National Conference-SAIET 2025

School of Computer Science and Technology

Faculty of Engineering Technology

10/10/2025

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Mr. Firoz Khan, Assistant Professor & HOD, CS- DS & CS- IoT Dept.

IMPORTANT DATES:

Paper Submission Opens : 20/09/2025

Paper Submission Closes : 26/09/2025

Notification of Acceptance : 05/10/2025

Registration Opens: 06/10/2025

Registration Closes: 09/10/2025

REGISTRATION FEE:

UG/PG Students & Research Scholars ₹350

Faculty Members ₹500

Industry Person ₹1000

PAPER PUBLICATION

All papers will be peer-reviewed and accepted papers will be published in the conference proceedings.

PROGRAM COMMITTEE

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KEYNOTE SPEAKER

Dr. Pavan Kumar C
Professor - CSE Department
IIIT, Dharwad

Dr. Pavan Kumar C is a faculty in the Department of Computer Science and Engineering at the Indian Institute of Information Technology (IIIT) Dharwad, an Institute of National Importance located on Ittigatti Road, Dharwad, Karnataka. He is actively involved in teaching, research, and mentoring students, with expertise in areas such as artificial intelligence, machine learning, data science, and computer systems. Dr. Pavan Kumar focuses on bridging theoretical concepts with practical applications, encouraging innovation and problem-solving among students. Through his academic contributions, research pursuits, and institutional involvement, he plays a key role in shaping future professionals in computer science and engineering.

GM UNIVERSITY
Innovating Minds

SAIET – 2025

(Hybrid Mode)

National Conference on "Smart Systems, Artificial Intelligence and Emerging Technologies"

GM UNIVERSITY

P.B. Road, Davanagere - 577006

ORGANIZED BY:

School of Computer Science & Technology

Friday, 10th October 2025

ABOUT GM UNIVERSITY:

GM University (GMU) has been established with a goal to provide opportunities for higher education for all sections of Society. Though GM University is new in its name but has a history of more than 20 years in higher education. GM Institute of Technology (GMIT), a well-known Engineering and Technology institution which is now a part of GM University was established way back in 2001. GMIT is known for its quality education and nurturing of young talents. To extend the portfolio of offerings and to meet 21st Century education needs GMU was established. GMU aims to be a premier university in the country and in the globe. GMU has a unique education model to provide holistic education to its students and to meet 21st century education challenges.

ABOUT SCHOOL OF COMPUTER SCIENCE & TECHNOLOGY

At GM University, the Computer Science and related departments provide a wide spectrum of programs tailored to meet the evolving needs of the digital world. The core branches, Computer Science and Engineering (CSE) and Information Science and Engineering (ISE), lay strong foundations in programming, algorithms, software, and information management. Advanced domains such as AI & ML and AI, Blockchain & Business Systems focus on intelligent systems, automation, and secure enterprise solutions. The IoT with AI program develops expertise in smart, connected devices powered by artificial intelligence, while Data Science equips students with analytical and predictive modeling skills for handling big data. Specialized streams like Cyber Security and Information Security train professionals to protect systems, data, and networks from cyber threats. Meanwhile, the Cloud Computing program emphasizes scalable infrastructure, virtualization, and cloud-based applications. Together, these programs blend strong technical knowledge with emerging technologies, shaping graduates into skilled, innovative, and industry-ready professionals.

Faculty of Engineering and Technology

School of Computer Science & Technology Offers:

B.Tech. in

Computer Science and Engineering (CSE)
Information Science and Engineering (ISE)
Computer Science-AI & ML (CS-AIML)
Computer Science - AI, Blockchain & Business Systems (CS-AI, BC &BS)
Computer Science-IoT with AI
Computer Science-Data Science (CS-DS)
Computer Science-Cyber Security (CS-CY)
Computer Science-Cloud Computing (CS-CC)
Computer Science-Information Security (CS-IY)

GM School of Advanced Studies (GMSAS) Offers:

M.Tech. in

Data Engineering
Deep Learning
AI in Healthcare

ABOUT THE CONFERENCE:

The National Conference on Smart Systems, Artificial Intelligence, and Emerging Technologies (SAIET 2025) is envisioned as a platform that unites academic researchers, industry professionals, and young scholars to share knowledge, innovations, and advancements in the fields of smart systems and AI-driven emerging technologies. This conference will highlight interdisciplinary applications, cutting-edge research, and future trends in technology related to computer science & engineering. By fostering collaboration and idea exchange, it aims to inspire innovation, address real-world challenges, and explore transformative technologies shaping the future.

