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ADITYA

Institute of Technology and Management

(An Autonomous Institution)

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ADITYA

Institute of Technology and Management

(An Autonomous Institution)

Department of Information Technology

Vision and Mission of the Institute

Vision

To evolve into a premier engineering institute in the country by continuously enhancing the range of our competencies, expanding the gamut of our activities and extending the frontiers of our operations.

Mission

Synergizing knowledge, technology and human resource, we impart the best quality education in Technology and Management. In the process, we make education more objective so that efficiency for employability increases on a continued basis.

Vision and Mission of the Department

Vision

Create high-quality engineering professionals through research, innovation and teamwork for Information Technology services with outstanding faculty, facilities and education.

Mission

M1: Information Technology program dedicates itself to provide students with a set of skills, knowledge and attitude that will permit its graduates to succeed and thrive as successful information technologists.

M2: Enhance overall personality development which includes innovative thinking, Team work, entrepreneur skills, communication skills, employability skills and ethical conduct.

M3: Ensuring effective teaching–learning process to provide in-depth knowledge of Inter disciplinary areas.

M4: Providing industry interactions through consultancy and sponsored research for the societal needs.

Chairman's Message

At AITAM, we are committed to excellence in everything we do. We strive to mould the students in balancing intellectual and practical skills to become leaders in all the fields of Technical know-how and Management. We have created the finest facilities for the students to make the most of their scholastic pursuits. We are closely aligned with the corporate world which ensures exchange of ideas and experiences that keep our curricula focused on current developments and challenges in the field of engineering. We are firmly committed to research and consulting activities to contribute to the development of the discipline of engineering. Our vitality lies in our spirit of innovation. Our strength lies in our pragmatic approach. Our success lies in our will to do.

Dr. K. Someswara Rao
CHAIRMAN

Secretary's Message

Aditya Institute of Technology and Management is founded to meet the increasing demand for competent engineering graduates. Within a short span of its inception, AITAM has grown to be a premier engineering college of its kind and has won laurels and kudos from the industry. The faculty and staff in AITAM are dedicated to providing first-class education that instills strong and potent basic knowledge for sound practice in science and engineering for the well-being of the society. The Institute offers curricula that nurtures creative thinking and prepares students for productive and rewarding careers. The Institute offers programmes that deepen learning experiences of our students and prepare them for successful careers as engineers.

Sri L.L. Naidu
SECRETARY

Director's Message

Engineering education at AITAM is indeed a rewarding intellectual experience. The Institute prepares the engineering professionals of tomorrow imbued with insight, imagination and ingenuity to flourish as successful engineers. Our programs are attuned to the needs of the changing times. The classrooms are ultra-modern; the library and labs are cutting-edge; and all the members of the faculty are workaholic professionals and masters in their fields. Not surprisingly, our students are recruited by such renowned organizations as HCL, Satyam, WIPRO, INFOSYS, TCS, Visual Soft, Innova-Solutions and InfoTech. The exceptional dedication of our students, faculty and staff, and our collaborations with Industry and other institutions ensure that the Institute is well-poised to create a unique niche in the horizons of engineering education.

Prof. V.V. Nageswara Rao
DIRECTOR

Principal's Message

It is only through knowledge that man attains immortality. Knowledge has to expand or grow to remain as knowledge. The road to excellence is toughest, roughest and steepest in the Universe. The world requires and honors only excellence. Available information has to be directed by wisdom and intelligence to create new knowledge. Promotion of creativity is the new role of education. It is only through creative thinking that the present and future problems can be addressed to find dynamic solutions. Technology should be used to help remove poverty from the world. In fact forty per cent of the world's poor are in India. Confidence leads to capacity. It is faith in oneself that produces miracles. Education at AITAM helps build character, strengthen the mind, expand the intellect and establish a culture of looking at problems in a new perspective. The student is put through rigorous training so that he can stand on his own feet after leaving the portals of the Institute.

