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ADITYA
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(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 shape the students in balancing intellectual and practical skills to become leaders in all the fields of Technical knowledge 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 programs that deepen learning experiences of our students and prepare them for their 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 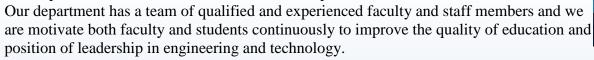remove poverty from the world. Infact, forty percent of the world's poor are in India. Confidence leads to capacity. It is faith in oneself that produces miracles. Education at AITAM helps build character, strengthen the mind, expand the intellect and establish a culture of looking at problems in a new 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 and we are motivate both faculty and students continuously to improve the quality of education and 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 published in reputed international and national journalsandactivelyparticipatedinvariousinternationalandnationalconferences to publish papers.

Dr. B. V. Ramana
HOD of IT Department

B.TECH PROJECT ABSTRACTS

S.NO	Regd No	Student Names	Title
1	18A51A1230	M. SRAVYA	**AN IMPROVED CHAOTIC GREY WOLF OPTIMIZATION (CGWO) ALGORITHM**
	18A51A1251	P. CHAITANYA	
	18A51A1246	V.GANATHI	
	18A51A1227	K.SUBBAREDDY	
	18A51A1209	B. SANKAR	

ABSTRACT

Grey Wolf Optimization (GWO) is a recently developed swarm based algorithm in the field of metaheuristic research, for solving realistic engineering design constraint and unconstrained difficulties. Swarm intelligence is relatively new interdisciplinary field of research. The Swarm-based algorithms have recently emerged as a family of nature- inspired, population-based algorithms that are capable of producing low cost, fast, and robust solutions to several complex problems. It is best suitable when it can perform smooth balance between the exploration and exploitation as well as faster convergence by successfully avoiding local optima entrapment. At recent time, Grey Wolf Optimization (GWO) is developed as a nature inspired swarm based algorithm. It can solve continuous, non-linear and complex in nature day to day life optimization problems. Like many other optimization algorithms, GWO suffers with the problem of local stagnation. This project introduces an improved version of the GWO, which improves the performance of the existing GWO algorithm by using Chaos Technique. The proposed algorithm is termed as Chaos-GWO (CGWO). The CGWO enhances the exploration and exploitation capability in the search space and successfully avoids local optima entrapment. The efficiency and robustness of the proposed CGWO is measured using performance metrics, convergence analysis and statistical significance. A demonstration is given as an application of the proposed algorithm for solving a real life problem. For this purpose, the multi-layer feed forward network is trained using the proposed CGWO. The experimental results demonstrate that the developed CGWO can be used for solving optimization problems effectively.

Keywords: Swarm Intelligence, Metaheuristic Algorithm, Grey Wolf Optimization (GWO),Optimization, Artificial Neural Networks, Multilayer Perceptron (MLP), Chaotic theory, Classification.

S.NO	Regd No	Student Names	Title
2	18A51A1221	Jami Mounika	Credit Card Fraud Detection Using Machine Learning Algorithms
	18A51A1211	Boyina Pranavi	
	18A51A1238	Sakalabhaktula. Krishna Vandana	
	18A51A1240	Sarakana .Sai leela Nagamani	

ABSTRACT

Frauds in credit card truncations are common today as most of us are using the credit card payment method frequently. This is due to the advancement of Technology and increase in online transaction resulting in frauds causing huge financial loss. Therefore, there is a needs for effective methods to reduce the loss. In addition, fraudsters find ways to steal credit card information of user by sending fake SMS and calls, also through masquerading attack, phishing attack and so on. This project aims in using the multiple algorithms of Machine Learning such as k- nearest Neighbor(knn), Random forest algorithm and support vector machine in predicting the occurrence of the fraud. Therefore, the accuracy of a fraud detection system depends on building a model that can adequately handle such an imbalanced dataset. Further, we conduct a differentiation of the accomplished supervised machine learning and deep learning techniques to differentiate between fraud and non-fraud transactions.

Keywords

Random forest algorithm, credit card, fraud, k-nearest neighbour, machine learning and support vector machine

S.NO	Regd No	Student Names	Title
3	18A51A1239	S.Jyothirmayi	**DEVELOPING FACE RECOGNITION SYSTEM USING HAAR ANDLBPH**
	18A51A1248	V. Dhanush	
	18A51A1206	B. Chandu	
	18A51A1236	P. Rakesh	
	18A51A1208	B. Lakshmi Swetha	

ABSTRACT

Face authentication system takes a primary role in the present modern society. It provides more security than the traditional systems. In traditional authentication systems it takes lot of time and process to identify a person. But later on, many technologies and algorithms are introduced and developed to identify a person in few minutes. This paper introduces face recognition system by LBPH algorithm which is used for identify a person. The features are extracted and then classified the data using Haar cascade classifier. After classification, the data is stored and train the dataset. Test data is compared with the training dataset and then display the result whether the person is authenticated or not. From this, we can measure Accuracy Rate, number of faces matched are calculated and evaluate the performance.