CALL FOR PAPER PRESENTATION

The National Conference on Smart Systems, Artificial Intelligence, and Emerging Technologies (SAIET 2025) invites students, researchers, academicians, and industry professionals to showcase their research before an expert audience. The conference welcomes innovative, original, and unpublished research papers, case studies, and ideas aligned with its theme. It serves as a vibrant platform to exchange knowledge, foster collaboration, and explore the transformative role of smart systems, AI, and emerging technologies in shaping the future.

PAPER CONTRIBUTION RELATED TO THE FOLLOWING CUTTING - EDGE AREAS OF RESEARCH ARE WELCOME

- Artificial Intelligence, Deep Learning, and Intelligent Systems
- Blockchain Technology and Secure Digital Ecosystems
- Cloud Computing, Edge Computing, and Virtualization
- Big Data Analytics and Predictive Modeling
- Human–Computer Interaction and Natural Language Processing
- Cyber Security, Privacy, and Digital Forensics
- Smart Healthcare Systems and Biomedical Engineering Applications
- Digital Twin Technology and Simulation in Engineering
- Augmented Reality (AR), Virtual Reality (VR), and Metaverse Technologies
- Quantum Computing and Next-Generation Computing Paradigms
- Green Computing and Sustainable Smart Technologies
- Automation in Agriculture and Smart Farming Technologies
- Smart Manufacturing, Industrial IoT, and Industry 5.0
- Intelligent Transportation Systems and Autonomous Vehicles
- Space Technology, Remote Sensing, and Satellite Applications

PAPER SUBMISSION GUIDELINES

Full-length high-quality original, previously unpublished, experimental or theoretical research articles not exceeding eight (8) pages as per the conference template shall be uploaded for SAIET-2025 through paper submission link

https://forms.gle/VLQaJn16mbULG4Wp7

ACCOUNT DETAILS:

Bank Details:

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EXPLORE DAVANAGERE

The Glass House of Davanagere, the largest in the country, is a stunning attraction near Kundawada Lake on NH-4 drawing tourists, including international visitors, to it's heavenly ambience.

Harihara, a syncretic deity blending Vishnu (Hari) and Shiva (Hara), is home to the 12th century Harihareshwara Temple, built during the Hoysala era. The region flourished under Hoysala rule. from the 11th to 13th centuries AD. It is known for Architecture Beauty.

In the 16th century AD, Kenga Hanumantappa Nayaka built a temple, pond, and Vasanta Mantapa in Santhebennur, while in the 17th century, Bijapur's commander Ranadullakhan added a musafirkhana and mosque nearby.

FOR MORE DETAILS CONTACT:

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saiet2025@gmail.com

List of Papers

Sl. No.	Paper Code	Title of the Paper	Department	Faculty/ Student
1	NC-01	An integrated approach to URL security that incorporates machine learning and threat intelligence	Cyber Security & Information Security	Dr Prakash Kuppuswamy
2	NC-02	RHYTHM: An AI-Powered Smartwatch for Real-Time Emotion Recognition	Cyber Security & Information Security	Dr Prakash Kuppuswamy
3	NC-03	Smart AI empowered Footwear: An Assistive Navigation System for the visually challenged people	Cyber Security & Information Security	Dr Prakash Kuppuswamy
4	NC-04	A Cloud-Integrated IoT and ML Framework for Real-Time Traffic Intelligence and Congestion control	Cyber Security & Information Security	Dr Prakash Kuppuswamy
5	NC-05	Machine Learning Based Framework for Cyber Threat Intelligence and Prevention Method	Cyber Security & Information Security	Dr Prakash Kuppuswamy
6	NC-06	Detection of Phishing Websites through Supervised Machine Learning Techniques	Cyber Security & Information Security	Dr Prakash Kuppuswamy
7	NC-08	Comparative Analysis of ML Models for Predicting Student Academic Performance	Artificial Intelligence and Machine Learning	Akshatha A M S
8	NC-09	Breast Cancer Detection with Artificial Intelligence Model on Logistic Regression	Artificial Intelligence and Machine Learning	Shilpa R N

Sl. No.	Paper Code	Title of the Paper	Department	Faculty/ Student
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10	NC-11	Medicine Recommendation System	Artificial Intelligence and Machine Learning	Chaithra A
11	NC-12	IOT Based Smart Plant Growing and Caring Platform for Urban Environments	DS/IoT	Dr. Sreevani M
12	NC-13	h5n1 disease stage prediction with data visualization using python	Artificial Intelligence and Machine Learning	Mukta Pujar
13	NC-14	A Layered Security Framework for IoT Workflow Applications in Edge-Cloud Environments	DS/CSE-IoT with AI	Firoz Khan
14	NC-15	Prediction of silkworm cocoon shell weight quality using Artificial Intelligence Model	Artificial Intelligence and Machine Learning	Praveen R
15	NC-17	Transforming Healthcare Service Quality Through Advanced Deep Learning Models	CSE-DS/IOT-AI	Bhagyalaxmi Hiremath
16	NC-25	Decentralized Secure Gate Pass Management Framework Using Blockchain, Smart Contracts, and Web3 for Enhanced Transparency and Security for GMU Campus	CC/BS	Dr. Shankarayya Shastri
17	NC-27	Farmers Market: A Comprehensive Digital	CC/BS	Rahul BS