Dr.A.S.Srinivasarao
PRINCIPAL

HOD's Message

Information Technology is a professional Engineering Discipline that deals with application of computers to store, retrieve, transmit and manipulate data.
Our Department has a team of qualified and experienced faculty and staff members. we motivate both faculty and students continuously to improve the quality of education and to position of leadership in Engineering and Technology.
The Department guides the students to develop their Technical skills and motivate them to learn in Research Methodology. Our department has been conducting National workshops and organizing seminars since its beginning to keep the faculty and students with the latest developments in the field of Technical education. Our department faculties are actively publishing in reputed international and national journals and actively participated in various international and national conferences to publish papers.

Dr.Y.Ramesh
HOD of IT Department

B.TECH PROJECT ABSTRACTS

S.NO	Regd No	Student Names	Title
1	19A51A1237	N. Ramya	**AN APPROACH FOR FAKE NEWS DETECTION USING MACHINE LEARNING THROUGH NLP**
	19A51A1220	K. Sruthi	
	19A51A1214	G.V.Abishek	
	19A51A1234	N.Shanmukh Rao	

ABSTRACT

Fake news detection is defined as the task of classifying news as real or fake. The term 'fake news' refers to the false or misleading information that appears as real news. It is a widespread and serious problem in the society. The fake news on social media and various other media is wide spreading and is a matter of serious concern due to its ability to cause a lot of social and national damage with destructive impacts. A lot of research is already focused on detecting it. Fake News must be detected, and its sharing should be stopped before it causes further damage to the country. Fake news generally defined as misleading news often constructed with an aim to create a sense of belief and to mislead people to believe a particular incident. The principal objective of fake news is to spread it more rapidly and to influence the society. So, with the help of Machine learning algorithms and using Natural language Processing, we are trying to aggregate the news and determine whether the news is real or fake. The algorithms we are using here are SVM , Random Forest, Logistic Regression algorithms, comparison of the various algorithms is done in terms of calculating their accuracy.

Keywords: Fake News Detection, Machine Learning, Natural Language Processing, Classification Algorithms (Support vector machine, Random Forest, Logistic Regression).

S.NO	Regd No	Student Names	Title
2	19A51A1218	K. Satya Sai	**PREDICTION OF TOMATO LEAF DISEASE USING DEEP LEARNING APPROACH**
	19A51A1215	G. Mounika	
	19A51A1203	B. Reshma	
	19A51A1235	N. Keerthi	
	19A51A1262	K. Kiran Kumar	

ABSTRACT

Agriculture performs a crucial role in the advancement of a country's economy as it is the main source of livelihood for the people in the country. Therefore, exploration in the agricultural sector paves a way for the development of a country's economic condition. Almost 60-70% of the people are engaged in agriculture either directly or indirectly. According to FAO (Food and Agriculture Organization), the world population is projected to rise to 9.1 billion in 2050 from a current 6.7 billion, requiring a 70-percent increase in farm production [1]. In present farming, crop disease is the most common thing that affects the productivity of crops. The traditional method of finding plant disease is with the naked eye. As a consequence, delays are confronted frequently in the traditional as well as the manual method of detection of diseases due to the frequent travel of farmers in a long trip to the expert for a consultation followed by bounded availability of experts. To get over this kind of challenges faced by the farmers in daily life, in this project we use deep learning approaches such as VGG16, DenseNet, and MobileNet for the prediction of leaf disease in the tomato plant.

Keywords. MobileNet, DenseNet, VGG16, Tomato Leaf Disease

S.NO	Regd No	Student Names	Title
3	19A51A1253	**T. Bhumika**	**An Advanced Ensemble Machine Learning Approach for Classification of Osteosarcoma**
	19A51A1259	**V. Vishnu Hruthika**	
	19A51A1217	**J. Usha**	
	19A51A1231	**M. Janardhana Rao**	

ABSTRACT

Bone cancer is one of the life-threatening diseases which may cause death to many individuals. There must be an accurate detection and classification system available to diagnose bone cancer at early stage. Early detection of cancer seems to be the important factor in increasing the chance of cancer patient survival. Classification of cancer is one of the most challenging tasks in clinical finding and diagnosis. Due to the rarity of primary bone tumors, precise radiologic diagnosis often requires an experienced treatment. In order to make the diagnosis more precise and to prevent the overlooking of potentially dangerous conditions, artificial intelligence has been continuously incorporated into medical practice in recent decades. This work elaborates on advanced ensemble machine learning techniques (Bagging classifier) for Bone cancer detection and classification.

