DEPARTMENT OF IT

VIDYAJHARI

Technical Magazine

AY: 2024-25	Vol. 17	Annual Issue

ADITYA

Institute of Technology and Management

(An Autonomous Institution)

Tekkali-532 201, Srikakulam Dist., AP
Tel: 0845-245666, 245266, 92466 57908
Email: info@adityatekkali.edu.in

\

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 maintain its 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 works hops 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.B. Ramesh Naidu
HOD of IT Department

B.TECH PROJECT ABSTRACTS

S.NO	Regd No	Student Names	Title
1	21A51A1212	Boddepalli Rajani	Ensembled AAC(Aquila Ant Colony) Optimization algorithm for improved supervised learning Algorithms
	21A51A1262	Voonna Akarsh	
	21A51A1239	Kottakota Susmitha	
	21A51A1251	Pudi Aman Chakravarthi	

ABSTRACT

Aquila Optimization (AO) and Ant Colony Optimization (ACO) are two bio-inspired algorithms widely used for solving complex optimization problems. Aquila Optimization is a novel meta-heuristic algorithm inspired by the hunting strategies of the Aquila bird, which effectively balances exploration and exploitation to find optimal solutions. Ant Colony Optimization, inspired by the foraging behavior of ants, utilizes pheromone trails to guide the search process and solve problems, particularly in combinatorial optimization. When applied in the domain of machine learning, these algorithms can optimize hyper parameters, feature selection, and model training, significantly improving prediction accuracy and model performance. This project focuses on implementing both AO and ACO algorithms in various machine learning tasks, comparing their efficiency and effectiveness in solving real-world problems. The aim is to develop a hybrid or enhanced model that leverages the strengths of both optimization techniques for more robust machine learning outcomes.

Keywords: Metaheuristic Optimization, Aquila Optimization, Ant Colony Optimization, Supervised Learning, Feature Selection, Hyperparameter Tuning.

S.no	Regd.no	Students Names	Title
2	21A51A1246	Sasanapuri Tarun	Revolutionizing Construction Estimates
	21A51A1246	Jutha Vinay	
	21A51A1246	Yarabati Jaswanth	
	21A51A1246	Malla Sravya	

ABSTRACT

"The construction industry faces ongoing challenges in producing accurate and timely cost and quantity estimates. Conventional methods often rely on manual processes, which can lead to mistakes, delays, and cost over-runs, negatively affecting project budgets and overall profitability. In response, we propose a web-based platform that simplifies and automates the estimation process for construction professionals and homeowners. Utilizing advanced algorithms and machine learning, the platform provides highly accurate quantity-ty and cost estimates. It integrates an extensive database of materials, labor rates, and historical project data, ensuring the reliability of results. Users benefit from clear visual representations and comprehensive reports that make it easyto understand cost distribution, spot opportunities for savings, and improveresource planning. This platform empowers users to make informed decisions, optimize project management, and keep costs under control, ultimately enhancing project outcomes and operational efficiency."

Keywords: Cost Estimation, Quantity Estimation, Project Management, Software, Algorithm, Visualization, Database, Cost Breakdown, Real Time Estimation

S.no	Regd.no	Students Names	Title
3	21A51A1255	Sarika Sai Sumana Sree	Classification Of Gene Expression From RNA-Seq Data For Pancreatic Cancer Prognosis Using Ensemble Learning
	21A51A1211	Bhyri Vinay Manohar	
	21A51A1202	Atla Jayaram	
	21A51A1240	Kuppili Sameer Patnaik	

ABSTRACT

Pancreatic cancer (PC) is a highly aggressive and life-threatening disease with a survival rate below 5%, emphasizing the urgent need for early detection and effective prognosis. Current diagnostic methods for identifying pancreatic cancer face limitations in accuracy and reliability, making it crucial to develop advanced computational approaches for better disease management. In response to this challenge, this project introduces an innovative machine learning-based solution to classify differentially expressed genes (DEGs) from RNA sequencing (RNA-Seq) data specific to pancreatic cancer.

Our approach leverages an ensemble learning model, integrating K-nearest neighbour (KNN), random forest (RF), Extreme gradient boosting (XGB), and logistic regression (LR) into a stacking cross-validation (CV) classifier. Utilizing gene expression data from The Cancer Genome Atlas-Pancreatic Adenocarcinoma (TCGA-PAAD) project, the model is trained to accurately distinguish cancerous and non-cancerous samples based on DEG patterns. This advanced learning strategy ensures robustness and high classification accuracy, addressing the shortcomings of traditional methods.

Keywords:

Bioinformatics, pancreatic cancer, Ensemble learning, Machine Learning, RNA-seq, classification, analysis.

S.no	Regd.no	Students Names	Title
4	21A51A1224	Gembali Sai Priya	An Intelligent Framework For The Detection And Conversion Of Sign Language Using Deep Learning Approach
	22A55A1201	Bethanapalli Mahanth Kumar	
	21A51A1222	Garugu Komali	
	21A51A1238	Kotni Vineela	

ABSTRACT

According to the statistics of World Health Organization (WHO), approximately 70 million people of the world population are having hearing problem. Sign language is the primary communication language used by deaf and dumb people to express their ideas and emotions to the people around them. However, communication between deaf dumb and non-deaf-dumb is a problem that isolates deaf-dumb from society and prevents them from interacting with others. To overcome the above problem, in this project, a model based on deep learning approach has been developed that detects and recognizes the words from a person's gestures. Therefore, it can be concluded that the proposed system may assist people who are unaware of sign language to communicate with people whose speech or hearing is impaired

Keywords: Sign Language, Deep learning, Gesture, Image recognition

S.no	Regd.no	Students Names	Title
5	21A51A1216	Chalumuri Sri Devi	An Intelligent Intrusion Detection System(Ids) For Internet Of Drones(IOD) Using Improved Deep Learning Framework
	21A51A1231	Jami Sai Kamal	
	22A55A1203	Buddepu Shanmukh	
	21A51A1236	Korlapu Guna	

ABSTRACT

The enlargement of the Internet of Things into numerous domain names has paved he manner for the advent of the Internet of Drones (IOD) as a crucial subset, gaining massive attention due to its essential programs. However, IoD networks are incredibly liable to security threats due to their decentralized and dynamic nature. To address the ones demanding conditions, Intrusion Detection systems (IDS) are used to have a study and evaluate information site traffic among linked nodes, efficaciously figuring out wonderful types of cyberattacks in the IoD environment. The Flying ad hoc network (FANET) further complicates intrusion detection due to its complex architecture and evolving protection threats to mitigate those risks, FANET makes use of real-time statistics analytics powered by way of an improved Deep studying Framework, which includes a Recurrent Neural network (RNN), The framework typically is predicated on RNNs for intrusion detection at the same time as integrating massive information analytics to hit upon anomalies. furthermore, it employs Long Short-Term Memory (LSTM), a variation of RNN, to decorate accuracy and improve safety hazard detection

Keywords:

Long Short-Term Memory (LSTM), Recurrent Neural Networks (RNN), Internet of Drones (IOD), Intrusion Detection System (IDS), Flying Ad hoc Network (FANET), Deep Learning

S.no	Regd.no	Students Names	Title
6	21A51A1223	Geddam Lavanya	Gene Expression Analysis Using Machine Learning For Biomarker Identification
	21A51A1260	V Rama Chandra Mouli	
	21A51A1234	Kaviti Annapurna	
	21A51A1230	Jami Divya	

ABSTRACT

Lung cancer remains one of the most critical global health challenges due to late-stage detection and limited early diagnostic tools. This project addresses that gap by applying advanced machine learning algorithms to analyze high-dimensional gene expression data, aiming to identify reliable biomarkers for early and accurate cancer classification. The study uses a publicly available dataset consisting of 203 samples and 12,601 gene features, labeled across five lung cancer subtypes (B1–B5). The dataset is sourced from the Shenzhen University Gene Expression Repository. To handle dimensionality and class imbalance, preprocessing techniques such as scaling and Principal Component Analysis (PCA) were employed. Multiple machine learning models were implemented, including Logistic Regression (LR), K-Nearest Neighbors (KNN), Random Forest (RF), Multi-layer Perceptron (MLP), and a stacked ensemble model. However, the Support Vector Machine (SVM) classifier emerged as the most effective, achieving a classification accuracy of 98.04%, along with high precision, recall, and F1-score across all subtypes.

Performance evaluation involved grid search hyperparameter tuning, cross-validation, and confusion matrix analysis, confirming the model's robustness in classifying all five lung cancer classes with minimal error. These findings demonstrate the potential of SVM and similar techniques in enhancing early diagnosis and contribute to the identification of gene-level biomarkers that support personalized cancer treatment strategies.

Keywords:

Gene Expression, Machine Learning, Biomarkers, Cancer, Bioinformatics.