KEYWORDS: Face recognition, LPBH algorithm, Haar cascade classifier.

S.NO	Regd No	Student Names	Title
4	18A51A1244	U. Monika	**Twitter Sentiment Analysis Using Machine Learning algorithms- A Comparative Study**
	18A51A1205	B. Vyshanavi	
	18A51A1224	K. Harshita raj	
	18A51A1235	P. Manojsharan	

ABSTRACT

Social media have received more attention nowadays. Public and private opinion about a wide variety of subjects is expressed and spread continually via numerous social media. Twitter is one of the social media that is gaining popularity. Twitter offers organizations a fast and effective way to analyze customer's perspectives toward the critical to success in the market place. Developing a program for sentiment analysis is an approach is used to computationally measure customers' perceptions. This project proposes an approach that optimizes Long-Short term Memory that compares with the supervised machine learning algorithm i.e,. SVM (support vector machine), Random forest, Decision Tree, Logistic Regression and Naïve Bayes. Also avoid the over fitting problem and make the model more generalized and robust. Results represented in this project showed the comparisons among these six algorithm and predict the higher accuracy among these six algorithms. The implementation is done in the python code in (Jupiter notebook) and the result is based on LSTM, SVM, Random forest, Decision Tree, Logistic Regression and Naïve Bayes that aims the rate of the review tweets with testing accuracy of 96.07%, 96.60%, 95.91%, 95.03%, 96.16%, 94%.

Keywords-Twitter, sentiment, opinion mining, social media, LSTM, SVM, Random Forest, Decision Tree, Logistic Regression, Naïve Bayes.

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S.NO	Regd No	Student Names	Title
5	18A51A1241	T. JYOTSNA	**AN INNOVATIVE VEHICLE THEFT PREVENTION SYSTEM USING IOT AND ML**
	18A51A1215	D. PADMAVATHI	
	18A51A1234	P. DEEPTHI	
	18A51A1202	B. VARSHA	
	18A51A1237	R. VIKRAM	

ABSTRACT

Internet Of Things(IOT) is a recent technology that creates a global network of machines and devices that are capable of communicating and exchanging the data through internet. We are using camera which is an optical instrument to capture visual image. It can allows light to capture an image or a digital sensor. The data is transferred into JPEG files format. The main purpose is we can use Principal Component Analysis(PCA) machine learning algorithm is a technique for reducing the dimensionality of datasets. By using PCA algorithm we had detect the images with high accuracy. Raspberry pi is a solenoid lock used as the main controller for face recognition of locking systems. Image will be captured from the camera which is present in front of the driver seat i.e., steering or window seat side. The image will be processed by the system and compared with the dataset which were given by us. If the image is matched with more than 75% then the vehicle will be allowed to access. If the image is not matched then the vehicle will be automatically locked. It provides security from thefting.

KEYWORDS: Face Recognition, PCA, SVM.

S.NO	Regd No	Student Names	Title
6	18A51A1204	B. Yoshita	**Comparative analysis of classification algorithms in Machine Learning**
	18A51A1242	T. Swathi Sri	
	18A51A1226	K. Sravya Sri	
	18A51A1249	V. Bhargavi Priyanka	
	17A51A1219	S. Pooja Rani	

ABSTRACT

Diabetes is an illness caused because of high glucose level in a human body. Diabetes may cause some major issues in a person like blood pressure, eye damage, kidney problem and it is also affects other organs of human body. Liver is the largest internal organ in human body which is also known as acid factory management system in human body. An accurate and automatic approach of liver parenchyma segmentation is crucial to a computer-aided liver disease diagnosis and liver surgical planning system such as a system for liver transplantation. Cancer is a disease in which some of the body's cells grow uncontrollably and spread to other parts of the body. Many of these methods are widely used for the development of predictive models for predicating a cure for cancer. To predict these diseases in an effective way by using feature selection and classification approach based on multilayer perceptron neural network in unsupervised learning. Here, an improved model of the whale optimization algorithm that employed to the optimal selection of the features and the classification stages. These results are compared against the results of the regression algorithms.

Keywords: Unsupervised Learning, Neural Networks, MLP, Whale Optimization, Datasets.