KEYWORDS: Bone cancer, Artificial intelligence, Machine learning, Ensemble learning, Classification, Osteosarcoma

S.NO	Regd No	Student Names	Title
4	19A51A1256	Vaddi Likhitha	**Brain Tumor Image Segmentation Using Deep Networks**
	19A51A1233	Muppidi Yamini	
	19A51A1202	Barnana Gandhi	
	19A51A1248	Sana Sharanya	

ABSTRACT

An abnormal cell development in the human brain is known as a brain tumor. Brain tumors can take many distinct forms, including gliomas, astrocytoma's, pituitary adenomas, and schwannomas. Headache, nausea, seizures, and confusion are the most common symptoms of a brain tumor. These are divided into four grade levels, ranging from grade 1 to grade 4. The first two classes are benign (noncancerous) and do not spread to other sections of the brain, whereas grades three and four are malignant (which do spread to other parts of the brain) (cancerous). Current methods for assessing brain tumors in humans include computed tomography (CT), magnetic resonance imaging (MRI), and ultrasound images. The MRI is helpful for some conditions that a CT scan cannot identify because the CT images are less clear and carry higher radiation. A computer-aided diagnosis model is used to detect brain tumors using the convolutional neural network (CNN) method because a pathologist cannot reliably diagnose the tumor by looking at an MRI image. The CNN method is used in this MRI input to classify tumors and determine their stages in human brain tumors. Finally, the proposed study aids in the quick diagnosis of brain disorders, benefits society, and spares countless lives.

Keywords-Deep learning, Convolutional neural network, MRI, Cancerous, Malignant..

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S.NO	Regd No	Student Names	Title
5	19A51A1204	**B.GAYATRI**	**Cataract Detection Using Deep Learning**
	19A51A1207	B.SRAVANI	
	19A51A1238	P.AKASH	
	19A51A1241	**P.SARATH NAIDU**	

ABSTRACT

As we all know eye is an important sensing organ of human being. Eye is inter connected with parts like iris, pupil, lens, retina, cornea, optic nerve. According to the data of world health organization (WHO), currently at least 2.2 billion of people of world are suffering with visual defects. Cataract is one of the most common eye diseases which may be leads to blindness mostly the main symptom is blurry vision. Cataract is an age-related eye disease, and its incidence rate rises with age, but it occurs to new born babies in rare cases. Cataract forms when protein builds up in the lens of the eye and makes it cloudy. Early intervention and timely treatment can largely avoid blindness. The proposed model is going to use the deep learning algorithms such as CNN algorithm, Mobile net and VGG 16 models. The proposed system will detect and also predict the cataract and helpful to the people.

KEYWORDS: Deep learning, Convolutional neural network (CNN), VGG-16, Mobile Net.

S.NO	Regd No	Student Names	Title
6	19A51A1246	**R.Pratyusha**	**Deep Learning FaceNet Model for Face Recognition**
	19A51A1240	P. Sruthi	
	19A51A1245	**R. BhargavaNaidu**	
	19A51A1244	P. Urmila	

ABSTRACT

Face recognition is the main field of computer vision, to tackle this issue, several classic face identification algorithms employ face geometric features and template matching are used, however, speed and accuracy are challenging to evaluate. The Multi-task Cascaded Convolutional Neural Networks (MTCNN) is employed to attain rapid face detection and face alignment, which is used for extracting and detection of real image by trained faces. In this work proposes an improved Face Net with MTCNN, loss function is employed to comprehend face verification and recognition with high accuracy. Hence our purpose of work suggests a better outcome through automated face recognition using deep learning Face Net model made by Google. The input for our model may be either lives or image, which is integrated with a hardware device to track student attendance in the classroom. Face Net model is used for training and prediction while storing through face matrix with their corresponding names in a list.