S.no	Regd.no	Students Names	Title
7	21A51A1210	Bhyri Rohit Kumar	OPTIMIZING SMART GRID PERFORMANCE WITH DEEP LEARNING MODELS
	21A51A1204	Sanjeevu Sai Kumar	
	21A51A1252	Pujari Sravya	
	21A51A1229	Ippili Bhanuprakash	

ABSTRACT

Smart grid is an advanced concept of power systems which harmonizes electricity and communication in system networks. It provides information for the producers, operators, and the consumers in real time. There is an extreme demand to efficiently conduct the power supplied to the consumption domains such as households, organizations, industries, and smart cities. I this respect, a smart grid with a stable system is being required to supply the dynamic power requirements. Predicting smart grid stability is still challenging due to the many factors which affect the stability of grid, one of these factors is customer and producer participation because identifying the participation can lead to the stability of smart grid. In this work, we propose deep learning models to predict the stability of smart grids. The results of the proposed GRU model are compared with other traditional machine learning and deep learning classifiers, including Recurrent Neural Networks (RNN), Long Short-Term Memory (LSTM), and Artificial Neural Networks (ANN). Our proposed GRU model achieves an accuracy of 97.45%, demonstrating its superiority over other models in predicting smart grid stability

.**Keywords:** Web Application, career guidance, personalized recommendations

S.no	Regd.no	Students Names	Title
8	21A51A1246	P. HARIKA	A Novel CNN approach for Plagiarism Check
	21A51A1228	G. SAI CHAITHANYA	
	21A51A1257	S. HARSHINI	
	21A51A122	D. RAHUL	

ABSTRACT

Plagiarism involves the use of another individual's work or ideas without proper attribution to the original author. With the widespread availability of digital content,plagiarism has emerged as a significant challenge in the online domain. Educationalinstitutions, publishers, and content creators are increasingly concerned about thegrowing sophistication of plagiarism techniques, including paraphrasing, synonym replacement, and sentence restructuring. Traditional plagiarism detectiontechniques primarily depend on string matching and heuristic rules, which may fall short in identifying such advanced forms of content manipulation.To address these limitations, a novel deep learning-based approach is presented inthisstudyto enhance detection capabilities. Advanced neural network architectures,including Convolutional Neural Networks (CNNs) and Recurrent Neural Networks,(RNNs) such as Long Short-Term Memory (LSTM), are employed to capture both semantic similarities and contextual relationships between documents. Natural Language Processing (NLP) techniques are implemented to understand the deeper meaning of text beyond surface-level comparisons. Training on a diverse dataset of academic texts demonstrates superior performance in terms of accuracy and robustness compared to conventional systems. This method effectively detects not only exact copying but also paraphrased and conceptually similar content, which often bypasses traditional detection systems. Furthermore, this approach is scalable, making it suitable for integration into institutional-level plagiarism detection systems. The research also introduces an innovative solution for detecting plagiarism in hand-written documents using deep learning-based image-to-text processing combined with semantic analysis. This advancement contributes significantly to the development of more reliable, efficient, and comprehensive tools for plagiarism detection, thereby promoting academic integrity and trust in digital content.

Keywords: Convolution Neural Networks, LSTM (Long Short Term Memory), NLP(Natural Language Processing).

S.no	Regd.no	Students Names	Title
9	21A51A1233	Kantubothu Gowtham	An Innovative Approach to Integrate Library and Certification System
	21A51A1261	Valle Indu	
	21A51A1218	Dasari Bhavana	
	21A51A1219	Dikkala Tilak	

ABSTRACT

A comprehensive platform has been developed to optimize library management and academic certification processes, addressing inefficiencies in traditional systems. Library operations, such as searching for books, borrowing, and tracking transactions, are often time-consuming and prone to human errors. By integrating digital resources and automation, the platform enhances accessibility and efficiency, allowing users to locate books based on title, author, or subject and track borrowing history with precise lending and return dates. Additionally, the system supports seamless integration with online resources, enabling users to access supplementary materials and manage book transactions efficiently. This feature ensures that library users can easily retrieve necessary information and keep track of borrowed items, improving the overall experience. Beyond library management, the platform automates the academic certification process, streamlining event registration, exam completion, and certification issuance. Users can register for various academic events, participate in online assessments such as multiple-choice questions (MCQs), and monitor their certification progress in real time. The automation of these processes reduces administrative workload and minimizes errors in event registrations, exam result tracking, and certification generation. Storing all relevant data electronically ensures security, easy retrieval, and efficient record management. By digitizing these critical academic and library functions, the system provides an effective and scalable solution for modern educational institutions. The integration of advanced features enhances efficiency, accuracy, and accessibility, making it an essential tool for streamlined academic and library operations.

Keywords: Integrated Library System, Certification System, Library management, Book search, Borrowing history, Online resources, Event registration, Exam management, Multiple-choice questions(MCQs), Certification tracking, Automated system, Data storage, Error reduction, Educational institutions.

S.no	Regd.no	Students Names	Title
10	22A55A1202	Balla Sai Kiran	PREDICTION OF ENGINEERING COLLEGE ADMISSIONS USING MACHINE LEARNING TECHNIQUES
	21A51A1249	Potnuru Hemanth	
	21A51A1217	Danda Akshay	
	21A51A1209	Battula Bala Surya Sai	

ABSTRACT

Students encounter numerous challenges when trying to gain admission to their preferred college. The current engineering admission process is somewhat complicated, which often results in students ending up in colleges that don't match their true potential. College predictors aim to simplify the complex engineering college admission process by developing a machine learning-based web application that predicts the most suitable colleges for students. Utilizing the algorithms like K- Nearest Neighbors KNN, Random Forest, and Decision Tree, the system analyses historical data, including student ranks, gender, category, and admission trends, to generate personalized college recommendations. The backend, powered by Flask, seamlessly integrates with a userfriendly frontend, allowing studentsto input their details and receive real-time predictions. By providing data- driven insights, the application helps students make informed decisions, reducing the risk of poor choices that could impact their career growth. The platform simplifies the admission process, improving college selection accuracy. Ultimately, it helps students secure admission to the best- suited institutions.

Keywords: K-Nearest Neighbors classifier, Decision Tree Classifier, Random Forest Algorithm and Flask API

S.no	Regd.no	Students Names	Title
11	21A51A1245	Payala Charan	Next-Gen E-Prescriptions: Creating A User-Friendly And Efficient Online Prescriptions Platform
	21A51A1248	Pitani Deepthi Susmitha	
	21A51A1247	P.Lakshmi Narasimha Naidu	
	21A51A1205	Bammidi Tarun	

ABSTRACT

Healthcare sector is totally different from other industry. It is on high priority sector and people expect highest level of care and services regardless of cost. In our India, most of the people were following the Ayurvedic, Homeopathy and Allopathy for their health recovery. But we are observing the huge gap between the medication and treatment procedures between all there 3 types of formats. If any patient wants to switch between the any two different types of medication process, then there is no proper solution to find out what sort of medicine or treatment needs to be continued further and new treatment to be suggested. To overcome this solution, we were proposing to provide a Static Mobile Application to consider as a reference point to the doctors in which it will have the details related to the types of diseases, symptoms, medication, and the treatment according to their age and health conditions. Also, it will have the information related to the same diseases in other medication format. Since, in health sector we have different types of diseases and its treatment procedures. As a beta version of application, we are trying to develop this application with consideration of Fever module right now itself.

Keywords: Different Layouts, XML, Key Listener, Intend, UI Design, Flutter, MongoDB, Node.js, Express.js

S.no	Regd.no	Students Names	Title
12	21A51A1250	Potnuru Meher Paramesh	PROJECT TRACKER MANAGEMENT TOOL
	21A51A1258	Tangudu Niharika	
	21A51A1213	Bommana Eswar	
	21A51A1201	Andhavarapu Sai Krishna	

ABSTRACT

The Project Tracker Management Tool (PTMT) addresses the limitations of traditional manual project tracking methods in academic institutions by offering a comprehensive, real-time digital solution for managing final-year student projects. Developed using HTML, CSS, JavaScript, PHP, and MySQL, this web-based tool streamlines the entire project lifecycle— from document submission and progress tracking to real-time feedback and performance evaluation. In today's educational landscape, proper management of academic projects is essential not only for improving educational outcomes but also for preparing students for professional challenges. PTMT draws inspiration from industry-standard project management tools like JIRA and Rally, aiming to bring a similar level of structure, precision, and collaboration into academic environments. By replacing outdated paper-based systems, it enables a smoother, more efficient, and transparent process for tracking student progress.

Keywords: Project Management, Milestone Tracking, Academic Projects, Portals, Faculty Monitoring, Deadline Management.

S.no	Regd.no	Students Names	Title
13	21A51A1259	Tangudu Sonalika	OPTIMIZED PNUEMONIA DETECTION VIA CT SCANS A COMPARATIVE ANALYSIS OF TRANSFER LEARNING MODELS
	21A51A1263	Vuppala Krishna Sri	
	21A51A1237	Kothakota Siddarth Kumandan	
	22A55A1206	Erothu Uday Kumar	

ABSTRACT

Pneumonia continues to be one of the main causes of death among children below five and the elderly population above the age of 65 years. According to the minister of state in the Ministry of Health and Family Welfare, Dr. Bharati Pravin Pawar, at least 687 children aged 1-12 months and 301 children aged 1-5 years lost their lives due to pneumonia as part of the total number of deaths the disease caused in 2022-23. The high death rate is largely prevalent in South Asia and Sub-Saharan Africa. Pneumonia also remains among the top causes of death even in the most prosperous countries, such as the United States, falling within the ten leading causes. Early diagnosis does a lot to help reduce fatalities. This paper addresses this problem by showing research work that is based on the application of CNN models for detecting pneumonia from chest X-ray images. Several CNN architectures, including VGG16, ResNet50, and DenseNet121, were trained and fine-tuned with varying parameters, hyperparameters, and counts of the convolutional layers. Transfer learning has drastically increased model accuracy while reducing the time taken to train. Results About the efficient use of deep learning in medical image processing, the study underscores the effectiveness of transfer learning in CNNs with minimal label data, particularly in conditions. The algorithms were able to accurately classify the X-ray images into the classes of pneumonia and non-pneumonia. This approach further elaborates on the fact that CNNs, when utilized together with transfer learning, may be suitably applied for the early and timely detection of pneumonia, eventually minimizing infant mortality rates all over the world.

Keywords: Convolution Neural Networks, transfer learning, ensemble methods, VGG16, ResNet50, DenseNet121.