Sl. No.	Paper Code	Title of the Paper	Department	Faculty/ Student
		Ecosystem Empowering Direct Crop and Dairy Commerce		
18	NC-28	Emotion Detection Using Brain Signals		Yogitha J.S
19	NC-35	A Student-Built Local Storage Server for Digital Independence	AIML	Vruthvik R Vanjre
20	NC-36	Electronic Component Detection System	AIML	Sanket Anant Barde
21	NC-39	EduBridge AI: An AI-Powered Web Platform for SSLC Students	Computer Science and Engineering	Sanjana B M
22	NC-40	Traffic Sign Classification Using Deep Learning	AIML	Nayana C M
23	NC-41	Information Retrieval System Using Gen-AI	AIML	Veena C S
24	NC-42	Headcount Detection Using YOLO V10	AIML	Mitali Rangani
25	NC-43	Personalized Health Recommendation System	AIML	Amulya P
26	NC-44	Ai Chatbot based Chest X ray analysis	Computer Science and Engineering	P R Harshita
27	NC-45	Predictive Triage and Proactive Scheduling: A Novel Health Informatics Paradigm for Closing the Diagnostic Gap in Underserved Regions.	Cybersecurity and Information Security	Dr. Arun Kumar B. T
28	NC-46	LoanSphere: An AI-Driven Loan Management Portal for Enhanced Credit Risk Assessment and	Computer Science and Engineering	Kavyashree P N

Sl. No.	Paper Code	Title of the Paper	Department	Faculty/ Student
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29	NC-47	An Integrated Framework for Cryptocurrency Trading Using AI-Based Prediction and Automated Real-Time Technical Analysis	Computer Science and Engineering	Ranjitha D S
30	NC-49	BlockEstate 360: AI-Powered Smart Real Estate Tracking & Secure Transactions on Blockchain	Computer Science and Engineering	Aishwarya N
31	NC-52	AI-Powered Detection and Classification of Diabetic Retinopathy Using Deep Learning Algorithms	Computer Science and Engineering	Ms. Ranjitha J
32	NC-53	Glucoband-Link: Doctor Connected 5G Wearable for Smart Diabetes Management	Computer Science and Engineering	Dr. Aruna Kumar B. T
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1	Kavya P H	Alumni Association Platform	ISE	Dr. Neelambike S
2	Darshan totagi (4GM23IS014)	Blood Donation Management System	ISE	Nisha K
3	Sheetal s kulkarni (4GM23IS041)	Car Rental Application	ISE	B Yashwanth
4	Kotresha chavadihindala	Design and Implementation of Pneumonia Detection Using CNN based deep learning model.	CSE	Kavyashree P N
5	Vanshika jain (4GM23IS055)	Interactive Algorithm Visualization Rule	ISE	Niveditha N M
6	Gavsiya riffath khan	Comprehensive Travel Itinerary Suggestion & Budgeting Tool	ISE	Niveditha N M
7	Junaid (4GM24IS400)	Deepfake Image Detection	ISE	Nischit D S
8	Ankitha B V	Smart Cooking Assistant	ISE	Pooja G B
9	Aman S M (4GM23IS007)	Virtual Gesture using OpenCV	ISE	Ananya Patel G P
10	Samarth R Revankar (4GM23IS038)	Smart Attendance System using Face Recognition	ISE	Deekshith R
11	Yuvaraj B M (4GM23IS060)	Transplant Net	ISE	Deekshith R
12	Meghana G S	Development of Digital Mental Health & Psychological Support System for Higher Education Student	ISE	Nisha K
13	Akhila	AI-powered Virtual Wardrobe and Outfit Recommender	ISE	Nisha K
14	Priyanka ub	Cloud based online attendance system	ISE	Gagandeep B M
15	Aishwarya c s	Local voice assistents	ISE	Nisha K
16	Anush suresh naik	Design and Implementation of AI Powered Smart Diagnosis Chatbot for First aid and Symptoms	CSE	Saima Anjum
17	Sneha h g	Design and Implementation of AvaxGods Web 3.0 NFT Card Game Using Block Chain Technology	CSE	Sumana C

