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Criterion III: - Research, Innovations and Extension

3.3 Research Publications and Awards 2022



Sr. No.	Title of the paper	ISBN	Name of Author	Page No.
1	Synergizing Blockchain, IoT, and AI with VANET for Intelligent Transport Solutions	978111981308	Dr. V. R. Ghorpade	3
2	Applying ML on COVID-19 Data to Understand Significant Patterns	978-981-16-9605	Dr. V. R. Ghorpade	5
3	Blockchain-Based Secure File Storage with Hybrid Cryptography and Machine Learning for Malware Detection	2367-3370	Dr. V. R. Ghorpade	7

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12	An approach to the utilization of grid integration to analyze the performance and quality of solar photovoltaic model	2352-4847	Mrs. Shinde S.S.	25
13	Engineering Physics	978-93-5625-414-5	Mrs. Shinde S.S.	27
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19	Experimental investigation of Orientations effect on 70-watt LED under natural convection	-	Mr.J G Shinde	38

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Emerging Computing Paradigms: Principles, Advances and Applications

Editor(s): [Umang Singh](#) ; [San Murugesan](#) ; [Ashish Seth](#) [Show More](#)

Book Abstract

EMERGING COMPUTING PARADIGMS A holistic overview of major new computing paradigms of the 21st Century In Emerging Computing Paradigms: Principles, Advances and Applications, international scholars offer a compendium of essential knowledge on new promising computing paradigms. The book examines the characteristics and features of emerging ... [Show More](#)

Synergizing Blockchain, IoT, and AI with VANET for Intelligent Transport Solutions

Publisher: Wiley Data and Cybersecurity

Cite This

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Book Chapter is part of: Emerging Computing Paradigms: Principles, Advances and Applications

S.S. Zalte; V.R. Ghorpade; Rajanish K. Kamat All Authors

Editor(s): Umang Singh; San Murugesan; Ashish Seth

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Downloads



Abstract

Chapters & Sections

» Frontmatter

» Cloud Computing

» Cloud IoT

» Quantum Computing

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Chapter Abstract:

Given the massive number of smart devices getting connected through the Internet of Things (IoT), vehicular ad-hoc network (VANET) will have to exhibit immense communication capabilities, with entities such as smart traffic lights, autonomous vehicles, including other smart household and office equipment. In order to solve the anticipated problems and make travel safer, more efficient, less stressful and more enjoyable, intelligent transport systems are being introduced in VANET to create a safer infrastructure for road transport. The general issues in VANET, such as the secure transmission of messages and event messages, directly imply life-threatening problems in accidents. Moreover, as its mobile ad-hoc network, there are many chances of malicious nodes that can easily participate in the network because of its lack of centralized authority. Once a malicious node becomes a network member, it can send fake information. Sometimes, they modify safety messages; that is why secure data transmission plays an essential role in VANET. Verification of messages, authentication, integrity, and privacy

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Lecture Notes on Data Engineering
and Communications Technologies 116

V. Suma
Xavier Fernando
Ke-Lin Du
Haoxiang Wang *Editors*



Evolutionary Computing and Mobile Sustainable Networks

Proceedings of ICECMSN 2021

 Springer

Applying ML on COVID-19 Data to Understand Significant Patterns

[Amit Savyanavar](#), [Tushar Ghumare](#) & [Vijay Ghorpade](#)

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

303 Accesses

Part of the [Lecture Notes on Data Engineering and Communications Technologies](#) book series (LNDECT, volume 116)

Abstract

Corona viruses are a genus of viruses that infect vertebrate and birds, causing a variety of diseases. They induce a variety of respiratory problems in people. This study investigates COVID-19 infection rates and estimates the pandemic's scope, recovery rate, and death rate. We used Support Vector Machine (SVM), Random Forest, Decision Tree, K-nearest neighbor, and other well-known machine learning and mathematical modeling approaches. For disease diagnosis, study used three unique disease data sets (Asthma, Diabetes, and AIDS) provided there in UCI machine learning repository. After getting positive results, we applied these algorithms on COVID-19 data set. We used several categorization algorithms, each with its own set of benefits. The study's findings support the use of machine learning in disease early detection.