S.no	Regd.no	Students Names	Title
13	20A51A1228	Kongarapu Reshma	PLANT SPECIES CLASSIFICATION USING DEEP LEARNING
	20A51A1237	Paila Pratyusha	
	20A51A1233	Mandapati Harish	
	20A51A1252	Suru Vamsi	

ABSTRACT

"Protection of biodiversity is quite essential and for this purpose we should know more about the species Identification of plant species by using conventional handcrafted features is complex. It is difficult for non-experts to remember the specific botanical terms. The idea of automatic identification of plant species is approaching reality. Machine learning and deep learning play an important role in this matter. Hence, we are implementing deep learning based Convolutional Neural Networks (CNN) along with the transfer learning model of CNN which is a Mobile Net that which extract the features from leaf images and it is used for the classification of plant species. Once after the classification we can compare the both algorithms that which we have used for the training of dataset. The deep learning methods outperform all handcrafted methods. "

Keywords: Plant species classification, CNN, deep learning, transfer learning, Mobile Net

S.no	Regd.no	Students Names	Title
14	20A51A1255	Tangudu Sai Swarupa	PLANT SPECIES CLASSIFICATION USING DEEP LEARNING
	20A51A1256	Tankala Surya Teja	
	20A51A1223	Jami Sriya	
	20A51A1206	Badda Vamsi	

ABSTRACT

"Protection of biodiversity is quite essential and for this purpose we should know more about the species Identification of plant species by using conventional handcrafted features is complex. It is difficult for non-experts to remember the specific botanical terms. The idea of automatic identification of plant species is approaching reality. Machine learning and deep learning play an important role in this matter. Hence, we are implementing deep learning based Convolutional Neural Networks (CNN) along with the transfer learning model of CNN which is a Mobile Net that which extract the features from leaf images and it is used for the classification of plant species. Once after the classification we can compare the both algorithms that which we have used for the training of dataset. The deep learning methods outperform all handcrafted methods. "

Keywords: Plant species classification, CNN, deep learning, transfer learning, Mobile Net

S.no	Regd.no	Students Names	Title
15	20A51A1255	Tangudu Sai Swarupa	DIABETES PREDICTION USING ENSEMBLE METHODS
	20A51A1256	Tankala Surya Teja	
	20A51A1223	Jami Sriya	
	20A51A1206	Badda Vamsi	

ABSTRACT

"Diabetic is an ongoing disease which affects millions of humans everywhere. It may be prevented and detected early to improve a patient's quality of life and lower their risk of complications. The enduring ramifications of diabetes have a global impact, affecting millions of individuals. By examining a variety of health and lifestyle variables, machine learning approaches can assist in the prediction of diabetes. This research employs a variety of machine learning techniques to classify patients based on their data,

including Stacking-CV Classifier consist of Random Forest (RF), Gradient Boosting (GB), and Logistic Regression (LR). To increase the prediction's efficiency and accuracy, we additionally employ feature selection and dimension reduction techniques. A variety of performance metrics are employed to assess and contrast the effectiveness of the algorithms with the Kaggle Diabetes Health Indicator Dataset, encompassing recall, accuracy, precision, and FI-score. It is computed what the model's accuracy is while employing each of the algorithms. The model for predicting diabetes is then selected

based on which one has the best accuracy. Each model is uniquely accurate in relation to other models. The project effort produces a model that is correct or more accurate, proving that the model can predict diabetes with any degree of precision. Our results show that Stacking-CV Classifier performed more accurately than other machine learning techniques."

Keywords: Diabetes, Machine Learning, Prediction, Random Forest, Gradient Boosting, Logistic Regression, Stacking-CV Classifier.

S.no	Regd.no	Students Names	Title
16	20A51A12A1	Menda Rajkumar	BRAIN STROKE PROGNOSIS WITH ADVANCED INTELLIGENT METHODS
	20A51A1285	Jami Drakshayani	
	20A51A12A4	Palikila Sruthi	
	20A51A1291	Kondadasula Srikanth	

ABSTRACT

One of the most dangerous illnesses in the world, stroke causes a large number of fatalities either directly or indirectly. It impacts the arteries that go to and from the brain. A blood vessel that supplies the brain with oxygen and nutrients might burst or become blocked by a clot, which can result in a stroke. Stroke ranks as the second most common cause of death globally, according to the WHO[1]. Subarachnoid haemorrhage affects 5% of people worldwide, intracerebral haemorrhage affects 12%, and ischemic stroke affects 83% of people. Since there is an 80% chance that these strokes can be avoided, it is crucial to provide enough education on stroke symptoms. The ability of current studies to use data to predict risk factors for different types of strokes is limited. If a stroke occurs in a region of the brain that regulates the body's natural life-sustaining functions, such as heart rate and respiration, it may be fatal. The current body of research on the use of information mining and machine learning techniques, such as logistic regression, decision tree modeling, naive Bayes, SVM, and others, to predict risk factors for various kinds of strokes is limited. The suggested solution incorporates cutting-edge machine learning methods for thorough patient data analysis. It makes use of a wide range of characteristics, such as age, habit of smoking, body mass index, average level of glucose, and stress. Ensemble-based learning Is Among the Advanced Intelligent Techniques To predict the severity of future stroke recurrence on a ranking of zero to three, algorithms like Ada Boost, Gradient Boosting, XGBoost, Catboost, LightGBM, and Hyper Parameter tuning approaches such as random search and grid search are used. It assesses the probability that someone who has never experienced a stroke will do so in the future. This makes it easier to figure out those who may be at risk so they may decrease their risk of stroke by taking precautions. This information can help healthcare professionals better understand the patient's health condition and take appropriate measures to manage the risk of potential subsequent strokes. After analyzing different machine learning algorithms with XGBoost with hyper parameter tuning, we found 96% accuracy in predicting the risk factor of stroke, which is better than other models.

Keywords: Machine-learning, Ensemble-Learning, Stroke, Arteries, prognosis, Hyper Parameters tuning.

S.no	Regd.no	Students Names	Title
17	20A51A1208	Balli Karishma	Deep Learning Approach For Assessment of Fruit Quality
	20A51A1239	Patta Sowmya	
	20A51A1245	Potnuru Satish	
	20A51A1244	Polaki Aashritha	

ABSTRACT

In the field of agriculture and food processing, quality evaluation is a significant parameter to increase benefits and accommodations for individual life. The presence of diseases and pesticides is the major factor that emerges the need for quality evaluation. Although it can be done manually, some inconsistencies and high costs led to the invention of automatic systems. The automation makes the same process more consistent and time-efficient. Therefore, in this project we propose a deep learning-based framework for the assessment of fruit quality. Further, to assess the performance of the model the model has been validated using various batch sizes. Finally, the performance of the proposed approach has been evaluated using performance metrics such as accuracy, precision, recall and F1-score. The suggested deep learning approach offers reliable and consistent grading results which results in minimizing manual labor and reducing post-harvest losses.

Keywords: MobileNetV2, DenseNet121, VGG16, InceptionV3, Fruit Quality Assessment.

S.no	Regd.no	Students Names	Title
17	20A51A12B4	Sasapu Nandu	ENSEMBLE BASED OPTIMIZATION APPROACH FOR THE DETECTION OF PROSTATE CANCER
	20A51A12A3	Navya Yenninti	
	20A51A12A7	Pooja Panigrahi	
	20A51A1298	Lotla Harika	

ABSTRACT

"Prostate cancer ranks as the second most commonly diagnosed cancer and stands as the fifth leading cause of death globally among men. Prostate cancer may not cause noticeable symptoms at the early stage and tends to progress slowly, necessitating only active monitoring in certain cases. According to the GLOBOCAN data [1], there were a total of 12,76,106 newly diagnosed cases of prostate cancer. The incident of prostate cancer was found to be notably higher in developed countries compared to other regions. Prostate cancer incidence and mortality rates exhibit a robust association with age, with the highest occurrence observed among elderly men, specifically those aged 65 years and older. For men with a family history of prostate cancer, it is strongly recommended to undergo screening starting at the age of 45. Therefore, there is a need to develop automatic diagnosis system to mitigate the risk of prostate cancer. In this project, an ensemble based machine learning framework has been proposed for the

automatic diagnosis of prostate cancer at early stage of disease. Further, the performance of the system has been enhanced by applying particle swarm optimization algorithm. Finally, the performance of the system has been measured using various evaluation metrics such as accuracy, precision, recall, F1 score and AUC-ROC curves."

Keywords: Machine learning, Ensemble Learning, Optimization algorithm, Prostate cancer

S.no	Regd.no	Students Names	Title
18	20A51A1218	Dunna Kiran	STEERING THE INTRICACY OF SEMI-SUPERVISED SENTIMENT ANALYSIS WITH MACHINE LEARNING MODELS
	20A51A1258	Thangudu SyamGopal	
	20A51A1227	Konchada Neelima	
	20A51A1204	Arasavalli Reventh	

ABSTRACT

"The widespread use of social media platforms such as Facebook, Twitter, and Instagram is driven by advancements in technology, offering users both timely information and the risk of encountering misinformation. Sarcasm, a powerful form of communication, can introduce uncertainty, making it difficult to interpret the true intent behind posts. This ambiguity can be exploited to deceive users through clever language manipulation. It's crucial to detect and address sarcasm effectively to ensure the accurate understanding of messages. Machine learning techniques, particularly in Natural Language Processing (NLP), have gained attention for their ability to detect sarcasm. This is especially important in Sentiment Analysis or Opinion Mining, where accurately assessing sentiments depends on correctly handling sarcastic content. Unlike traditional sentiment analysis, which focuses solely on positive or negative sentiments, our approach prioritizes identifying sarcasm before evaluating sentiment. By doing so, we aim to improve the precision of sentiment analysis, particularly in the context of social media, where sarcasm is prevalent. This study investigates how the convergence of Machine Learning, NLP, and Sentiment Analysis can decode sarcasm and enhance the accuracy of sentiment analysis, ultimately providing a more nuanced understanding of sentiments expressed in online content."

Keywords: Machine Learning, Natural Language Processing (NLP), Decode Sarcasm, Sentimental Analysis, Social Media.

