application. Lecture Notes on Data Engineering and Communications Technologies, vol 96. Springer, Singapore. https://doi.org/10.1007/978-981-16-7167-8_14

.RIS ⬇ .ENW ⬇ .BIB ⬇

DOI

https://doi.org/10.1007/978-981-16-7167-8_14

Published Publisher Name Print ISBN



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24 February 2022	Springer, Singapore	978-981-16-7166-1
Online ISBN 978-981-16-7167-8	eBook Packages Intelligent Technologies and Robotics Intelligent Technologies and Robotics (R0)	

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