Lecture Notes in Networks and Systems 392

Vishal Goar
Manoj Kuri
Rajesh Kumar
Tomonobu Senjyu *Editors*

Advances in Information Communication Technology and Computing

Proceedings of AICTC 2021

 Springer

Blockchain-Based Secure File Storage with Hybrid Cryptography and Machine Learning for Malware Detection

[Ahmed Mohammed Ali](#), [Vijay Ghorpade](#), [Nitish Pathak](#) & [Neelam Sharma](#)

Conference paper | [First Online: 10 May 2022](#)

178 Accesses

Part of the [Lecture Notes in Networks and Systems](#) book series (LNNS, volume 392)

Abstract

Storing your data on hosted servers is made possible through cloud storage. With each organization using the cloud to save their data, there is a significant risk of data misuse. For added security, there is an urgent need to safeguard user data. We are here to store information on the cloud, and our main goal is to make sure data confidentiality, integrity and availability are maintained. Instead of keeping data on our local server, we have developed a model that saves data on cloud-based servers. Encrypted data will be protected. Additionally, it will check for malware attack policy while exchanging data. Finally, it will feature two layers of protection. The first is an implementation of hybrid cryptography, and the second is to avoid malware-based attacks. Incorporating machine learning will find all of the various possible malware attack methods and look for ways to prevent similar attacks in the future.

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EPILEPTIC SEIZURE CLASSIFICATION USING INTRACRANIAL
ELECTROENCEPHALOGRAM

Sanjay Shamrao Pawar,

Manik Sadashiv Sonawane,

Kamalakar Ravindra Desai,

Department of Electronics and Telecommunication Engineering, Bharati Vidyapeeth's
College of Engineering, Kolhapur

Satish Sayanna Kotwal

Department of Civil Engineering, Bharati Vidyapeeth's College of Engineering,
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Key words: *Brain Surgery, Epileptic Seizure, Epileptic Seizure Classification, Focal seizure, Intracranial Electroencephalography.*

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SMART AGRICULTURE MANAGEMENT SYSTEM FOR GRAPES
USING IOT

Priyadarshani S.Mali,

Aarti H.Tirmare

Ranjeet R.Suryawanshi

Department of Electronics and Telecommunication Engineering, Bharati Vidyapeeth's
College of Engineering, Kolhapur, Maharashtra

Hemant A.Tirmare

Department of Technology Shivaji University Kolhapur, Maharashtra, India

Abstract:

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Key words: *Agriculture, sensors, Neural Network, Back Propagation, Prediction, Internet of Things.*

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Paper ID: ICCIASH-2022/884

Comparative Analysis & Implementation of Static & Dynamic Wired Network using NS2 with NAM, Xgraph, Gnuplot Utility

Mr. Ranjeet R. Suryawanshi,

Mrs. Aarti H. Tirmare ,

Ms. Priyadarshani Mali

Department of Electronics & Telecommunication Engineering, Bharati Vidyapeeth's College of Engineering, Kolhapur, India

Mr. Hemant A. Tirmare

Department of Technology, Shivaji University, Kolhapur, India

Abstract:

These days Communication assumes crucial part in different aspects of person life as it gives the data of new innovation, advancements, research happening all over the world. All important sectors like government, corporate, education, entertainment etc are moving on online platform. Also there is huge rise in concept of work from home, online shopping, e-commerce, online banking etc. In today's world, use of computer network and its components have been increased tremendously. We now have the ability to communicate and retrieve data thanks to the Internet, which has also had a big impact on how we work and live.

In this paper we have implemented static and dynamic wired networks designed with different node scenario and topologies along with NAM, Xgraph & Gnuplot utility of NS2.35.

Key words: NS2-Network Simulator Version 2, NAM- Network Animation, XGRAPH, GNUPLOT, DV-Distance Vector Routing.

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Experimental investigation of Orientations effect on 70-watt LED under natural convection

¹Avadhut Jadhav, ²Jitendra Shinde, ³Gajendra Pol

^{1, 2, 3}Bharati Vidyapeeth's College of Engineering Kolhapur

¹arjmesa@gmail.com, ²jgsbvcoek@gmail.com, ³gjpmesa@gmail.com

Abstract: The advancement in the electronic market and utilization of LED day by day is rapidly increasing. But the Performance of LED is critically affected by high temperatures. Cooling is the main challenge in front of a designer. In the indoor stadium, petrol pumps, like in various commercial applications, LEDs are mounted at different orientations. In this paper, the effect of the orientation of LED on its thermal resistance and cooling performance by natural convection is studied experimentally. LED are generally cooled by the passive cooling technique. i.e., heat sink is present for cooling of LED. Due to ease of manufacturing, rectangular fins are preferred in many heat sinks. As LEDs are mounted at various orientations, it will affect the airflow circulation, affecting the cooling of the LED heat sink. We observed that at 45° the thermal resistance offered by the same heat sink is less than the other. And at 180° thermal resistance of the heat sink is higher than in other orientations. From Its is observed that orientation affects the cooling performance of LED. Tilting arrangement is provided to experimental setup carried out experiments carried out at 0°, 45°, 90°, 135°, 180°, 225°, 270°, 315°.