Keywords: MTCNN, FaceNet, Face Recognition, Loss function, Illumination, Face alignment

S.NO	Regd No	Student Names	Title
7	19A51A1227	**M. Yasaswini**	**Intelligent Breast Cancer Identification Using Hybrid CNN Based Model**
	19A51A1255	T. Vijay	
	19A51A1258	**V. Madhavi**	
	19A51A1251	S.sai Manoj	

ABSTRACT

Breast cancer is the world's second most ordinary cancer in women. It is the leading cause for women death. Biopsy is the major technique used to identify the breast cancer but it would be time-consuming, error-prone. Observing at the numerous deaths caused by Breast cancer, it is considered to be a major threat. The early detection and prevention can reduce the threat completely without causing harm to patients by following new techniques. Many researchers are trying to come out with prognosis systems by using Machine Learning algorithms. When the histopathological images are given as inputs to these algorithms, it would be difficult to know quality features. So, we use deep learning algorithms along with machine learning algorithms for the identification of breast cancer. The hybrid CNN model will perform better in this context. This would classify the histopathological images either into benign class or malignant class. The dataset used for our project is BreakHis dataset. We implemented using CNN, CNN with SVM, CNN with Random Forest, VGG-16 with XGBOOST.

Keywords: Deep learning**,** CNN, SVM, Random Forest, VGG-16, XGBOOST.

S.NO	Regd No	Student Names	Title
8	19A51A1223	**K. BalaManikanta**	**Intelligent Chronic Kidney Disease Diagnosis System Using Multi-layer perceptron**
	19A51A1263	K. Lakshmi Sravani	
	19A51A1232	M. Yashwant	
	19A51A1216	I. Kameswara Rao	

ABSTRACT

Chronic Kidney Disease (CKD) is also known as a Chronic Renal Disease, it is a loss of kidney function over time. This disease damages the kidney and declines their ability to keep you healthy. Some other complications such as blood pleasure, anemia, weak bones, poor nutritional health, and nerve damage can also take place. Some Machine Learning techniques are excellent in predicting CKD, machine learning models can effectively assist physicians in achieving this goal. Chronic kidney disease (CKD) known as Uddanam nephropathy is prevalent to the Andhra Pradesh region of India. In the 1990s, Andhra Pradesh became the first state to report prevalent nephropathy. More than 34,000 cases of renal illness were reported in the area in 2015, and it was estimated that at least 4,500 people had passed away as a result of the condition in the previous ten years. Although it has been acknowledged that chronic kidney disease is a public health issue, Uddanam endemic nephropathy is the least understood and well-known of the nephropathies with unclear aetiologias. Our project helps in preventing unwanted consequences, for this purpose ML method is being extensively advocated for early detection of symptoms and diagnosis of several diseases recently. It involves the classification algorithm on the dataset obtained from the medical records of affected people.

KEYWORDS: . Chronic kidney disease (CKD) , Machine Learning, classification algorithm.

S.NO	Regd No	Student Names	Title
9	19A51A1261	Reetika Sai Yerukola	**Toxic Comment Classification Using Deep Learning**
	19A51A1212	Harshini Eppili	
	19A51A1225	Raj Ganesh Lopinti	
	19A51A1228	Avinash Marpu	

ABSTRACT

Online communication media acts as a platform for people to connect, collaborate and discuss, overcoming barriers for communication, and some people take it as a medium to direct hateful and abusive comments that may prejudice an individual's emotional and mental well-being. Explosion of Online communication makes it virtually impossible for filtering out the hateful tweets manually; hence there is need for a method to filter out the toxic and abusive comments and make social media cleaner and safer to use. By using LSTM neural networks, Character-level CNN, Word-level CNN and Hybrid model (LSTM + CNN) in this toxicity analysis intends to interpret the type of comment and determine the type of various types of toxic classes and we performed a comparative analysis between these models. The input to our algorithm is comments from online platform like toxic and non-toxic. The results would help up to create an online web interface where we would be able to identify the toxicity level in the given phrase or sentence and classify them in to their order of toxicity.