S.no	Regd.no	Students Names	Title
19	20A51A1220	Gudla Sai Vennela	MACHINE LEARNING FOR PRECISE MUSICAL GENRE CLASSIFICATION
	20A51A1249	Sattaru Naveen	
	20A51A1260	Vangapandu Jayanth Kumar	

ABSTRACT

"In today's world people are fond of music, there is multiple set of genres present in our musical app playlist there is a recommendation system used by companies to make a set of songs into one album it needs some algorithm to classify the records. The purpose of the music genre classification is to categorize songs or audio files according to a range of characteristics into the appropriate genre. This study explores the utilization of machine learning techniques for music genre classification using the wellknown GTZAN dataset. The objective of this project is to create a reliable model that can identify the genre of any music with accuracy. Songs are categorized according to their respective genres using features that are extracted from audio files, such as chroma, spectral bandwidth, spectral contrast, mel-frequency cepstral coefficients (MFCCs), and zero crossing rate. The prominent Machine learning models such as Support Vector Machines (SVM), k-nearest neighbour (k-NN) and Random Forest are

implemented to classify the songs and their results are compared to determine which machine learning model is best for genre categorization. These models are enhanced with GridSearchCV Optimization technique."

Keywords: Machine Learning, Support Vector Machine, k-nearest neighbor (k-NN), Random Forest, Music Genre Classification.

S.no	Regd.no	Students Names	Title
20	20A51A1225	Kandula Aneesha	Smart voting system using deep learning and computer vision
	20A51A1243	Podugu Sujith	
	20A51A1248	Sanapala Sai Vamsi	
	20A51A1250	Sunkari Deepika	

ABSTRACT

"The world's largest democratic nation is India, where we live. Therefore, it is imperative to guarantee that a fair election is used to elect the governing body. India only has an offline voting method, which is inefficient and subpar because it takes a lot of labor and longer to process and publish the results. Therefore, a change that addresses these drawbacks is necessary for the system to become effective. The new procedure makes voting easier by not requiring a voter's physical appearance. This study focuses on a two-step authentication system that uses face recognition and an OTP mechanism to enable voters to cast their ballots remotely from any location using a computer or mobile device. If the user finds it more comfortable, this product also lets them vote offline. Prior to the election, voters' faces are recorded using a face scanning technique that is helpful while voting. RFID tags, not voter ID, are used to improvise the offline voting method. Additionally, this approach allows citizens to view the results at any moment, preventing circumstances that could lead to vote rigging."

Keywords: Computer Vision, Deep Learning, Haar Cascading, Open CV, CNN, LBPH

S.no	Regd.no	Students Names	Title
21	20A51A1278	Ganti Nagalakshmi Bhavani	Modeling Electricity Demand
	20A51A12B2	Sanapath Balamani	
	20A51A12B9	vajja raj kumar	
	20A51A1299	majji rohit kumar	

ABSTRACT

"Electricity consumption plays a pivotal role in the economic progress of any nation. Accurately forecasting electricity consumption is indispensable to ensure a dependable and efficient power grid operation. Electricity prediction entails estimating future electricity demand or generation, making it a crucial instrument for electric utilities, industries, and governments. Forecasts indicate that different energy consumption sectors will experience rapid growth in the upcoming years. Such expansion will exert immense pressure on the country's electricity grid, underscoring the need for precise models in predicting electricity consumption. Forecasting energy consumption is essential to guaranteeing both environmental security and future economic prosperity. It is essential to the management of energy supply and demand by both public and commercial organizations. It helps determine how best to allocate the resources that are currently available for energy use and helps determine what infrastructure should be built to meet future needs. This chapter includes views on the significance, difficulties, and general approach of projecting energy consumption. Furthermore, a discussion is held on several energy demand forecasting methods, such as machine learning (random forest, linear regression, and polynomial regression), polynomial regression, SVR, KNN) and deep learning model (LSTM) with 98% accuracy. Lastly, the broad matrices of forecasting accuracy are described in order to discuss the accuracy of energy demand forecasting."

Keywords: machine learning models, predictions, regression, power consumption.

S.no	Regd.no	Students Names	Title
22	21A55A1201	Bhogi saikrishna	A CNN Approach for Detection of Grape Leaf Diseases
	20A51A1231	Kothakota priyanka	
	21A55A1205	Koppala pavan sai	
	20A51A1221	Gujjuru rohith	

ABSTRACT

"Plant leaf disease detection has become increasingly important in ensuring sustainable agriculture and maintaining crop health. Since plant illnesses are quite widespread, finding infections in plants is an important job in the agricultural industry. Manual inspection, which is labor-intensive and subjective, is the basis for traditional plant disease detection. It can be inaccurate and has a limited scope. Faster and more accurate detection is provided by more recent techniques like deep learning and machine learning. They can handle a broader range of diseases, making them an appealing option for large-scale, efficient plant disease management. Every nation must automate its agricultural sector. Plant diseases are typically characterized by visual symptoms, and in recent years, a number of deep learning models have produced exceptional results in the classification of plant diseases. Diseases that affect grape plants, such as leaf blight, black measles, and black rot, lower crop yields Early intervention is essential to address this crop disease. A proper diagnosis is required. This paper uses the Grape Leaf image dataset, which comprises 8845 images with four different classes, and applies a deep learning-based convolutional neural network to perform disease prediction. Additionally, various optimisation strategies and activation functions were employed to bring out the differences in convolutional neural network (CNN) model performance. CNN-Nadam with a sigmoid activation function outperforms other CNN optimizers with 99.45% accuracy, according to an analysis of the experiment results. Therefore, quick action would help minimise losses in plant productivity. Revenue, economic expansion, and agricultural productivity will all increase as a result."

Keywords: Agriculture, Grape, Diseased plant, Convolutional Neural Network, Deep Learning, Image Classification, Nadam optimizer

S.no	Regd.no	Students Names	Title
23	20A51A1281	Gollangi dakshayani	Exploring Inactive Participants in E-learning
	20A51A1293	Korada srija	
	20A51A1274	Buddala janardhanarao	
	20A51A1297	Lade nitish sai	

ABSTRACT

This study proposes an integrated approach for drowsiness detection leveraging computer vision techniques and machine learning. This is mainly used during the class sessions. This drowsiness leads to decreased engagement and the learning effectiveness. The methodology combines OpenCV for facial feature extraction, Haar Cascade for face detection, and a Convolutional Neural Network (CNN) for accurate drowsiness classification. The system processes real-time video streams, identifies faces through Haar Cascade, extracts relevant facial landmarks using OpenCV, and feeds this information into a CNN trained on a dataset. The system will continuously analyze real-time data from the photos. When a drowsy state is identified, the system will automatically alert the speaker when a learner shows signs of fatigue. CNN effectively learns patterns indicative of drowsiness, allowing for reliable detection. Experimental results demonstrate the system's effectiveness in real world scenarios, achieving a high accuracy rate in drowsiness detection. This approach showcases the potential for combining traditional computer vision methods with Machine learning algorithms to enhance the performance of drowsiness detection systems, contributing to improved safety in various contexts. The implementation of this technology aims to enhance learning space dynamics, and to promote active learning, and provide timely interventions for drowsy learners, ultimately improving the overall performance and learner well-being.

Keywords: Haar Cascade, CNN, OpenCV, drowsiness detection, eye aspect ratio, Real time monitoring

S.no	Regd.no	Students Names	Title
24	20A51A12B1	Pydisetti vineesh	MULTI CAMERA VEHICLE DETECTION FOR REAL TIME PARKING MANAGEMENT USING DEEP LEARNING AND COMPUTER VISION
	21A55A1212	Payli Pramila	
	20A51A12A2	Narindi Amitha	
	20A51A1277	Enni Chinnikrishna	

ABSTRACT

With the growing urbanization and increasing number of vehicles on roads, efficient management of parking spaces has become a significant challenge in modern cities. This research is offering an optimized solution to an automatic parking system with multicamera vehicle detection to resolve this issue. The proposed approach combines a range of computer vision and Deep Learning models such as R-CNN, YOLO and AlexNet. The key technique for shortening the training process and optimizing the performance by use of pre-trained models, which enable automatic recognition and real time monitoring of available parking places inside a lot. To ensure accurate vehicle recognition, data fusion techniques are going to apply to consolidate vehicle identification findings from multiple cameras. This approach selects the object identification on a specified training dataset, then adjusts hyper parameters and avoids overfitting using the validation set. Conclusively, through evaluation, it produces outstanding outcomes in key performance of Real-time monitoring capabilities and increased model correctness.

Keywords: Car parking spaces detection, Deep Learning, Convolutional neural network, Mask R-CNN, Object detection, Computer Vision, Smart parking systems, Automatic spot mapping.

S.no	Regd.no	Students Names	Title
25	20A51A12B7	Tankala manasa	Enhanced Prediction of Heart Failure Using Machine Learning Algorithms :A Study with RF, LR and KNN
	20A51A1276	Dola sai	
	20A51A1290	Kodutu seetam naidu	
	20A51A1268	B.J.P.L Ratan	

ABSTRACT

"Heart plays a significant role in the human body by pumping blood, supplying oxygen and required nutrients. A normal heart rate should be between 60 to 100 rates per minute, and is different for each minute, and heart rate above 100 beats per minute is considered to be dangerous for a human. This vital heart has some issues related to it. Mainly the issues related to heart occur due to smoking, drinking alcohol, excess workout, high blood pressure, obesity and more. Younger adults between the ages 35 to 64 who have higher rates of obesity and hypertension have the higher chances of having the heart related issues at an earlier age. In our research, we found that heart failure is one of the major problems among all the issues related to heart. HF is the issue when the heart fails to pump blood to meet the needs of a body and is an important public health issue. Generally, people of any age can be affected by the heart failure. In India, about 1% of the population that is between 1.3 million and 4.6 million cases per year. Covid can also be considered a reason for heart failure in many patients.