S.NO	Regd No	Student Names	Title
7	18A51A1210	B. ASHWEEJA	**CREDIT CARD FRAUD DETECTION USING OUTLIER DETECTION ALGORITHMS**
	18A51A1201	A. PRIYANKA	
	18A51A1214	CH. BHARGAVI	
	18A51A1223	K. MANEESHA	
	18A51A1231	M. SHIVANI	

ABSTRACT

Credit Card Fraud Detection is focused on real world scenarios. Nowadays credit card frauds are drastically increasing in number as compared to earlier times. Frauds are using fake identity and various technologies to trap the users and get the money out of them. Therefore, it is very essential to find a solution to these types of frauds. In this proposed project we designed a model to detect the fraud activity in credit card transactions. This project intends to illustrate the modelling of dataset using machine learning with credit card fraud detection. The credit card fraud detection problem includes modelling past credit card transactions with the data of the ones that are turned out to be fraud. This model is then used to recognize whether a new transaction is fraudulent or not. In this process, we have focused on analysing and pre-processing datasets as well as the deployment of multiple anomaly detection algorithms such as Local Outlier Factor and Isolation Forest algorithm and Support Vector Machine on the PCA transformed Credit Card Transaction data. The Isolation Forest algorithm is based on the fact that anomalies are data points that are few and different. Local Outlier Factor considers as outlier samples that have a substantially lower density than their neighbors. Support Vector Machine techniques can be fit on the input examples from the majority class in the training dataset, then evaluated on a holdout test dataset.

Keywords: Isolation Forest algorithm, Local Outlier Factor, Support Vector Machine, Credit Card Fraud Detection

S.NO	Regd No	Student Names	Title
8	18A51A1245	Vaddi Sravani	**TEST SENTIMENT ANALYSIS USING AMAZON PRODUCT REVIEWS**
	18A51A1250	Pashupati Shah	
	18A51A1225	Karri Rakesh Naidu	
	18A51A1218	Gonapa Abhijith	

ABSTRACT

Nowadays companies are trying to focus more on the quality of products as well as way for customers to express their thoughts or opinions about their products. It helps other buyers and companies in improving a particular product on the basis of customer reviews. Sentiment analysis is defined as the process of mining of data, review or sentence to predict the emotion of the sentence. Amazon is the largest shopping platform for the customer' s in the world and Sentiment Analysis is a method of analyzing the customer's opinion or views. In this project meta heuristic optimization algorithm called GWO [greywolf optimization] technique is implemented. GWO optimizer is used to maximize the accuracy. Easy to implement due to simple structure. Less storage requirement than the other techniques. Convergence is faster dueto continuous reduction of search space. The GWO algorithm mimics the leadership hierarchy and hunting mechanism of grey wolf in nature. Our main aim is to understand and overfit the algorithm.

KEYWORDS: Metaheuristic ,Grey Wolf Optimization, Leadership hierarchy.

S.NO	Regd No	Student Names	Title
9	18A51A1219	G. Tejeswari	**Hand Tracking and Gesture Recognition System**
	18A51A1203	B. Bhagavan	
	18A51A1216	G. Giri Babu	
	18A51A1247	V. SaiKiran	

ABSTRACT

Vison-based hand tracking is an important problem in the field of human-computer interaction, since hand motions and gestures could potentially be used to interact with computers in more natural ways. A number of solutions have been proposed in the current literature, but the problem is still far from being solved since the hand exhibits significant amounts of articulation and self-occlusion that cause difficulties with existing algorithms. To further exasperate these problems, interactive application hand tracking perform in real-time. Today's world is observing huge improvements handling speeds and visualization displays. The main role is to explore gesture recognition designing for an efficient human-computer interaction. It presents a method for tracking hand gesture and recognizing hand gestures by extracting unique invariant features from gestures. The extracted feature is used to perform effective matching between different observations of a hand.

In this project by using open cv and numpy to accomplish the hand tracking and gesture recognition to interact with the system.

KEYWORDS: Hand tracking, Gesture recognition, handling visualization displays.

