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In the modern world, sensors and sensor networks are critical features in developing applications for control and automation in engineering and technology. Cognitive Science is a multidisciplinary area of research that covers artificial intelligence, neuroscience, mathematics, philosophy, psychology, linguistics, automated diagnosis etc. Cognitive sensors and associated AI and algorithms are most important components of cognitive science research and studies. This book will provide a review of the emerging theme of cognitive sensors, how it functions and its applications in a range of disciplines. Volume 2 features cognitive sensors in smart healthcare, including appropriate signal processing, filtering, machine learning and AI for medical

**Editors**

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April 2023

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CHAPTER 2

# IoT-enabled real time student health monitoring and interactive system using LoRa

P Muthu Subramanian and A Rajeswari

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Pages 2-1 to 2-17

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## Abstract

Chapter 2 proposes an Internet of Things-enabled real-time student health monitoring and interactive system based on LoRa.



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COMPREHENSIVE REVIEW ON STATISTICAL MODELING APPROACH TO PREDICT THE COVID-19 TRANSMISSION



## Comprehensive Review on Statistical Modeling Approach to Predict the COVID-19 Transmission

### Authors

Vallaippan Raman<sup>1,\*</sup>, Navin Aravinth<sup>1</sup>, Preetha Merlin Joy<sup>1</sup>, Kowsalya<sup>1</sup>

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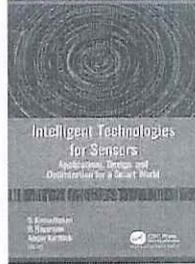


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## Characterization of Syzygium cumini Particulates-Filled Epoxy Composites

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- ICEES-322 AMRIT - Alternative Machine Reasoning and Integrative Techniques for prognostics model of electric vehicles  
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- ICEES-349 Hybrid Renewable Energy System with Flyback Converter for Multiple Sources  
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Geetha, S., Karthiga, M., Mary, A.T., Snega, V., Subhikshaa, R.

Coimbatore Institute of Technology, Electrical and Electronics Engineering, Coimbatore, India

### Abstract

COVID-19, is caused by the transmission of SARS-CoV-2 through direct or indirect contact with infected people though respiratory droplets has transitioned from a pandemic to an endemic but is still regarded as active by WHO. Restrictions and lockdowns were lifted as the situation became endemic, but the previous measures had to be kept in place. By developing a module that includes temperature monitoring, face mask detection, a non-contact sanitizer dispenser, and door automation that operates based on the number of individuals inside a closed area in order to maintain social distance, our project aims to incorporate these precautions into our everyday language. As a part of making the new normal easily adaptable, we also introduce a webpagebased reservation system, which wmm essentially display the current count and also help in reducing the waiting periods. © 2023 IEEE.

### Author keywords

Arduino UNO Covid 19 DHT 11 ESP32 camera IoT IR Sensor Servo Motor MG90 Slot booking

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Engineering controlled terms: Internet of things

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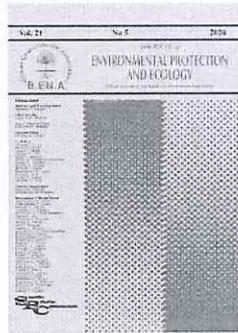
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Authors: GOBIKANNAN, K.; ELANGO, S.; GUNASEKARAN, S.; SHARMEELA, C.

Keywords: **five-phase power measurement; five-phase supply; magneto motive force; pentagon; star**

Journal: Journal of Environmental Protection and Ecology 24(7), (2023), Pages: 2467-2479

MACHINE LEARNING TECHNIQUES FOR COMPARING TIME-FREQUENCY OF P-QRS-T SIGNAL WAVE FOR DIAGNOSING INDUCTION MOTOR FAULT UNDER ENVIRONMENTAL IMPACT

Authors: SASIKUMAR, B.; VENKATASALAM, K.; RAJENDRAN, P.