In the case of diseases related to heart, Machine Learning can be used to classify the occurrence of the disease which can help the diagnostics to reduce the rate of misdiagnosis. In the previous works, the HF prediction is made using the algorithms like KNN, SVM, Naïve Bayes, RF, LR, DT and MLP. And hence we made an idea of making a new system to increase the performance of the prediction than the previous works. In the proposed system, the work is implemented using the machine learning algorithms RF, LR and KNN and python libraries like numpy, matplotlib, seaborn pandas, and scikit- learn. The highest accuracy obtained with RF algorithm is 91.67%. It helps in early prediction of heart failure without misdiagnosis. The heart is like the engine of our bodies, tirelessly pumping blood filled with oxygen and nutrients to keep us alive. Ideally, it beats between 60 and 100times per minute, but sometimes it speeds up, which can be risky. This can happen due to things like smoking, drinking, working out too hard, high blood pressure, and being overweight. Younger adults, especially those between 35 and 64, who are overweight or have high blood pressure, are more likely to have heart problems early on. One of the major problems is heart failure, where the heart struggles to pump enough blood to meet the body's needs. This affects people of all ages and is a major public health concern. In India alone, there is about 1.3 to 4.6 million cases each year.

Keywords: HF: Heart Failure, KNN: K-Nearest Neighbors, SVM: Support Vector Machine, RF: Random Forest, LR: Logistic Regression, DT: Decision Tree, MLP: Multi-Layer Perceptron

S.no	Regd.no	Students Names	Title
26	20A51A1261	Varanasi madhulekha	Comparative analysis of machine learning for optimizing flight price prediction
	20A51A1212	Bommana swetha	
	20A51A1263	Voona surendra	
	20A51A1215	Buragana prasanth	

ABSTRACT

In the dynamic and highly competitive airline industry, accurate flight price prediction is paramount for both travellers seeking cost effective options and airlines optimizing revenue management. This paper examines various machine learning algorithms for accurate flight price prediction in the competitive airline sector. Decision Trees, Random Forest, LASSO Regression, MLP Regressor, and Logistic Regression are examined for their ability to identify pricing trends and manage intricate relationships in information. Random Forest is used to improve prediction accuracy by combining multiple decision trees. LASSO Regression analysis is used to select a subset of variables for regression analysis. MLP Regressor is a neural network used for regression. Logistic Regression is modified to forecast flight prices, showcasing its advantages in managing binary outcomes and potential use in ticket pricing. Performance is assessed using r2 score RMSE and MAE and feature importance analysis is performed to identify primary determinants of flight costs. The study attempts to shed light on the benefits and disadvantages of each algorithm in flight price prediction, helping stakeholders make better informed decisions in the aviation sector. Forecast flight prices, showcasing its advantages in managing binary outcomes and possible uses in ticket pricing. This study compares several machine learning techniques in the context of flight price prediction.

Keywords: Decision Trees, Random Forest, Logistic Regression. Lasso Regression, MLP Regressor

S.no	Regd.no	Students Names	Title
27	20A51A12C8	Yerpina teja	Machine learning integration for enhancing signature-based malware
	20A51A12A5	Ponnada tarun kumar naidu	
	20A51A1275	Chitrada gowri sankar	
	20A51A12A0	Malla nikhil	

ABSTRACT

"Malware poses a persistent threat to organizations, and existing detection methods struggle to keep pace with the rapid evolution of malware variants. Malicious software can harm systems by degrading performance. This project employs a signature-based malware detection technique. The virus's distinctive signature is characterized by its actions upon the initial launch on a computer, encompassing the initiation of operating system services and the retrieval of infected files from the internet. Contemporary systems leverage a diverse array of machine learning algorithms, integrating methodologies like data mining and deep learning to augment computational analyses, along with other machine learning strategies for infection identification. However, machine learning stands out as one of the most widely used methods for detecting malware. This section provides an elaborate account of the envisioned work in the domain of malware detection. The newly proposed algorithm will detect malware based on its signature. In this research, a machine learning approach is presented for signature-based malware detection, employing a diverse set of algorithms such as Decision Trees, Gradient Boosting Classification, XGBoost, Random Forests, CatBoost, and Ada Boost. The primary objective of the proposed technique is to enhance the accuracy and efficiency of signature-based malware detection, concurrently reducing false positives."

Keywords: Algorithm, Detection, Machine Learning, Malware, Signature-Based

S.no	Regd.no	Students Names	Title
28	20A51A1254	Tangudu Sai Manideep	THOTH-THE CAREER GUIDANCE WEB APPLICATION
	20A51A1251	Sunkari Mayuri	
	20A51A1214	Buddepu Sai Pavan	
	21A55A1206	Bonumaddi Pavankumar	

ABSTRACT

"In today's rapidly evolving educational landscape, students face the challenge of making informed decisions about their future careers. To address this, we propose the design of a novel mobile application focused on providing tailored career guidance based on individual qualifications and preferences. The app aims to empower students by offering personalized recommendations and pathways that align with their strengths, aspirations, and requirements.

Key Features:

1. User Profile Creation: Upon registration, users will create profiles with essential details such as academic qualifications, areas of interest, skills, and personal preferences.

2. Personalized Career Recommendations: Based on the comprehensive analysis of user inputs, the app will generate personalized career recommendations like internships ,workshops, bootcamps etc... These recommendations will encompass various fields, industries, and job roles that align with the user's qualifications and preferences.

3. Pathway Visualization: The app will outline possible pathways to achieve the recommended career goals. It will provide step-by-step guidance, including suggested academic pursuits, certifications, internships, and skill development activities.

4. Skill Enhancement Roadmap: To bridge any gaps between the user's current qualifications and the requirements of their desired career, the app will suggest specific skill enhancement opportunities. These could include online courses, workshops, and practical exercises.

5. Real-time Labor Market Insights: The app will integrate real-time data from job markets, industry trends, and employer demands. This information will ensure that the user's chosen path remains aligned with current market needs.

6. Interactive Learning Resources: Users will have access to a curated collection of learning resources, including articles, videos, and tutorials, to aid their career development journey."

Keywords: ONLINE WEB

S.no	Regd.no	Students Names	Title
29	20A51A12A8	Potnuru harika	Diagnosis and prognosis of plant disease using machine learning and deep learning
	20A51A1288	Kavya metturu	
	20A51A1286	Jami manasa	
	21A55A1207	Pasupureddi lakshmi deepak	

ABSTRACT

Plant diseases are the major cause of low agriculture productivity. Mostly the farmers face difficulties in controlling and detecting the plant diseases. Thus, early detection of these diseases will be beneficial for farmer to avoid further losses. This study proposes an innovative approach to enhance the diagnosis and prognosis of plant diseases through the integration of machine learning (ML) and deep learning (DL) algorithms. Leveraging Convolutional Neural Network (CNN) architectures such as InceptionV3, VGG19, and DenseNet201 alongside traditional ML algorithms like Support Vector Machine (SVM) and Multilayer Perceptron (MLP), the research aims to develop a robust system for early disease detection based on leaf images. Additionally, optimization techniques like the Adam along with activation functions such as tanh, sigmoid. Adam optimizer results with highest accuracy 95.94% as compared to Rest classification techniques.

Keywords: Principal Component Analysis(PCA), Multilayer Perceptron(MLP), Convolutional Neural Network(CNN), Support Vector Machine(SVM), Deep Learning(DL), and Machine Learning(ML).

S.no	Regd.no	Students Names	Title
30	20A51A12B8	Vaddi bhargavi	A cnn-based approach for the detection of skin cancer
	20A51A1295	Kunchala keerthi	
	21A55A1210	Itrajula sai kumar	
	20A51A1279	Gara srikanth	

ABSTRACT

"Skin is the largest organ of the body. It frequently deals with a variety of problems indicatinginternal as well as external factors. Skin issues can be caused by pollutants in the environment, UV radiation, and poor skincare habits. There are many issues related to the skin like acne, sunburn, rosacea, and many more, and one of the major issues is skin cancer. Skin cancer is a type of cancer that originates in the cells of the skin. It can have significant effects on an individual's health and well-being. It starts as lesions on the skin, so if early detection is not done or timely medical attention is not taken then it may lead to skin cancer. Melanoma, squamous cell carcinoma (SCC), and basal cell carcinoma (BCC) are the three primary varieties of skin cancer. This project focuses on the occurrence of skin cancer at an early stage based on the skin imaging data and the dataset used in this project is collected from Kaggle.com namely Melanomia, from the data, both spatial and

sequential patterns are analysed and also the features are extracted to analyze the occurrence of skin cancer. The dataset used for this project comprises of 10000 images with two different classes. A deep learning-based Convolutional Neural Network is used to perform cancer prediction. Additionally, the activation functions SoftMax and Sigmoid and optimization techniques like Adam, RMSprop, and Nadam are applied to improve the model to make accurate predictions. CNN is used due to its ability to extract information from dermatological photos and also perform better

classification by avoiding errors in the dataset. According to the analysis of the experiment results, CNN-Adam with a SoftMax activation function outperforms in comparison to the other CNN optimizers with 91.25% accuracy. Therefore, initial prediction would help in predicting cancer in skin disease, and the proposed work would be a significant step towards improving the lives of patients in the field of dermatology."

Keywords: Squamous Cell Carcinoma, Basal Cell Carcinoma, Convolutional Neural Network, Root Mean Square Propagation optimizer, Skin Cancer.