Sl. No.	Name of the Team Leader and USN	Title of the Poster	Department	Guide Name
18	A s pranam	“Fake News and Deep Fake Detector using Artificial Intelligence”	ISE	Pooja M V
19	Ananthkumar koppad	Student leave management system	ISE	Vinay H S
20	Akash yadav k n	Decentralized patient controlled health records	CSE	Nayana K
21	Amulya P 4GM22AI009	LiveWise(Lifestyle recommender)	AIML	Jayalakshmi M
22	Vruthvik r vanjre 4GM22AI122	Intelligent Pesticides Sprinkling Robot	AIML	Chaitra A
23	Rahul C S 4GM22AI074	Fix It Now	AIML	Jayalakshmi M
24	Vivek P M	Predictive Triage and Proactive Scheduling.	CSE	Dr.Arun Kumar B T
25	Vinay V	Design and Implementation of a Blockchain-Powered Land Registration Framework for Transparent and Tamper-Proof Property Management	CSE	Dr.Arun Kumar B. T.
26	K Rakshitha	K Glucoband-link: Doctor-connected 5G wearable for smart diabetes management Rakshitha	CSE	Dr. Aruna Kumar B T
27	Haripriya kammar 4GM23AI041	Smart Healthcare Monitoring System	AIML	Mukta Pujar
28	Shivkumar R B 4GM22AI092	Ai Based App For Electronic Component Detector	AIML	Mrs.Chaitra A
29	Geetha S M 4GM22AI031	Headcpunt detection Yolo v10	AIML	Jayalakshmi M
30	Yadunandan Y C 4GM22AI123	A smart solution for home services	AIML	Jayalakshmi M
31	Rakshita G M	Ai Enabled IOT cognitive assistant for visually impaired	AIML	Mukta Pujar
32	Bindu R V 4GM23AI025	Health Monitoring System	AIML	Mukta Pujar

Session Details

Session	Title	Session Chair(s)	Session Coordinator	Venue
Session 1	Faculty Presentation (Dept. of CY/IY)	Dr. Prakash	Pavan Kumar N. T.	CSE Seminar Hall
Session 2	UG, PG & Research Scholars Presentation (Dept. of CC/BS)	Dr. Suhas	Ramya M. S.	Biotech Seminar Hall
Session 3	Poster Presentation (Dept. of CY/IY & AIML)	Dr. Rachana / Dr. Nasreen Taj M. B.	Ashwini G. T. (Dept. of DS/IoT)	GD Room / M.Tech Classroom

ISBN: 978-81-991111-7-2 *10th October 2025*

An integrated approach to URL security that incorporates machine learning and threat intelligence.

Dr. Prakash Kuppuswamy, Ranjit Kumar S, Krupakar S Billichod, Sachin S
Department of Cyber Security & Information Security, Department of Internet of Things, GM University, Davanagere

Abstract

The growing prevalence of phishing, malware distribution and website defacement necessitates effective mechanisms for detecting malicious URLs. Conventional blacklist-based approaches are inadequate, as attackers continuously register new domains and use obfuscation techniques to evade detection. This paper presents a hybrid malicious URL detection system that integrates machine learning (ML) classification, external threat intelligence APIs, and trusted domain verification to provide accurate, real-time protection. The system extracts lexical, structural, and content-based features from input URLs and applies a pre-trained ML model to classify them into Benign, Phishing, Defacement, or Malware categories. Predictions below a confidence threshold are flagged for manual review, ensuring human oversight in uncertain cases. High-confidence results are validated through Virus Total and Google Safe Browsing APIs, with outcomes combined in a decision-making algorithm to compute an overall malicious confidence score. A Stream based interface presents final outcomes Safe, Suspicious, or Malicious along with confidence levels and actionable recommendations. This hybrid approach reduces false positives, enhances accuracy, and establishes a scalable framework for mitigating emerging cyber threats. By leveraging a multi-layered detection strategy, the Malicious URL Scanner reduces false positives, increases detection accuracy, and balances automation with human oversight. This hybrid methodology not only enhances reliability but also establishes a scalable framework for combating emerging cyber threats, making it a valuable contribution to real-time cyber security defense mechanisms.

Keywords: Malicious URLs, Machine Learning, Cybersecurity, Threat Intelligence, Phishing Detection

ISBN: 978-81-991111-7-2 *10th October 2025*

RHYTHM: An AI-Powered Smart watch for Real-Time Emotion Recognition

Dr. Prakash Kuppuswamy, Keerthana N S, Uma Mahesh L, Sahithya Suresh, Nithin JN
Department of Cyber Security & Information Security, Department of Cloud Computing, Business Systems, Department of Robotics and Automation, GM University, Davanagere.