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Smart Electric vehicle charging Station for Residential Complex

Publisher: IEEE

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E. Kannapiran ; Kapil Joshi ; **Rajkumar K. Chougale** ; Naveen Rana ; Neeraja B ; Chamandeep Kaur [All Authors](#)

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Abstract

Document Sections

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II. Charging Station for Electric Vehicle

III. Charging Methods

IV. Electric Vehicle Charger

V. Implementation

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Abstract:

We are very sophisticated in technology, living in a new era where artificial robots have reached Mars and some have also reached the solar system, but this is how humans survive until another Earth like a planet is no longer found. Means our responsibility to keep our planet clean and safe from global warming. When we talk about global warming, cars play an important role in increasing global warming, as they produce a lot of toxic gas that is harmful to our ecosystem. B. CO₂, N₂O. As shown in Figure 1 of India, the rate of air pollution by vehicles is 27%. That's quite a few, and most importantly, the fossil fuel supply is limited. Therefore, one needs to look for alternative fuels. Alternatively, using an electric vehicle (EV) is the best option. It is safe and does not generate gas. Also, there is no loud noise. The Government of India has also taken some steps to control pollution. They started several programs to promote the vehicle. Vehicles are already in use in some big cities, and their numbers are increasing every day. But the main problem is that there is no public charging station that can charge the vehicle. This article describes the concept of an intelligent charging system for unmanned aerial vehicles.

Published in: 2022 International Conference on Innovative Computing, Intelligent Communication and Smart Electrical Systems (ICESES)

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An approach to the utilization of grid integration to analyze the performance and quality of solar photovoltaic model

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Abstract

Photovoltaic power is most important cause of energy subsequently it is simultaneously clean and limitless. PV power conversion devices must be maintained at MPP there to maximize the energy production of Solar array. To get the most energy out of the Solar array, MPPT monitoring is necessary. In recent times, a slew of strategies for controlling the voltage was presented. Power electronic devices developments for the combination of wind and solar power generation are discussed. Based on the dependability and development of each technology, conversations concerning developments and trends in sustainable source systems are provided. The consumption of electricity generated is increasing exponentially, and as a result, the incorporation of photovoltaic panels into distribution companies is increasing rapidly as well, even though it has a substantial impact on the show's voltage stability. The purpose of this report is to look at how solar PV integration affects distribution transmission energy reliability. The analysis is carried out using RSCAD software, with one of the radial distribution networks with the lowest voltage profile accessible during the maximum of linked loads. Furthermore, the influence of current and voltage on the transmission or distribution system is compared by analyzing distribution system configuration with various solar PV system penetration rates. The simulated findings show that as the penetrating capability of the PV system increases, large harmonic distortion levels are injected, indicating that the solar photo system should only integrate corresponding to the highest capability the connection can sustain. When a PV technology is connected further than this maximum penetration of renewable energy sources, it produces considerable harmonic components, which harms the system that improves. Total voltage output frequency and current consumption distortion are determined to be 4.98 percent and 14.99 percent, correspondingly, at

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Experimental investigation of Orientations effect on 70-watt LED under natural convection

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Abstract: The advancement in the electronic market and utilization of LED day by day is rapidly increasing. But the Performance of LED is critically affected by high temperatures. Cooling is the main challenge in front of a designer. In the indoor stadium, petrol pumps, like in various commercial applications, LEDs are mounted at different orientations. In this paper, the effect of the orientation of LED on its thermal resistance and cooling performance by natural convection is studied experimentally. LED are generally cooled by the passive cooling technique. i.e., heat sink is present for cooling of LED. Due to ease of manufacturing, rectangular fins are preferred in many heat sinks. As LEDs are mounted at various orientations, it will affect the airflow circulation, affecting the cooling of the LED heat sink. We observed that at 45° the thermal resistance offered by the same heat sink is less than the other. And at 180° thermal resistance of the heat sink is higher than in other orientations. From Its is observed that orientation affects the cooling performance of LED. Tilting arrangement is provided to experimental setup carried out experiments carried out at 0°,45°,90°, 135°,180°,225°,270°,315°.