S.NO	Regd No	Student Names	Title
10	18A51A1220	G. Goutami	**Experimental Analysis of Machine Learning approaches for the detection of Attacks and Anomalies in IoT infrastructure**
	18A51A1233	P. Sowjanya	
	18A51A1228	M. Jnana Varshini	
	18A51A1212	B. Rakesh Kumar	

ABSTRACT:

Internet of Things (IoT) is a recent technology that creates a global network of machines and devices that are capable of communicating and exchanging data with each other through internet. With increased use of IoT technology in every domain such as transportation, health care, manufacturing, retail, agriculture, living and so on, the threats and attacks in these infrastructures are also increasingly rapidly. Therefore, attacks and anomaly detection in IoT infrastructure is becoming a hot topic. Now-a-days, machine learning approaches have been successfully utilized in every aspect of human life such as prediction of diseases, medical diagnosis, pattern recognition, fraud detection and so on. Hence, in this project several machine learning (ML) approaches such as Logistic Regression (LR), Support Vector Machine (SVM), Random Forest (RF), K Nearest Neighbor (KNN), Decision Tree (DT) have been used for prediction of IoT attacks and anomalies from IoT sensors and IoT Services. Further, evaluation metrics such as accuracy, area under the Receiver Operating Characteristic Curve, precision, recall have been used to evaluate the performance of machine learning approaches.

JOURNALS/CONFERENCES ABSTRACTS
(STUDENTS AND FACULTY)

"Multiplicative Holts Winter Model for Trend Analysis and Forecasting of COVID-19 Spread in India"

H. Swapna Rekha, HS Behera, J Nayak, B Naik, PS Kumar

Abstract: The surge of the novel COVID-19 caused a tremendous effect on the health and life of the people resulting in more than 4.4 million confirmed cases in 213 countries of the world as of May 14, 2020. In India, the number of cases is constantly increasing since the first case reported on January 30, 2020, resulting in a total of 81,997 cases including 2649 deaths as of May 14, 2020. To assist the government and healthcare sector in preventing the transmission of disease, it is necessary to predict the future confirmed cases. To predict the dynamics of COVID-19 cases, in this paper, we project the forecast of COVID-19 for five most affected states of India such as Maharashtra, Tamil Nadu, Delhi, Gujarat, and Andhra Pradesh using the real-time data. Using Holt–Winters method, a forecast of the number of confirmed cases in these states has been generated. Further, the performance of the method has been determined using RMSE, MSE, MAPE, MAE and compared with other standard algorithms. The analysis shows that the proposed Holt–Winters model generates RMSE value of 76.0, 338.4, 141.5, 425.9, 1991.5 for Andhra Pradesh, Maharashtra, Gujarat, Delhi and Tamil Nadu, which results in more accurate predictions over Holt's Linear, Auto-regression (AR), Moving Average (MA) and Autoregressive Integrated Moving Average (ARIMA) model. These estimations may further assist the government in employing strong policies and strategies for enhancing healthcare support all over India.

Index Terms: *COVID-19 · Holt–Winters · Holt's linear · Auto regression · Moving average · ARIMA*

"Fusion of Intelligent Learning for COVID-19: A State-of-the-Art Review and Analysis on Real Medical Data"

1.Nibedan Panda & 2.Santosh Kumar Majhi

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.

Index Terms: *COVID-19,DiagnosisPrediction,Intelligent technologies,SARS-CoV-2,Social distancing*

"An impact study of COVID-19 on six different industries: Automobile, energy and power, agriculture, education, travel and tourism and consumer electronics"

Janmenjoy Nayak, Manohar Mishra, Bighnaraj Naik, Hanumanthu Swapnarekha, Korhan Cengiz, Vimal Shanmuganathan

Abstract: The recent outbreak of a novel coronavirus, named COVID-19 by the World Health Organization (WHO) has pushed the global economy and humanity into a disaster. In their attempt to control this pandemic, the governments of all the countries have imposed a nationwide lockdown. Although the lockdown may have assisted in limiting the spread of the disease, it has brutally affected the country, unsettling complete value-chains of most important industries. The impact of the COVID-19 is devastating on the economy. Therefore, this study has reported about the impact of COVID-19 epidemic on various industrial sectors. In this regard, the authors have chosen six different industrial sectors such as automobile, energy and power, agriculture, education, travel and tourism and consumer electronics, and so on. This study will be helpful for the policymakers and government authorities to take necessary measures, strategies and economic policies to overcome the challenges encountered in different sectors due to the present pandemic.

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"Internet of Things based Automated Agricultural Irrigation Control System"

MS Rao, AV Rao, K Komali, Y Ramesh, KV Satyanarayana, S Patro, M Sivaram

Abstract: With the progression of automation, life is getting smooth and facile in all facets. In the moment's world, Automatic setup is chosen over manual labor setup. The mechanical design is a booming system of the ordinary thing from industrial machines to consumer goods that can carry through the tasks while engaged with other works. Indian country population is compassed beyond 1.2 billion. The population rate is adding day by day also the next 30-40 years, and there will be a severe scarcity of food, so the development of cultivation is needed. Moment, the cultivators are suffering from the de* cit of rain and water. The initial idea of this paper is to give IOT Based Automated Agricultural Irrigation Control System, thereby saving time, power & money for the agronomist. Conventional cropland irrigation requires manual intervention with automation. It can be diminished whenever there is an alteration in the temperature and moisture of the surroundings. These sensors sense the modifications in temperature and humidity and give an interrupt signal to the microcontroller.