Abstract

The RHYTHM project is a comprehensive wearable health and emotion monitoring system that integrates multiple sensors and advanced processing techniques to deliver real-time physiological and behavioural insights. The system uses a Raspberry Pi as the central controller, connecting a PPG sensor to measure heart rate, an IMU or PIR sensor for motion/activity detection, and a camera module for facial recognition and emotion detection. A microphone is used to capture voice input, enabling speech-based interaction and emotional tone analysis, while an LED/OLED display provides real-time data visualization. A speaker and buzzer are included to deliver voice prompts, alerts, and notifications, ensuring that users are informed of abnormal readings or critical health events instantly. By combining physiological monitoring with computer vision and natural language processing, RHYTHM goes beyond simple fitness tracking to provide a holistic view of the user's emotional and physical state. The system is designed to be user-friendly, power-efficient, and modular, making it suitable for both research and personal use. Its potential applications include health monitoring, stress detection, telemedicine support, and wellness coaching, enabling early intervention and improved quality of life.

Keywords: Health monitoring, NLP, IoT, Sensors, Voice based, Human monitoring etc.

ISBN: 978-81-991111-7-2 *10th October 2025*

Smart AI empowered Footwear: An Assistive Navigation System for the visually challenged people

Dr. Prakash Kuppuswamy, Pranav S Chakrapani, Mazin Mukthar, Sonal Vaishnav,
Department of Cyber Security & Information Security, Department of Cyber Security, GM University, Davanagere.

Abstract

Visual impairment significantly restricts an individual's mobility and independence, making routine navigation tasks not only difficult but also potentially unsafe. Crossing busy roads, avoiding unexpected obstacles and safely navigating unfamiliar environments often present serious challenges. While traditional assistive tools such as white canes and guide dogs provide a certain level of support, they remain limited in scope. Staves can detect ground-level obstacles but fail to identify overhead or fast-moving hazards, while guide dogs require intensive training and are not financially or logistically accessible to many. To overcome these limitations, this research paper introduces the Smart AI Enabled footwear, an intelligent wearable solution designed to enhance navigation capabilities for visually impaired individuals. The proposed system integrates multiple technologies sensors, artificial intelligence (AI), and real-time feedback into a compact and user-friendly shoe design. The data is processed using Tensor Flow Lite and OpenCV, enabling advanced functions like object detection, distance measurement, and route guidance. The processed insights are delivered to the user through audio cues and haptic feedback, ensuring immediate and accessible awareness of surroundings. Experimental evaluations confirm that the Smart AI Enabled footwear can effectively identify obstacles, detect drop-offs, and highlight safe walking paths in real time, thereby offering a significant improvement in safety, confidence, and independence for visually impaired users.

Keywords: Smart shoe, Blind assistance, Artificial Intelligence, Object detection, Raspberry Pi, Ultrasonic sensor, Navigation aid, Computer vision

ISBN: 978-81-991111-7-2 *10th October 2025*

A Cloud-Integrated IoT and ML Framework for Real-Time Traffic Intelligence and Congestion control

Dr. Prakash Kuppuswamy, Sharada S, Sharmila. P, Bindu M.E, Sakubai Kemavi
Department of Cyber Security & Information Security, Department of Internet of Things, GM University, Davanagere.

Abstract

The increasing urbanization and rapid growth of vehicles demand intelligent traffic management systems capable of reducing congestion, enhancing safety, and improving mobility. This research proposes an Internet of Vehicles (IoV)-based traffic congestion control architecture that integrates IoT devices, edge computing, and machine learning (ML) to deliver real-time and adaptive traffic solutions. The system collects traffic data from sensors, cameras, and vehicular networks, which is processed locally at edge nodes to minimize latency, while cloud platforms provide scalable storage, analytics, and predictive modelling. A dedicated ML pipeline, comprising pre-processing, training, and forecasting modules, enables accurate prediction of congestion patterns and travel times. Adaptive signal control and intelligent routing are implemented to optimize vehicle flow and prioritize emergency services. The architecture ensures data integrity and security through IoV-based communication, enabling seamless interaction between vehicles and infrastructure. Experimental results demonstrate significant improvements in traffic forecasting accuracy, congestion reduction, and decision-making efficiency when compared with traditional methods. Overall, the proposed framework represents a scalable, secure, and intelligent solution for sustainable smart city transportation systems.

Keywords: Traffic monitoring, Artificial Intelligence, Machine Learning, IoT, Edge Computing, Cloud Structure

ISBN: 978-81-991111-7-2 *10th October 2025*

Machine Learning Based Framework for Cyber Threat Intelligence and Prevention Method

Dr. Prakash Kuppuswamy, Rachana, Bhavana, Sahana, Thrisha, Akkamahadevi
Department of Cyber Security and Information Security, GM University, Davanagere.