KEYWORDS: abusive comments, toxic classes, LSTM, neural networks, CNN, Hybrid model, toxic classes, online web interface.

JOURNALS/CONFERENCES ABSTRACTS

(STUDENTS AND FACULTY)

"25 years of particle swarm optimization: Flourishing voyage of two decades"

Janmenjoy Nayak,H. Swapnarekha,Bighnaraj Naik, Gaurav Dhiman & S. Vimal

Abstract: From the past few decades many nature inspired algorithms have been developed and gaining more popularity because of their effectiveness in solving problems of distinct application domains. Undoubtedly, Particle swarm optimization (PSO) algorithm is the most successful optimization algorithm among the available nature inspired algorithms such as simulated annealing, genetic algorithm, differential evolution, firefly, cuckoo etc., because of its high efficiency and capability to adjust in different dynamic environments. This year marks its 25th anniversary of PSO, one of the base inspirations for many modern-day metaheuristics development. Because of its simple structure and few numbers of algorithmic parameters, PSO from its origin has acquired widespread popularity amongst researchers, technocrats and practitioners and has been proven to provide better performance in various functional areas such as networking, robotics, image segmentation, power generation and controlling, fuzzy systems and so on. PSO is a population based global heuristic optimization approach motivated by the social behavior of animals chasing for food such as flock of birds, schools of fish. PSO attempts to stabilize exploration and exploitation by combining local search capabilities with global search capabilities. In this article, an in-depth analysis of PSO with its developments from 1995 to 2020 has been presented. Mainly, the improved variants of PSO along with solvable application areas are discussed in detail to provide a scope for the further development. At the end of the paper, the growth of the PSO in various application areas has been presented with factual representation. The main motive of this survey is to inspire the researchers, practitioners and technocrats to develop improved and innovative solutions for solving complex problems in various domains using PSO.

Index Terms: Particle swarm optimization (PSO)

“An optimistic firefly algorithm-based deep learning approach for sentiment analysis of COVID-19 tweets”

H Swapnarekha, PB Dash, D Pelusi

Abstract: The unprecedented rise in the number of COVID-19 cases has drawn global attention, as it has caused an adverse impact on the lives of people all over the world. As of December 31, 2021, more than 2, 86,901,222 people have been infected with COVID-19. The rise in the number of COVID-19 cases and deaths across the world has caused fear, anxiety and depression among individuals. Social media is the most dominant tool that disturbed human life during this pandemic. Among the social media platforms, Twitter is one of the most prominent and trusted social media platforms. To control and monitor the COVID-19 infection, it is necessary to analyze the sentiments of people expressed on their social media platforms. In this study, we proposed a deep learning approach known as a long shortterm memory (LSTM) model for the analysis of tweets related to COVID-19 as positive or negative sentiments. In addition, the proposed approach makes use of the firefly algorithm to enhance the overall performance of the model. Further, the performance of the proposed model, along with other state-of-the-art ensemble and machine learning models, has been evaluated by using performance metrics such as accuracy, precision, recall, the AUC-ROC and the F1-score. The experimental results reveal that the proposed LSTM+ Firefly approach obtained a better accuracy of 99.59% when compared with the other state-of-the-art models.

Index Terms: *long short-term memory; COVID-19; sentiment analysis; tweets; firefly algorithm*

“Recent advancements and challenges of Internet of Things in Healthcare”

Ramesh Yegireddi,Jagadeesh Kumar G,Naresh Tangudu,Nagaraju Rayapti,Kavitha K,G V L Narayana

Abstract: With the expanding progressions in computing devices, mechanical devices, and software to Liaoning and interchange information with diverse electronic gadgets and skeletons over cyberspace, there is a high chance of headway in another region. Well-being is a fundamental viewpoint for everybody in this world regardless of old enough. Everybody needs to prompt a better well-being life cycle by following cleanliness propensities. During this Corona virus pandemic circumstance, IoT has a significant effect on the medical care industry by refining gadget and human connections which drove numerous medical care applications and offers part of advantages to people who are under medical care, households, practitioners, critical care facility centers, and life insurance agencies. In this review, we did a complete review of the Internet of Things progressions, techniques, insights, and achievement cases applied to medical care.