S.no	Regd.no	Students Names	Title
31	20A51A12A9	Potnuru monika,	Question paper generation for professional courses using outcome based education
	20A51A1267	Ariisetty sai ganesh	
	20A51A12C2	Voona charishma	
	20A51A12C1	Vidhyadhar sahu	

ABSTRACT

Automatic question paper generation offers a solution to the time-consuming task of crafting effective assessments. This system generates multiple unique papers for various subjects, considering course outcomes, Bloom's taxonomy levels, and difficulty (easy, moderate, hard). Users can specify the number of papers needed. A randomization technique ensures each paper is unique while maintaining difficulty and topic balance. The algorithm avoids repeated questions and balances topic distribution, selecting questions randomly without bias. The Outcome-Based Education (OBE) paradigm has become a key foundation for curriculum design and assessment in the field of professional education. This study explores how OBE principles might be included into the creation of test questions for professional courses. This study clarifies the core ideas of OBE and its importance in matching educational goals with intended learning results through a thorough analysis of the literature. It examines the complex interactions that exist between learning goals, course results, and evaluation standards, highlighting the need of coherence and alignment. This paper presents a thorough approach to creating question papers using the OBE framework. It includes defining course objectives, creating quantifiable learning goals, and creating evaluation items that accurately reflect student's progress toward these goals. Important factors that guarantee the caliber and effectiveness of the test papers are taken into account, including Bloom's taxonomy, Course Outcomes, reliability, and fairness. In addition, the discussion is around how technology might improve assessment procedures and streamline the process of creating question papers. The use of the suggested methodology is demonstrated through case studies and examples from a range of professional courses, underscoring its adaptability and efficacy in a variety of educational environments. The significance of incorporating OBE principles into the process of creating question papers is highlighted in the paper's conclusion, which highlights how this can lead to a more student-centered and outcomes-driven approach to teaching. It emphasizes how important it is for instructors and educational establishments to use OBE as a guiding framework in order to improve the caliber and applicability of professional education.

Keywords: Course Outcomes, Paper Generator, Outcome-Based Education (OBE)

S.no	Regd.no	Students Names	Title
32	20A51A1228	Kongarapu Reshma	Plant Species Classification Using Deep Learning
	20A51A1237	Paila Pratyusha	
	20A51A1233	Mandapati Harish	
	20A51A1252	Suru Vamsi	

ABSTRACT

Understanding more about the species is essential if we are to preserve biodiversity. Different plant species are hard to distinguish with conventional handcrafted traits. It is challenging for those who are not experts on plants to recall the precise botanical nomenclature. It's growing more and more likely that different plant species will be able to be identified automatically. Deep learning and machine learning are crucial in this situation. Thus, we are utilizing Convolutional Neural Networks (CNN) powered by deep learning to extract data from leaves images and classify various plant species. All handcrafted methods are outperformed by deep learning algorithms.

Keywords: Deep learning, mobile net, convolutional network, classification of plant species

S.no	Regd.no	Students Names	Title
32	20A51A1224	Kalivarapu Akhil	Image denoising using neural networks and statistical methods
	20A51A1220	Gudla Sai Vennala	
	20A51A1249	Sattaru Naveen	
	20A51A120	Vangapandu Jayanth Kumar	

ABSTRACT

"Image denoising is one of the fundamental challenges in the field of image processing and computer vision. The main aim of this project is to get a complete noiseless image with high accuracy and less time. So, in this project, an effective denoising technique using RNN (Recurrent neural network) for fixed pattern noisy images is proposed which may reduce the usage of several autoencoders. Here, the images are passing into the recurrent neural networks as pixel information in the form of a 3D coordinate system. RNN doesn't migrate the information from one node to another node until it gets its basic requirements. In this project a single autoencoder was used it will reduce noise

as well as time complexity. The statistical analysis is going to be observed by using the following metric considerations, namely MSE (Mean square error) and Entropy. This research aims to achieve an image with minimal to no noise."

Keywords: RNN, FPNI, Deep Learning Model, Metric Consideration.

S.no	Regd.no	Students Names	Title
33	20A51A1289	Keerthiray koushik panda	Single image deraining using multi scale progressive fusion network
	20A51A1292	Korada Mahendra	
	21A55A1208	Sindiri sai kumar	
	20A51A12C4	Woolla akhil	
	20A51A12C7	Yalla ganesh	

ABSTRACT

"Rain Drops Have Different Distance From Their Position To Camera, Rain Drop In The Air Appear With Varying Degrees Of Blurring And Resolution. A Rain Image And Its Multi-Scale (Or Multiresolution) Counterparts Both Show Similar Rain Patterns, Making Possible To Use This Information For Rain Drop Presentation. The Multi Scale Progressive Technique For Single Rain Image Drop Removal Is The Name Of The Framework In Which We Examine The Multi Scale Representation For Rain Drop From The View Of Input Image Scales And Pyramidal Deep Features Because Multiscale Progressive Approach Had Better Results In Different Image Processing Models. We Use Recurrent Calculation To Collect The Texture For Similar Rain Drops At Various Locations. This Enables Us To Examine The Information At The Dimension To Define The Target Rain. In

Addition, We Build Multi-Scale Hierarchal Structures And Add The Attention Mechanism To Direct The Careful Integration Of These Associated Data From Various Scales. The Training Is Boosted By This Multi Scale Progressive Fusion Technique In Addition To The Cooperative Representation. Our Suggested Strategy Receives The Most Cutting-Edge Outcomes After Being Thoroughly Tested On Numerous Benchmark Datasets. Additionally, We Perform Tests On Combined Detraining, Detection, And Segmentation Tasks, Which Sparks A Fresh Line Of Inquiry Into Task-Driven Image De-Raining."

Keywords: Image De-raining, Convolution Neural Network, Deep Learning.

S.no	Regd.no	Students Names	Title
34	20A51A1282	Gorle Sai Sathwika	SURVEILLANCE-BASED QUARREL DETECTION
	20A51A12B6	Tangudu Reshma	
	20A51A1284	Hima Priya Sahu	
	20A51A1269	Barata Sai Preethi	
	20A51A12B3	Sasanapuri Nikitha	

ABSTRACT

"This paper presents a comprehensive study to improve violence detection capabilities in video footage, with a particular focus on the Violence Detection Dataset. The dataset comprises two classes, ""safe"" and ""unsafe,"" capturing a diverse range of scenarios. This research explores and compares the efficacy of two prominent machine learning algorithms, Random Forest and Convolutional Neural Network (CNN), in the real-time identification and categorization of safe and unsafe instances. After thorough evaluation, Random Forest is shown to be more accurate and efficient than CNN in detecting acts of violence. In addition to addressing issues with different visual datasets, the study extends beyond algorithmic comparison and provides insightful information about algorithm performance in a range of contexts. The effective use of Random Forest in real-time surveillance has great potential for public safety, law enforcement, and crowd management. The findings contribute not only to the evolving field of violence detection but also provide practical guidance for the implementation of machine learning algorithms in real-world surveillance scenarios. The outcomes of this study are significant for the creation of safer public areas by promoting the development of monitoring systems that are more efficient and secure. For scholars, professionals, and officials looking to enhance violence detection technologies, this report is a valuable resource."

Keywords: Convolutional Neural Network, Random Forest, OpenCV, Violence Detection, Surveillance videos

S.no	Regd.no	Students Names	Title
35	20A51A1232	Linga Raju Behera	Road Crack Detection using Deep Learning
	20A51A1219	Gollapudi Sai Sravani	
	20A51A1262	Vineetha Ratnala	
	20A55A1202	Ijjada Sai Chetan	

ABSTRACT

"The road is a path that supports to connect different places. It plays a crucial role in our day today life. Improper maintenance, overloading, climate conditions, and some other elements create distress on the roads. The common distresses are potholes, cracking, and rutting. In recent past, accidents on road is on the increase due to improper maintenance of road. Road maintenance and safety are critical concerns for transportation infrastructure. As the cracking of roads is the basic and the root cause for further damages like potholes etc., Manually detecting this distress means human inspection is a messy and long time-consuming process. Among the various challenges, detecting road cracks early is essential to prevent accidents and costly repairs. In this project, we propose a deep learning framework method for automatically identifying cracks in roads. Road photo datasets from various sources are used to train the suggested algorithm., including various road surface types, lighting conditions, and crack verities. Then, data augmentation technique is implemented to enhance model generalization. To further improve the model's performance, we use various deep learning frameworks and fine tuning of the hyper parameters is done. The suggested deep learning approach offers reliable and consistent grading results and computationally less expensive comparatively. The suggested deep learning approach demonstrates remarkable accuracy in detecting and classifying road cracks, making it a valuable tool for road maintenance authorities. Accuracy, precision, recall, and F1-score have all been used to assess the performance of the suggested method."

Keywords: Road cracks, Deep Learning, Pre-trained models, Data Augmentation.

JOURNALS/CONFERENCES ABSTRACTS

(STUDENTS AND FACULTY)

"Toxic Comment Classification using Deep Learning"

[1]B. Ramesh Naidu,[2]Naresh Tangudu, [3]Ch. Chandra Sekhar, [4]K. Kavitha,[5]B.V. Ramana,[6]P. Venkateswarlu Reddy, [7]JayavardhanaraoSahukaru,[8]Raj Ganesh Lopinti

Abstract: Online Conversation media serves as a means for individuals to engage, cooperate, and exchange ideas; however, it is also considered a platform that facilitates the spread of hateful and offensive comments, which could significantly impact one's emotional and mental health. The rapid growth of online communication makes it impractical to manually identify and filter out hateful tweets. Consequently, there is a pressing need for a method or strategy to eliminate toxic and abusive comments and ensure the safety and cleanliness of social media platforms. Utilizing LSTM, Character-level CNN, Word-level CNN, and Hybrid model (LSTM + CNN) in this toxicity analysis is to classify comments and identify the different types of toxic classes by means of a comparative analysis of various models. The neural network models utilized for this analysis take in comments extracted from online platforms, including both toxic and non-toxic comments. The results of this study can contribute towards the development of a web interface that enables the identification of toxic and hateful comments within a given sentence or phrase, and categorizes them into their respective toxicity classes

Keywords: -abusive comments, toxic classes, LSTM, CNN, Hybrid model, toxic classes, word-level and character-level, online interface

“Fish Image Species Classification Using Conventional Neural Network”

[1]Naresh Tangudu

Abstract: The target of this paper is to recommend a way for Automated classification of Fish species. A high accuracy fish classification is required for greater understanding of fish behavior in Ichthyology and by marine biologists. Maintaining a ledger of the number of fishes per species and marking the endangered species in large and small water bodies is required by concerned institutions. Majority of available methods focus on classification of fishes outside of water because underwater classification poses challenges such as background noises, distortion of images, the presence of other water bodies in images, image quality and occlusion. This method uses a novel technique based on Convolutional Neural Networks, Deep Learning and Image Processing to achieve an accuracy of 96.29%. This method ensures considerably discrimination accuracy improvements than the previously proposed methods.