Abstract

Cyber Threat Intelligence (CTI) plays a crucial role in strengthening organizational defences against the ever-growing landscape of cyber-attacks. With the increasing volume of threat reports, incident data, and unstructured information available in open sources, the challenge lies in extracting actionable intelligence effectively and efficiently. Machine Learning (ML) provides advanced techniques to automate CTI analysis, enabling early detection, classification, and prediction of potential threats. This project focuses on applying ML techniques to the CT miner/CTI dataset, which contains structured and unstructured threat intelligence data, including indicators of compromise (IoCs), threat actor information, and attack techniques. Using natural language processing (NLP) and supervised learning models, the system processes textual reports to identify patterns, classify threat types, and predict possible attack scenarios. The approach reduces manual effort in analyzing large volumes of cyber threat reports and enhances decision-making for proactive defense. By evaluating different ML models on the CTIminer dataset, the project demonstrates improved accuracy in detecting malicious indicators and correlating threat actors with tactics. The outcome highlights how ML-driven CTI can transform raw threat data into actionable insights, ultimately supporting faster response, better situational awareness, and stronger cybersecurity posture for organizations.

Keywords: Cyber Threat Intelligence (CTI), Machine Learning (ML), Threat Detection, Threat Prediction

ISBN: 978-81-991111-7-2 *10th October 2025*

Detection of Phishing Websites through Supervised Machine Learning Techniques

Dr. Prakash Kuppuswamy, Chandrakala A S, Apoorva Pavithra Rao, Bhagyashree Hiremath
Department of Cyber Security & Information Security, GM University, Davanagere.

Abstract

This study presents an efficient and practical approach for phishing website detection using classical machine learning techniques combined with a string similarity measure based on the Levenshtein Distance. The proposed method evaluates the similarity between a webpage's main domain and its embedded hyperlinks to identify potential phishing indicators. Key features such as google_index, PageRank, nb_hyperlinks, web traffic, domain age, and phish hints were extracted and analysed to enhance the classification process. The dataset used was perfectly balanced, consisting of 50% legitimate and 50% phishing websites, ensuring unbiased model training and evaluation. Correlation heat maps were employed to identify redundant and unique features, while feature importance plots revealed that search engine indexing and page ranking were the strongest predictors of website legitimacy. Among the classifiers tested—Logistic Regression, Decision Tree, and Support Vector Machine (SVM)—the SVM achieved the highest accuracy of 92.6%, while a Random Forest model demonstrated a strong performance with an accuracy of 95.93%. The confusion matrix and classification report confirmed high precision, recall, and F1-scores across both classes. The proposed model's low computational cost and minimal latency make it suitable for real-time phishing detection in browser extensions or edge-based security systems. Overall, the study highlights that integrating string similarity-based feature engineering with traditional machine learning models can yield high accuracy and efficiency, outperforming more complex deep learning approaches in practical deployment scenarios. This demonstrates a promising direction for lightweight, reliable, and scalable phishing detection systems.

Keywords: Machine Learning, Phishing detection, Deep learning, legitimate websites, malicious websites, Cybersecurity

ISBN: 978-81-991111-7-2 *10th October 2025*

Comparative Analysis of ML Models for Predicting Student Academic Performance

Mrs. Akshatha A M S, Assistant Professor,
Department of Artificial Intelligence & Machine Learning, GM University, Davanagere.

Abstract

Early predicting academic outcomes for student's is important for better curriculum planning and providing timely assistance. This paper uses the various machine learning algorithms to predict student's academic scores based on Essential features such as study hours, attendance, past academic performance, parental involvement and Distance from home. Evaluated a range of regression and classification models, including Decision Tree Regressor, Linear Regression, K-Nearest Neighbors Regressor, Random Forest Regressor, Support Vector Regressor, and Gradient Boosting Regressor, Random Forest Classifier, KNeighbors Classifier, Support Vector Machine, Logistic Regression, Decision Tree Classifier, GaussianNB, Gradient Boosting Classifier. Detailed Comprehensive data pre-processing techniques were applied like feature encoding, outlier analysis, and handling missing values are used to make sure the model Strength. The Gradient Boosting Regressor had the highest predictive accuracy of all the tested algorithms, with an R-Squared Score of 0.97. Logistic Regression came in second with an accuracy of 0.96. These trends can yield important insights that help educators and policymakers implement data-driven strategies that improve academic performance and student learning.

Keywords: Student Performance, Machine Learning, Gradient Boosting Regressor, Classification, Feature Importance, Data Pre-processing

ISBN: 978-81-991111-7-2 *10th October 2025*

Breast Cancer Detection with Artificial Intelligence Model on Logistic Regression

Mrs. Shilpa R N, Assistant Professor, Syed Hashim
Department of Artificial Intelligence & Machine Learning, GM University, Davanagere.