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Index Terms: *IoT, Healthcare, Sensors, Architecture, Medical, Gadgets.*

“A Comparative Study For Social Network Sentiment analysis using Machine Learning Algorithm”

K.Kavitha1 , Naresh Tangudu2* , Yegireddi Ramesh3 , Suneetha Chittineni4 , Ujji Monika5 , K.Harshitha Raj6

Abstract: Recent times social media got more attention which offers individual in world can express their views on multiple subjects and reached all corners of world. Twitter is one of the famous micro blogging social network gain more popularity due to its secured features. Many public and private organizations can make use of the tweets expressed by customers from entire globe and analyze those tweets which are vital to stand in the global market. With the help of machine learning algorithms one can make sentiment analysis more matured by codifying the application which can measure customer perceptions mathematically. In this work we considered well known supervised algorithms, and draws comparative study

Index Terms: *-Twitter, sentiment analysis, social media, Long short term memory, Decision Tree , Support vector machine, Logistic Regression, Random Forest, Naïve Bayes.*

“A Complete Prototype Of Tri-Modal Biometric Authentication System”

B. Ramesh Naidu, Ch. Someswara Rao, K.V.L. Bhavani, Naresh Tangudu, M. Jayanthi Rao,

Abstract: In traditional authentication systems, passwords, PINs, and signatures are used as a single source for identification of people. But these can be lost, stolen, or subjected to spoofing attacks. In a biometric authentication system, a person is identified through physical traits or behavioral traits. These traits are fingerprints, palm prints, face, iris, signature, speech, and so on. Biometric authentication systems are more robust, secure, and they do not require you to carry things such as smart cards, which are used in the standard authentication systems. The main advantage of the biometric system is that a person is identified with a trait that cannot be forgotten, misled, guessed, or easily copied. The prime aim of this paper is to develop a biometric authentication system with trimodality by combining physical and behavioral traits and validating them experimentally.

Index Terms: *Authentication; Biometric; trait*

“Hybrid Bayesian optimization hypertuned catboost approach for malicious access and anomaly detection in IoT nomaly framework”

Janmenjoy Nayak [a], Bighnaraj Naik [b], Pandit Byomakesha Dash [c], S. Vimal [d], Seifidine Kadry

Abstract: The successful applications and diversified popularity of the Internet of Things (IoT) present various advantages and opportunities in broad characteristics of our lives. However, unfortunately, the IoT is allied with several types of defenseless attacks and illegitimate exploits. Security specialists specify voluminous threats imposed by the IoT devices in various aspects. Therefore, security and intrusion detection have constantly been growing areas of distress for any field of IoT research. This paper introduces a new hybrid ensemble hyper-tuned model (i.e., Catboost) that efficiently recognizes IoT sensor attacks and anomalies. The hyper-parameters are optimized with Bayesian optimization to develop security-based models effectively. The significant contributions of this work are the design of an intelligent model-based security framework based on the advanced ensemble learning Catboost model for detecting malicious IoT activities in the IoT network, the use of a Bayesian optimization approach to find an optimal set of Catboost hyper-parameters, and evaluate the model with a new real dataset (DOS2DOS) from a large-scale IoT network. The performance of the proposed model is compared with other state-of-the-art approaches, and the experimental results are evident towards a high detection rate of 99.9%.

Index Terms: Internet of things(IOT),intrusion detection, ensemble learning .