"An Intelligent Metaheuristic Optimization with Deep Convolutional Recurrent Neural Network Enabled Sarcasm Detection and Classification Model"

K Kavitha, S Chittineni

Abstract: Sarcasm is a state of speech in which the speaker says something that is externally unfriendly with a purpose of abusing/deriding the listener and/or a third person. Since sarcasm detection is mainly based on the context of utterances or sentences, it is hard to design a model to proficiently detect sarcasm in the domain of natural language processing (NLP). Despite the fact that various methods for detecting sarcasm have been created utilizing statistical machine learning and rule-based approaches, they are unable of discerning figurative meanings of words. The models developed using deep learning approaches have shown superior performance for sarcasm detection over traditional approaches. With this motivation, this paper develops novel deep learning (DL) enabled sarcasm detection and classification (DLE-SDC) model. The DLE-SDC technique primarily involves pre-processing stage which encompasses single character removal, multispaces removal, URL removal, stop word removal, and tokenization. Next to data preprocessing, the preprocessed data is converted into the feature vector by Glove Embeddings technique. Followed by, convolutional neural network with recurrent neural network (CNN-RNN) technique is utilized to detect and classify sarcasm. In order to boost the detection outcomes of the CNN+ RNN technique, a hyper parameter tuning process utilizing teaching and learning based optimization (TLBO) algorithm is employed in such a way that the classification performance gets increased. The DLE-SDC model is validated using the benchmark dataset and the performance is examined interms of precision, recall, accuracy, and F1-score.

Index Terms: *Machine learning · Neural network · Backpropagation neural network · Classification · Optimization*

"Efficiency measure of Machine Learning Algorithms on Liver Disease"

Dr Bendi Venkata Ramana

Department of IT, Aditya Institute of Technology and Management, Tekkali, A.P, India

Abstract: This The death rate in India is high due to Liver disease as a result of bad lifestyle, storage food, uncontrolled blood sugar, obesity, smoking, and consumption of alcohol and inhale of harmful gases. Earlier detection can reduce death rates and it also helps the doctors to give the proper treatment to the patients. The liver disease datasets are analyzed by using Machine learning algorithms for the accurate disease diagnosis. The datasets were collected and annotated from Visakhapatnam, Vijayawada and Tirupathi based on the major geographical regions of Andhra Pradesh that are North Coastal Andhra Pradesh, Central Andhra Pradesh and Rayalaseema respectively. Three datasets are named Visakhapatnam dataset, Vijayawada dataset and Tirupathi dataset based on geographical region. Visakhapatnam dataset contains 12 attributes and has 499 samples. Vijayawada dataset contains 12 attributes and has 600 samples. The Tirupathi dataset contains 7 attributes and has 243 samples. The selected Classification Algorithms that are Naive Bayes, Decision Tree, Random Forest, Support Vector Machines and Multi-Layer Perceptron are castoff for scrutinizing their efficacy based on Accuracy, Precision, Sensitivity, Specificity, F-Measure, ROC-Area, FPR, MAE, RMSE, RRSE, Kappa Statistic and Building Time in classifying liver patient's dataset. Classification performance is very high in the Decision Tree classification algorithm for Visakhapatnam and Tirupathi datasets, whereas Classification performance is very high in the Random Forest classification algorithm for the Vijayawada dataset. Building time is more for MLP in the Vijayawada dataset. This study motivated for the development of the Liver Diagnosis App using the Decision tree algorithm..

Index Terms: Classification algorithms, liver datasets, performance

"Analysis of Geographical effect of various regions on Liver disease"

Dr Bendi Venkata Ramana

Department of IT, Aditya Institute of Technology and Management, Tekkali, A.P, India

Abstract:Statistical Analysis plays a significant role in population comparison to investigate the geographical effect on liver diseases. In this study the common attributes ALP, DB, SGOT, SGPT and TB were considered from the three datasets for the population comparison. Three data sets were assessed using analysis of variance and multivariate analysis of variance and significance level observed for the statistical analysis is $<= 0.05$ for the corresponding confidence level is 95%. The Significant values in theANOVAand MANOVA analysis indicates there is more significant difference among three liver datasets that means there is a geographical effect on liver diseases.

Keywords Statistical Analysis, liver datasets, population comparison

"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

"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 "

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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.

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