Keywords: Deep Learning, Convolutional Neural Network

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

1B. Ramesh Naidu, 2Ch.Someswara Rao,3K.V.L. Bhavani,4NareshTangudu,5M. Jayanthi Rao

Abstract: Cold stress is one of the major abiotic stress factors affecting rice growth and development, leading to significant yield loss in the context of global climate change. Exploring natural variants that confer cold resistance and the underlying molecular mechanism responsible for this is the major strategy to breed cold tolerant rice varieties. Here, we show that the natural variations of a *SIMILAR to RCD ONE (SRO)* gene, *OsSRO1c*, confer cold tolerance in rice at both seedling and booting stages. OsSRO1c possesses intrinsic liquid-liquid phase separation ability *in vivo* and *in vitro* and recruits an AP2/ERF transcription factor and positive cold stress regulator, OsDREB2B, into its bio molecular condensates in the nucleus, resulting in elevated transcriptional activity of OsDREB2B. The OsSRO1c-OsDREB2B complex directly responds to low temperature through dynamic phase transitions and regulates key cold response genes, including *COLD1*. Furthermore, introgression of an elite haplotype of *OsSRO1c* into a cold susceptible *indica* rice significantly increases its cold resistance. Collectively, our work reveals a novel cold tolerance regulatory module in rice and provides promising genetic targets for molecular breeding of cold-tolerant rice varieties.

Keywords: IoT, Healthcare, Sensors, Architecture, Medical, Gadgets.

“Fraud Detection Using Machine Learning and Sentiment Data Analysis”

[1] Dr.B. Ramesh Naidu

Abstract: Purpose-The study focuses on to assess the impact of financial knowledge and financial attitude on financial behavior among customers at private banks in Chennai. Design/methodology/approach-A survey-based questionnaire was used to elicit information from a total of 426 customers who visit private banks in Chennai. Partial least squares structural equation modelling (SEM) was used to assess the impact of financial knowledge and financial attitude on financial behavior of the customers. Findings-The results showed that financial knowledge, financial attitude have a positive impact on financial behavior. Originality/value-A deeper understanding of how an individual manages their finances becomes ever more critical. The findings from this research inform policymakers, practitioners and academics on the importance of the financial knowledge and financial attitude management of their customers.

Keywords: Finance, Consumer Behavior, Customer Attitude, Financial knowledge, Banking

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

1B. Ramesh Naidu, 2Ch.Someswara Rao,3K.V.L. Bhavani,4NareshTangudu,5M. 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.

Keywords: Authentication; Biometric; trait

“2d-Cnn Based Deep Learning Model for Multi Label Land Cover Classification”

B.Ramesh Naidu[1], Chinta Someswara Rao[2], K.V.L.Bhavani[3], M.Jayanthi Rao[4]

Abstract: Multi-label land cover classification is the process of classifying the land into different classes based on the type of land. A well-defined land classification is very useful, as we can find out the type of land with the satellite images of that particular area, which helps the users decide whether the land is suitable for their purposes or not. Several research efforts using machine learning techniques have been underway to accurately label the land, but there is still room for improvement. To improve the classification accuracy, in this paper we propose a 2D convolutional neural network (CNN) model with convolution and max-pooling, and that is fully connected, with dense layers. The proposed 2D-CNN model consists of twoConv2D layers, a flattened layer and two-dense layers. The proposed network comprises of 5,329,361 parameters/nodes out of which 5,329,169 and 192 are trainable and non-trainable parameters/nodes respectively. We classify the images into 17 labels such as agricultural, airplane, baseball, diamond, beach, buildings, chaparral, dense residential etc., with 2D-CNN model with 80% accuracy. We classified the land in this research using the 2D-CNN model. We examined 2100 satellite images to evaluate the model's performance. The experimental study shows that multiple labels in remote sensing images is predicted most accurately by the proposed CNN model. It distinguishes trees, pavement, water, and other labels in remote sensing images considerably well. The tabulated results show that a state-of-the-art analysis was done to learn varying land cover classification models. In the future, we want to investigate graph-based multi-label classifiers and design more effective algorithms for remote sensing image annotation

Keywords: Classification, Land Cover, Deep Learning, CNN

"A Comparison of Pre-Trained Models for Pneumonia Disease Prediction Using Chest Images"

B. V. Ramana1, K. Kavitha2, G. V. L. Narayana3, Reventh Raj , B. Manideep & Naresh Tangudu

Abstract: As viral diseases like Corona spread from one person to another, it has great impact on the public health system and socio-economic activities all over the world. Material and method: The only way to solve the spreading of this disease is early diagnosis of this disease. Statistics and Result: Deep learning algorithms were utilized in this study for comparative analysis of pre-trained models such as VGG16, MobileNetV2 for the detection of pneumonia using different hyper parameters such as batch-size, learning rate, epochs and so on. The proposed models that are MobileNetV2 and VGG16 attains better performance.

Keywords: Deep learning, Chest X-ray images, Pneumonia, Disease Prediction, Performance

“Detection of PCOS using Machine Learning Algorithms with Grid Search CV Optimization”

K. Kavitha1, Naresh Tangudu2, Smita Rani Sahu3, G V L Narayana4, V. Anusha5

Abstract: Polycystic ovarian syndrome affects a lot of women who are of reproductive age (PCOS), a prevalent endocrine condition, develops. It has an impact on the female reproductive system, leading to polycystic ovaries, hyperandrogenism, and/or Ano/Oligo ovulation. Menstrual irregularities or high levels of androgen (male hormone) can occur in women with PCOS. The ovaries may create a great deal of small follicle clusters (cysts) and stop regularly producing eggs. Some signs of PCOS are period irregularities, an excess of androgen, polycystic ovaries, an abnormal BMI, imbalanced hormone levels, and decreased insulin sensitivity. In order to address this problem, a PCOS early detection app was developed using machine learning techniques. This study investigated the feasibility of creating an automated model to diagnose PCOS using machine learning techniques such as LightGBM Boost, Gradient Boost, and XGBoost, then using it with optimization methodology.

For the best accuracy, grid search CV for hyperparameter tweaking. This conclusion was reached based on their statistical analysis of the data value on the earlier data set observations. The results are evaluated in terms of accuracy, recall, f1_scorings, and precision and are automated for real-life usage as web-based research.

Keywords - Hyperandrogenism, Ano/Oligo ovulation, Polycystic, Follicles, Statistical analysis, Grid search CV.

"An Effective Routing Algorithm for Load balancing in Unstructured Peer-to-Peer Networks."

Anil V. Turukmane [a] Naresh Tangudu [b] B. Sreedhar [c] D. Ganesh [d] P. S. Sagarika Reddy [e] Umamaheswararao Batta [f]

Abstract: Both Academics and industry experts in computer networking are showing a growing interest in peer-to-peer (P2P) networking. In recent years, researchers have attempted to use decentralized peer-to-peer networks to deliver Live Streaming (LS) & Video-on-Demand (VoD). Most of these studies have centered on the properties of the overlaying graph (P2P overlay) that connects the set of interested peers and on the creation of distributed P2P blocks scheduling algorithms for content transfer among the participating peers. Both excessive network traffic and unpredictable delay are significant issues for unstructured p2p systems. Flooding and dynamic query, two of the most used search methods in decentralized p2p networks, are ineffective in dealing with these issues because they lack a heuristic. Existing congestion control designs are not well suited for P2P live streaming traffic, and there has been a paucity of study on the network congestion of these systems. In this work we are proposing an efficient load balancing scheme called Routing Algorithm for Covering Dynamic Time to avoid congestion control for transmitting large amount of data in unstructured Peer-to-peer networks. We are evaluating the proposed efficient Load Balancing mechanismin terms of load distribution rate with virtual servers & performance rate and proved that our proposed scheme works efficiently when compared to existing load balancing schemes.

Keywords : Unorganized P2P networks, load distribution, routing, congestion management

"Artificial Intelligence-Powered Electric Vehicle's Battery Management System with IoT."

Nageswara Rao Gali [a], Singamaneni Krishnapriya [b], G. Kirubasri [a], Mahendra T. Jagtap [c], A. V. G. A. Marthanda [d], Mohammad Shahid [e]

Abstract: As a key part of electric vehicles, batteries are the maximum important parts of electric vehicles because of their charging and discharging functions. They supply the electricity that drives the vehicle's motor. A vehicle powered by electricity could not function without batteries. The vehicle fails to operate smoothly if the batteries aren't functioning properly. The current and voltage variations affect the battery system. So we cannot predict the accurate voltage and current measurement. The objective of this study is to observe and optimise the efficiency of battery energy management systems (BEMS) by using the Internet of Things (IoT) and Artificial Intelligence (AI). Additionally, the research aims to investigate strategies for effectively managing batteries in electric cars. Lithium-ion battery used in this system because of greater energy density compared to other conventional batteries. The costliness of batteries in electric vehicles offers significant opportunity for the enhancement of battery State of Health (SOH) and State of Charge (SOC) predictions via the use of AI-Powered Cloud Services. This improvement aims to enhance cost-effectiveness and durability. A system driven by artificial intelligence and hosted on a cloud platform has the capability to adapt to evolving changes in battery health resulting from operational conditions. It then provides updated information to the battery management system, enabling it to make continually improved management choices. The neural network algorithm is built using a Python script. Node-RED designed the user interface and login for the web server. Concerning embedded devices, sensors, and mobile apps, the Internet of Things plays a significant role. MQTT is a reasonably lightweight messaging protocol.