“Deep Learning-Based Trend Analysison Indian Stock Market in COVID-19Pandemic Scenario and ForecastingFuture Financial Drift”

Janmenjoy Nayak, Pandit Byomakesha Dash, Bighnaraj Naik, Subhashree Mohapatra & A. R. Routray

Abstract: This present study has used the long-short-term memory (LSTM) network-based deep learning architecture to analyze the influence of the current widespread COVID-19 on the Indian stock market. The major contribution of this work is as follows: (1) Designing LSTM-based deep neural network is used to study the effect of the COVID-19 outbreak and Lockdown on the Indian stock exchange (Nifty 50), and (2) designing a prediction model to capture the effect of various COVID-19 waves in India on Indian Stock exchange. The outcomes of the analysis show that the increase in daily new confirmed cases, recovered cases, and death cases have a significant adverse impact on the trend of the stock market. Moreover, the results of the work have also analyzed the impact of government policy such as ‘lockdown city’ with a reaction to increased Pandemic cases. This work is briefly summarized as follow: (1) LSTM-based deep neural network is used for this study to analyze the effect of the COVID-19 outbreak on the Indian stock exchange. (2) The Indian Stock exchange affected by the COVID-19 pandemic has been studied. Here, the analysis is based on the impact of COVID-19 including the effect of lockdown. (3) A prediction model has been proposed for the study of the behavior of the Indian stock index (Nifty 50) during the COVID-19 pandemic. (4) Comparison of the efficacy of the suggested approach with other existing baseline regression models.

Keywords : long-short-term memory (LSTM), COVID-19, regression models

“Socio-economic factor analysis for sustainable and smart precision agriculture: An ensemble learning approach.”

Pandit Byomakesha Dash [a], Bighnaraj Naik [b], Janmenjoy Nayak [c], S. Vimal [d]

Abstract: The socio-economic factor analyses by using the Logit and Probit model have the limitation of representing random taste variation for the unobserved factors and the issues of temporally correlated errors respectively. In socio-economic factor analysis, the observed data are essential in the random distribution for the adequate representation of the random components associated with various factors and lead to poor prediction in the case of the Logit and Probit model. In this work, Extra-trees classifier machine learning model based socio-economic factors selection has been used and found capable to find out the socio-economic factors that contain relevant information to the target variable agricultural productivity. In addition to this, the voting classifiers ensemble learning approach is used for the prediction of agricultural productivity of respondents (farmers) from their socio-economic profiles. This proposed work has been evaluated by using the test case of analyzing the socio-economic factors of the farmers affecting agricultural productivity in Sambalpur District, in Odisha State, India. In this study, the farmers’ socio-economic data are collected by using structured interviews through questionnaires that are in line with standard Participatory Rural Appraisal. It is found that, the proposed approach of socio-economic factor identification is found efficient for finding the relationships between socio-economic factors and agricultural productivity, and the proposed ensemble learning-based approach is efficient in terms of agricultural productivity prediction.

“Light gradient boosting machine-based phishing webpage detection model using phisher website features of mimic URLs.”

WeipingDing[a]JanmenjoyNayak[b]H.Swapnarekha[bc]AjithAbraham[d]BighnarajNaik[e]DaniloPelusi[f]

Abstract:The unprecedented surge of a novel coronavirus in the month of December 2019, named as COVID-19 by the World Health organization has caused a serious impact on the health and socioeconomic activities of the public all over the world. Since its origin, the number of infected and deceased cases has been growing exponentially in almost all the affected countries of the world. The rapid spread of the novel coronavirus across the world results in the scarcity of medical resources and overburdened hospitals. As a result, the researchers and technocrats are continuously working across the world for the inculcation of efficient strategies which may assist the government and healthcare system in controlling and managing the spread of the COVID-19 pandemic. Therefore, this study provides an extensive review of the ongoing strategies such as diagnosis, prediction, drug and vaccine development and preventive measures used in combating the COVID-19 along with technologies used and limitations. Moreover, this review also provides a comparative analysis of the distinct type of data, emerging technologies, approaches used in diagnosis and prediction of COVID-19, statistics of contact tracing apps, vaccine production platforms used in the COVID-19 pandemic. Finally, the study highlights some challenges and pitfalls observed in the systematic review which may assist the researchers to develop more efficient strategies used in controlling and managing the spread of COVID-19.

Keywords

COVID-19,Diagnosis,Prediction,Intelligent technologies,SARS-CoV-2,Social distancing

“Light gradient boosting machine-based phishing webpage detection model using phisher website features of mimic URLs.”