Abstract

One of the most common and deadly illnesses affecting women worldwide is breast cancer. The stage of cancer detection has a major impact on therapy efficacy and patient survival rates. Even while conventional diagnostic methods are useful, they frequently have drawbacks including subjectivity in interpretation and decision-making delays. Diagnostic solutions based on artificial intelligence are being investigated more and more for automatic and dependable detection in order to address these issues. This article shows a Logistic Regression model for determining whether breast cancers are benign or malignant that was created with Python's scikit-learn module. The model performs probability-based classification by using 30 diagnostic features. Logistic regression was chosen because of its effectiveness, interpretability, and robustness in binary classification applications. The efficiency, interpretability, and robustness of logistic regression in binary classification tasks led to its selection. With an accuracy of 98.25%, the experimental evaluation shows that the suggested model outperformed a number of baseline machine learning techniques. The findings demonstrate the promise of logistic regression as a low-tech, high-impact method for early breast cancer identification. By offering reliable, easily available, and data-driven diagnostic assistance, these AI-driven methods can help clinical procedures. The study also highlights how interpretable machine learning models can help close the knowledge gap between medical professionals and computer intelligence, which will eventually benefit clinicians and enhance patient outcomes.

Keywords: Artificial Intelligence (AI), Breast Tumor, Breast Cancer, Benign, Malignant, Accuracy, Logistic Regression

ISBN: 978-81-991111-7-2 *10th October 2025*

Patient Readmission Predictive Modelling Using Machine Learning Techniques

Ms. Rakshitha J N, Assistant Professor
Department of Artificial Intelligence & Machine Learning, GM University, Davanagere

Abstract

This paper aims to develop a machine learning-based predictive model for identifying patients at high risk of early hospital readmissions. The model uses data from electronic health records, patient demographics, and clinical history to predict readmission risk within a specific time period. This work demonstrates the potential of machine learning algorithms to predict early hospital readmissions and improve patient outcomes. The predictive model developed in this study can be incorporated into clinical decision support systems to help healthcare providers identify high-risk patients and develop targeted interventions to prevent relapse has saved them. The paper starts with data pre-processing and feature engineering, followed by machine learning algorithms including logistic regression, decision trees, random forests, recurrent neural networks (RNNs) and long-term and short-term memory and other deep learning models The training and (LSTM) network.

Keywords: Machine Learning, Hospital Readmission, Predictive Model, Clinical Decision Support, RNN, LSTM, Patient Outcomes

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Medicine Recommendation System

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Abstract

A Medicine Recommendation System using Machine Learning aims to provide personalized medication suggestions by analysing patient data, medical history, and symptoms. This system leverages various machine learning techniques, such as classification, clustering, and recommendation algorithms, to predict the most suitable medications for individuals. By incorporating patient-specific factors, including demographics, allergies, and concurrent medications, the system improves the accuracy and safety of medication recommendations. Through data driven insights, it can also identify potential drug interactions and suggest alternative treatments. This approach not only aids healthcare providers in decision-making but also enhances patient outcomes and optimizes healthcare resources by reducing the likelihood of adverse drug reactions and unnecessary prescriptions.

Keywords: medicine recommendation system, machine learning, personalized medication, patient data analysis, drug interaction detection

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IOT Based Smart Plant Growing and Caring Platform for Urban Environments

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Abstract

This paper explores the design, implementation, and performance evaluation of an innovative IoT enabled automatic plant growing and caring platform tailored for urban environments. The proposed system utilizes supervised and unsupervised machine learning algorithms to make decisions toward enhancing the growth and health of the plants on the platform with minimum human intervention. Increasing urbanization and busy lifestyles have led to increased interest in smart gardening solutions that optimize plant care and resource utilization. This research delves into the integration of IoT technologies and machine learning algorithms to address challenges faced with urban gardening and contribute to the ever-expanding body of literature on IoT applications for smart cities. The proposed platform comprises multiple sensors placed to collect vital parameters such as soil moisture, ambient temperature, and humidity. A simple camera collects images of the plants daily. The collected data is transmitted via Wi-Fi to an online database for storage and analysis. A machine learning algorithm analyses the collected environmental data to make informed decisions such as predicting the optimal watering schedule. A pump integrated into the platform is activated based on the schedule generated by the algorithm. The schedule prediction is based on plant species and real-time environmental data. Also, an unsupervised algorithm is used to determine the health status of the plants. The images taken daily are analyzed by the unsupervised algorithm to detect simple abnormalities in the plants to alert the owners to attend to the issues. The system was able to monitor the vital parameters and care for the plants independently.