Keywords: **DWT; and feature; extraction and classification; induction fault motor; machine learning; matching pursuit; noise signal**

Journal: Journal of Environmental Protection and Ecology 24(7), (2023), Pages: 2480-2492

QUALITY EXPOSURE OF COUNTRY CHICKEN TO REDUCE THE FARMING RISKS USING GRABCUT ALGORITHM

Authors: RAJESH, J.; SUGANTHI, M.; RAJENDRAN, P.

Keywords: **GrabCut; KNN-RBF; colour features; density; image mining; measuring country chicken quality; processing**

Journal: Journal of Environmental Protection and Ecology 24(7), (2023), Pages: 2493-2502

CLASSIFICATION OF CORAL IMAGES USING ENSEMBLE CONVOLUTIONAL NEURAL NETWORK (ECNN) WITH DATA AUGMENTATION FOR ENVIRONMENT STABILITY

Authors: FIRDOUS, R. JANNATHUL; SABENA, S.

Keywords: **Adam optimisation; CNN; classification; coral reef; data augmentation; deep learning**

Journal: Journal of Environmental Protection and Ecology 24(7), (2023), Pages: 2503-2514

CYBER ATTACKS DETECTION USING GoogleNet MODEL FOR ENVIRONMENTAL AWARENESS IN CITY APPLICATIONS

Authors: MEENAKSHI, A.; MAHALAKSHMI, S. DEVI; SIVAGAMI, S. VANITHA; RAJASEKARAN, M.

Keywords: **GoogleNet and NSL-KDD dataset; convolutional neural network; deep; deep neural networks; learning; network intrusion detection**

Journal: Journal of Environmental Protection and Ecology 24(7), (2023), Pages: 2515-2524

ENSEMBLE DEEP TRANSFER LEARNING MODEL FOR NETWORK ATTACKS DETECTION IN INTERNET OF THINGS WITH SENSOR NETWORKS

Authors: MEENAKSHI, A.; ASHA, S.; HARIPRIYA, R.; ASIR, D.

Keywords: **DenseNet 121; NSL-KDD dataset; ResNet50; and ensemble transfer learning; feature selection; intrusion detection system**

Journal: Journal of Environmental Protection and Ecology 24(7), (2023), Pages: 2525-2535

Xinxiang Vocational and Technical College, 453 000 Xinxiang, China

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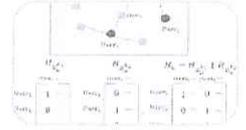
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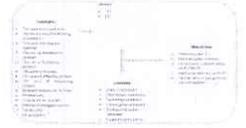


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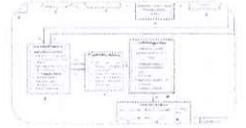
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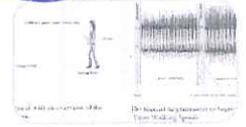
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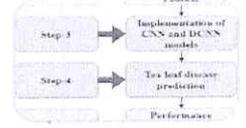
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Neural Computing and Applications  
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## Levy flight-particle swarm optimization-assisted BiLSTM + dropout deep learning model for short-term load forecasting(Article)

Kiruthiga, D., Manikandan, V.

<sup>a</sup>Teaching Learning Centre, Coimbatore Institute of Technology, Coimbatore, India  
<sup>b</sup>Department of Electrical and Electronics Engineering, Coimbatore Institute of Technology, Coimbatore, India

### Abstract

This paper proposes a new optimized Deep Learning (DL) network design for time series load forecasting. At first, DL's hyper parameters are optimized using the Levy flight-particle swarm optimization (LF-PSO) technique; then, the optimized DL model is used for load prediction. Furthermore, the results are compared with the existing state-of-the-art techniques to show prediction accuracy. Experiment and measured values indicate that the proposed new DL model is highly efficient for load prediction. © 2022, The Author(s), under exclusive licence to Springer-Verlag London Ltd., part of Springer Nature.

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BiLSTM Deep learning Evolutionary computation Levy Flight LF-PSO Load forecasting PSO

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Engineering controlled terms: Deep learning Electric power plant loads Forecasting

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