Etuari Oram [a], Pandit Byomakesha Dash [b], Bighnaraj Naik [a], Janmenjoy Nayak [c], S. Vimal [d], Sathees Kumar Nataraj [e]

Abstract: With the advent of the 20th century, the popularity of digital service usages is increasing every day. The internet has always been a popular communication method, and phishing webpages have been a challenging issue for more than two decades. Especially, E-commerce and other global companies face enormous challenges due to phishing of websites. Many developed countries have reported substantial economic loss due to unwanted phishing activities. With the exponential increase of digital communications, these phishing activities are going to be increased. There is a need for an effective intrinsic phishing detection technique. Phishing websites have some unique features by which they can be identified. In this research, a Light gradient boosting machine-based phishing email detection model using phisher websites' features of mimic URLs has been proposed. The primary objective is to develop a highly secured and accurate model for successful identification of security breach through websites phishing. With the performance comparison of other ensemble as well as state-of-the-art machine learning models, the proposed model resulted high performance accuracy and proved to a robust approach for phishing activity.

“Deep Learning-Based Trend Analysis on Indian Stock Market in COVID-19 Pandemic Scenario and Forecasting ”

J Nayak, PB Dash, B Naik, S Mohapatra, AR Routray

Abstract: This present study has used the long-short-term memory (LSTM) network-based deep learning architecture to analyze the influence of the current widespread COVID-19 on the Indian stock market. The major contribution of this work is as follows: (1) Designing LSTM-based deep neural network is used to study the effect of the COVID-19 outbreak and Lockdown on the Indian stock exchange (Nifty 50), and (2) designing a prediction model to capture the effect of various COVID-19 waves in India on Indian Stock exchange. The outcomes of the analysis show that the increase in daily new confirmed cases, recovered cases, and death cases have a significant adverse impact on the trend of the stock market. Moreover, the results of the work have also analyzed the impact of government policy such as ‘lockdown city’ with a reaction to increased Pandemic cases. This work is briefly summarized as follow: (1) LSTM-based deep neural network is used for this study to analyze the effect of the COVID-19 outbreak on the Indian stock exchange. (2) The Indian Stock exchange affected by the COVID-19 pandemic has been studied. Here, the analysis is based on the impact of COVID-19 including the effect of lockdown. (3) A prediction model has been proposed for the study of the behavior of the Indian stock index (Nifty 50) during the COVID-19 pandemic. (4) Comparison of the efficacy of the suggested approach with other existing baseline regression models.

“A Survey on AGPA Nature-Inspired Techniques in Vehicular Ad-Hoc Networks”

Smita Rani Sahu & Biswajit Tripathy

Abstract: This present study has used the long-short-term memory (LSTM) network-based deep learning architecture to analyze the influence of the current widespread COVID-19 on the Indian stock market. The major contribution of this work is as follows: (1) Designing LSTM-based deep neural network is used to study the effect of the COVID-19 outbreak and Lockdown on the Indian stock exchange (Nifty 50), and (2) designing a prediction model to capture the effect of various COVID-19 waves in India on Indian Stock exchange. The outcomes of the analysis show that the increase in daily new confirmed cases, recovered cases, and death cases have a significant adverse impact on the trend of the stock market. Moreover, the results of the work have also analyzed the impact of government policy such as ‘lockdown city’ with a reaction to increased Pandemic cases. This work is briefly summarized as follow: (1) LSTM-based deep neural network is used for this study to analyze the effect of the COVID-19 outbreak on the Indian stock exchange. (2) The Indian Stock exchange affected by the COVID-19 pandemic has been studied. Here, the analysis is based on the impact of COVID-19 including the effect of lockdown. (3) A prediction model has been proposed for the study of the behavior of the Indian stock index (Nifty 50) during the COVID-19 pandemic. (4) Comparison of the efficacy of the suggested approach with other existing baseline regression models.

Keywords

Vehicular Ad-hoc networks.Ant colony optimization,Genetic algorithm,Particle swarm ptimization,Artificial bee colony

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