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**Comparative Analysis & Implementation of Static & Dynamic Wired
Network using NS2 with NAM, Xgraph, Gnuplot Utility**

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Department of Electronics & Telecommunication Engineering, Bharati Vidyapeeth's
College of Engineering, Kolhapur, India

Mr. Hemant A. Tirmare

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Abstract:

These days Communication assumes crucial part in different aspects of person life as it gives the data of new innovation, advancements, research happening all over the world. All important sectors like government, corporate, education, entertainment etc are moving on online platform. Also there is huge rise in concept of work from home, online shopping, e-commerce, online banking etc. In today's world, use of computer network and its components have been increased tremendously. We now have the ability to communicate and retrieve data thanks to the Internet, which has also had a big impact on how we work and live.

In this paper we have implemented static and dynamic wired networks designed with different node scenario and topologies along with NAM, Xgraph & Gnuplot utility of NS2.35.

Key words: *NS2-Network Simulator Version 2, NAM- Network Animation, XGRAPH, GNUPLOT, DV-Distance Vector Routing.*

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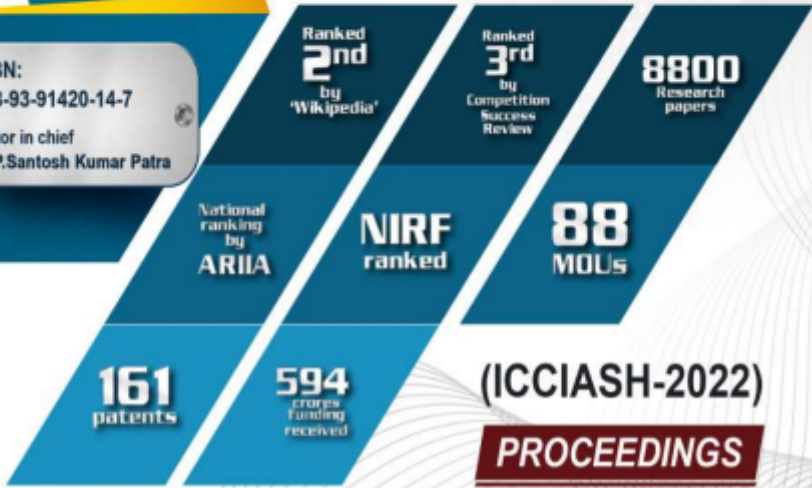
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**EPILEPTIC SEIZURE CLASSIFICATION USING INTRACRANIAL
ELECTROENCEPHALOGRAM**

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College of Engineering, Kolhapur

Satish Sayanna Kotwal

Department of Civil Engineering, Bharati Vidyapeeth's College of Engineering,
Kolhapur

Abstract:

Epileptic seizure is a major neurological brain disorders and which has affected about two percentage of world's population. A medical test knows as Electroencephalography, which records brain signal is used to diagnosis seizure. Intracranial Electroencephalography is a method where electrodes are implanted over the cortex of brain with help of surgery and is used to measure or record brain signal. Epileptic Seizure classification is still challenging areas of research. Epileptic Seizures are classified as focal seizure, generalized and secondary generalized seizure depending upon the area of brain from which it is generated and how it spreads. Classification of Epileptic seizure helps in during brain surgery and treatment of seizure to understand which part of is responsible for generation of seizures. Developed Epileptic seizure classification algorithm classifies seizures as focal Seizure, generalized Seizure and secondary generalized seizure. The classification depends on the percentage of implanted electrodes detecting presence of seizure activity. Epileptic Seizure Classification helps in brain surgery and with proper drug management can improve the quality of life of Epileptic patients.

Key words: *Brain Surgery, Epileptic Seizure, Epileptic Seizure Classification, Focal seizure, Intracranial Electroencephalography.*

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**SMART AGRICULTURE MANAGEMENT SYSTEM FOR GRAPES
USING IOT**

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College of Engineering, Kolhapur, Maharashtra

Hemant A.Tirmare

Department of Technology Shivaji University Kolhapur, Maharashtra, India

Abstract:

Grapes are a wonderful subtropical fruit contains full of pulp, vibrant color and having a huge health benefits. It has huge Phytochemicals content which reduces the growth of chronic diseases. An attempt was made to fulfill the requirement of the world with best superiority of Indian grapes. In this study, Sangli district scored top grape producing regions in Maharashtra. Grape exports to Asia and European countries. In the proposed study, attention has been given on increasing production as well as tonnages of export of superior grapes with the help of efficient and effective use of technology, so that it can play an important role in feeding the world with Indian grapes according to consumer's demand worldwide.

Key words: *Agriculture, sensors, Neural Network, Back Propagation, Prediction, Internet of Things.*

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**Comparative Analysis & Implementation of Static & Dynamic Wired
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Experimental investigation of Orientations effect on 70-watt LED under natural convection

¹Avadhut Jadhav, ²Jitendra Shinde, ³Gajendra Pol

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