Keywords: Battery management system (BMS), embedded system, IoT, notification, messaging protocol

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

[1]Ramesh Ch and [2]Yoshita [3]B Panduranga [4]Vital Terlapu, [5]JagadeeswaraRao G, [5]Siva Prasad A, [6]Ramesh Y

Abstract: Diabetes is one of the most widely recognized medical ailments as a silent killer in the medical services space everywhere or worldwide. It is a metabolic and persistent disease, and that indication is raising blood glucose. It leads long run to hardly harm the heart, veins, nerves, eyes, and kidneys. The causes of diabetes are hereditary, liquor utilization, smoking, obesity, activities in day to day, food habits, blood pressure, etc. Depending on the type and severity of diabetes impacts the other organs in the patient's body likewise, kidneys, heart, eyes, etc. are more prone to diseases. In this, predict diabetes using the MLP-WOA model, which is a fine-tuned weight of MLP with (WOA) Whale Optimization Algorithm. We have used a diabetes benchmark dataset taken from the UCI ML repository. We have scrutinized our model for accuracy, precision, and recall. The results have to compare against other machine learning (ML) like SVM, KNN (K-nearest neighbors), Whale Optimization Algorithm MLP, and (DTs) decision trees. We found that our MLP_WOA model performed well with an accuracy of approximately 76% than other experimental models. Also, we have tested our MLP model with other existing optimizers and observed that the WOA optimizer is giving better results.

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

[1]G. JagadeeswaraRao & [2]A. Sivaprasad

Abstract: Machine learning (ML) models are used in the interdisciplinary field of bio-ML to solve biological challenges. The diagnosis and treatment of cancer can benefit from the display of genetic mutations and complex biological process relationships in Ribonucleic acid sequencing (RNA-seq) data. In this paper, we are proposing a bio-ML approach to find gene biomarkers in pancreatic cancer (PC). The pancreatic adenocarcinoma (PAAD) gene expression data was obtained from The Cancer Genome Atlas (TCGA) project database. In our work, we used two methods: one is an ensemble stacking classifier with cross-validation (SCV), which is an ensemble of K-nearest neighbour (KNN), random forest (RF), gradient boosting (GB), and logistic regression (LR) classifiers for effective classification of differentially expressed genes (DEGs); and the second is weighted gene co-expression network analysis (WGCNA) to find the hub gene module. The genes reported from the first and second methods were intersected to find common DEGs. These DEGs were analysed using the PPI network, gene ontology, and pathways to identify the eight hub genes. These hub genes were further evaluated using Gene expression profiling interactive analysis version 2 (GEPIA2), resulting in four novel biomarkers (BUB1, BUB1B, KIF11, and TTK). We believe the integration of the ML approach in biological research is producing encouraging results and aiding in the resolution of challenging issues.

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

"Identification of potential biomarkers for pancreatic ductal adenocarcinoma: a bioinformatics analysis"

[1]G. JagadeeswaraRao & [2]A. Sivaprasad

Abstract: PDA is an aggressive cancer with a 5-year survival rate, which is very low. There is no effective prognosis or therapy for PDA because of the lack of target biomarkers. The objective of this article is to identify the target biomarkers for PDA using a bioinformatics approach. In this work, we have analysed the three microarray datasets from the NCBI GEO database. We used the Geo2R tool to analyse the microarray data with the Benjamini and Hochberg false discovery rate method, and the significance level cut-off was set to 0.05. We have identified 659 DEGs from the datasets. There are a total of 15 hub genes that were selected from the PPI network constructed using the STRING application. Furthermore, these 15 genes were evaluated on PDA patients using TCGA and GTEx databases in (GEPIA). The online tool DAVID was used to analyse the functional annotation information for the DEGs. The functional pathway enrichment was performed on the GO and KEGG. The hub genes were mainly enriched for cell division, chromosome segregation, protein binding and microtubule binding. Further, the gene alteration study was performed using the cBioportal tool and screened out six hub genes (ASPM, CENPF, BIRC5, TTK, DLGAP5, and TOP2A) with a high alteration rate in PDA samples. Furthermore, Kaplan–Meier survival analysis was performed on the six hub genes and identified poor-survival outcomes that may be involved in tumorigenesis and PDA development. So, this study concludes that, these six hub genes may be potential prognostic biomarkers for PDA.

Keywords: Cancer, PDA, bioinformatics, biomarkers, DEGs, hub genes.

"Classification of gene expression from RNA-seq data for pancreatic cancer prognosis using ensemble learning"

[1]G. JagadeeswaraRao & [2]A. Sivaprasad

Abstract: Gene expression analysis of transcriptomic data enables us to identify changes in gene expression under some biological conditions. Ribonucleic acid (RNA) sequencing (RNA-seq) data can show genetic mutations and intricate biological process connections, which are useful in the diagnosis and treatment of cancer. The existing classical differential gene expression analysis techniques are prone to false negatives and false positives with smaller datasets. With the improvements in the field of machine learning (ML), we want to build an ensemble learning model for the classification of differentially expressed genes (DEGs) from RNA-seq data for pancreatic cancer. The gene expression data was obtained from the Cancer Genome Atlas-Pancreatic Adenocarcinoma Project database. In this paper, we are proposing a stacking classifier with cross-validation called the stacking CV classifier, which is an ensemble of K-nearest neighbor, random forest, gradient boosting, and logistic regression classifiers for the effective classification of DEGs. We also made a comparative analysis between the results of our ensemble model and existing models in the literature. The results of our model were competitive (accuracy 96% and area under the curve 0.99) against the stand-alone and existing gene classification models. Our ML-based model is a promising tool for classifying DEGs based on gene expression patterns.

Keywords: Gene classification, Cancer, Ensemble learning, Transcriptomics, Machine learning.

"Classification of gene expression from RNA-seq data for pancreatic cancer prognosis using ensemble learning"

[1]G. JagadeeswaraRao & [2]A. Sivaprasad

Abstract: Gene expression analysis of transcriptomic data enables us to identify changes in gene expression under some biological conditions. Ribonucleic acid (RNA) sequencing (RNA-seq) data can show genetic mutations and intricate biological process connections, which are useful in the diagnosis and treatment of cancer. The existing classical differential gene expression analysis techniques are prone to false negatives and false positives with smaller datasets. With the improvements in the field of machine learning (ML), we want to build an ensemble learning model for the classification of differentially expressed genes (DEGs) from RNA-seq data for pancreatic cancer. The gene expression data was obtained from the Cancer Genome Atlas-Pancreatic Adenocarcinoma Project database. In this paper, we are proposing a stacking classifier with cross-validation called the stacking CV classifier, which is an ensemble of K-nearest neighbor, random forest, gradient boosting, and logistic regression classifiers for the effective classification of DEGs. We also made a comparative analysis between the results of our ensemble model and existing models in the literature. The results of our model were competitive (accuracy 96% and area under the curve 0.99) against the stand-alone and existing gene classification models. Our ML-based model is a promising tool for classifying DEGs based on gene expression patterns.

Keywords: Gene classification, Cancer, Ensemble learning, Transcriptomics, Machine learning

“Generation of Optimal Multicast Routing in VANET using Particle Swarm Optimization”

Smita Rani Sahu[1] , Biswajit Tripathy2

Abstract: VANET, or Vehicular Ad Hoc Network, is a type of ad hoc network that enables communication between vehicles on the road and between vehicles and other roadside infrastructure. Multicast routing in VANET for intelligent traffic management involves efficiently transmitting data packets from a single source to multiple destinations. Vehicles in VANET are constantly moving, which makes it difficult to maintain connectivity and establish communication between vehicles. Furthermore, high-speed and rapid movements of vehicles, which can lead to frequent disconnections and packet losses, can create sudden gaps in the network, which can lead to data loss and communication breakdowns. In order to overcome such a situation, the current research work implemented an evolutionary algorithm known as Particle Swarm Optimization (PSO), which makes a robust and efficient routing protocol to ensure reliable communication

Keywords: Multicast routing, Vehicular Ad-Hoc Network, Particle Swarm Optimization, Greedy forwarding, Packets delivery rate.

“Distinguish and restrict the cyberbullying conversation on social networks using support vector machine algorithm”

M. Jayanthi Rao, A. Venkata Mahesh, P. Prasanthi, B. Ramakrishna, M. Ramanaiah, M. Balakrishna

Abstract: In current days there was a lot of abused communication found in social media. A recent survey report confirmed that more than 80 percent of online social networks are having abused or vulgar communication on their user accounts. These types of messages are mainly posted on user walls in order to harass teens, preteens other children by posting these types of offensive messages. Till now no application is providing a solution for this cyber content not to spread on social media, so this me to design this current application for stopping vulgar communication in online social networks. In this proposed application, we mainly try to propose a new representation learning method to tackle this problem for identifying and stopping the abused messages not to communicate in online chat. Here we try to use well-known machine learning algorithms such as Support Vector Machine for classifying the abused messages and normal messages and, we use Porter Stemming Algorithm to pre-process the text messages. This Porter Stemming is a well-known NLT Package, which will divide the whole message into parts and then assign tokens for each individual word. Here, we classify the cyber bullied dialogue into five categories based on literature such as hate, vulgar, offensive, sex and violence.

Keywords: Multicast routing, Vehicular Ad-Hoc Network, Particle Swarm Optimization, Greedy forwarding, Packets delivery rate.

Editorial Board

Faculty

Dharmana.Neelima

Students

S. Tarun 21A51A1256

M. Siddhartha 22A51A1252

J. Vamsi Krishna 23A51A1286

ADITYA

Institute of Technology and Management

(An autonomous institution)

Tekkali-532 201, Srikakulam Dist., AP
Tel: 0845-245666, 245266, 92466 57908
Email: info@adityatekkali.edu.in