Keywords: IoT, Machine Learning, Raspberry-pi, Smart Farming, Automation

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H5n1 disease stage prediction with data visualization using python

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Abstract

The timely preliminary assessment of infectious diseases such as the Avian Influenza A (H5N1) virus is critical for effective public health management and patient intervention. This paper details the design and implementation of a desktop-based Expert System for the prediction of H5N1 disease stages based on patient symptom data. The system is developed using Python with a Tkinter Graphical User Interface (GUI) and utilizes a MySQL database for robust data management. In contrast to modern machine learning models that learn patterns from data, this system operates on a predefined knowledge base consisting of a set of deterministic, symptom-based rules derived from established clinical indicators. The application provides a user-friendly workflow, allowing a user to import patient data from a CSV file, which is then processed by a rule-based inference engine. This engine classifies each case into predefined categories, such as "Virus is at 1st Stage," "Virus is At Beginning Stage," or "No Virus." The system architecture, data flow, and the core rule-based logic are described in detail. Furthermore, the system integrates data visualization capabilities, dynamically generating bar charts and pie charts to provide an analytical overview of the predicted outcomes across different patient demographics, such as age groups. This work demonstrates the development of a practical and rapidly deployable decision-support tool capable of automating preliminary clinical screening based on codified expert knowledge.

Keywords: Expert System, Rule-Based System, H5N1, Disease Prediction, Clinical Decision Support, Tkinter, Data Visualization, MySQL

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A Layered Security Framework for IoT Workflow Applications in Edge-Cloud Environments

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Abstract

The Internet of Things (IoT) is rapidly expanding with billions of connected devices generating massive amounts of data. While cloud-based processing offers powerful analytical capabilities, it also raises concerns about latency, privacy, and security risks. Edge computing mitigates some of these concerns by processing data closer to its source, but it brings new security challenges. This paper proposes a layered security framework for IoT workflow applications in edge-cloud environments. The framework encompasses multiple layers of the IoT architecture—device, edge, and cloud—and incorporates cross-layer mechanisms to ensure comprehensive protection. The framework aims to provide a flexible and scalable solution that enhances the security of IoT workflow applications.

Keywords: IoT, Edge Computing, Cloud Computing, Security, Intrusion Detection, Layered Framework

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Prediction of silkworm cocoon shell weight quality using Artificial Intelligence Model

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Abstract

Sericulture, a vital domain within agriculture, holds immense significance in silk production. This project focuses on leveraging machine learning algorithms to predict cocoon shell weight and quality, crucial factors in determining silk yield and overall cocoon health. The project integrates the YOLO algorithm to assess cocoon state based on dimensions, distinguishing between healthy and unhealthy specimens. Subsequently, the Convolutional Neural Network (CNN) algorithm is employed to delve deeper into cocoon attributes, providing comprehensive insights. The anticipated outcomes not only aid in gauging cocoon health but also facilitate governmental subsidies to farmers, incentivizing quality cultivation. Ultimately, the project aims to predict the final cocoon health status, correlating it with government subsidies and silk yield, thereby optimizing sericulture practices.

Keywords: Sericulture, cocoon, quality, YOLO (algorithm), CNN (algorithm), Silk Yields, government subsidies

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Transforming Healthcare Service Quality through Advanced Deep Learning Models

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Abstract

The increasing complexity of modern industries, including aerospace, manufacturing, and healthcare, has underscored the critical need for advanced system health management strategies. Within healthcare, deep learning (DL) has gained unprecedented momentum over the past decade as a powerful paradigm for biomedical data analysis and clinical decision support. Distinguished by its multi-layered neural architectures, DL has demonstrated a superior capacity for automatic feature extraction and representation learning, frequently outperforming conventional methodologies and even expert-driven analyses in identifying clinically significant patterns. By leveraging large-scale medical datasets, DL algorithms can detect disease-specific indicators, thereby enhance diagnostic precision and reduce the likelihood of human error. Moreover, their application to Electronic Health Records (EHRs) has enabled the efficient extraction, classification, and interpretation of relevant clinical information, offering tangible advancements in data-driven healthcare delivery. Collectively, these developments position DL as a pivotal enabler of next-generation intelligent healthcare systems.

Keywords: Healthcare, Deep Learning, Machine Learning, Big Data, Medical Imaging, Electronic Health Records (EHRs), Biomedical, ECG, EEG, Artificial Intelligence Systems, Neural Network

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Decentralized Secure Gate Pass Management Framework Using Block chain, Smart Contracts, and Web3 for Enhanced Transparency and Security for GMU Campus

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Abstract

The increasing demand for secure and transparent access control systems in academic institutions has highlighted the limitations of traditional gate pass mechanisms, which are often prone to forgery, delays, and inefficiencies. This project proposes a Decentralized Secure Gate Pass Management Framework for GMU Campus, leveraging Blockchain, Web3, and Smart Contracts to ensure tamper-proof, automated, and transparent authorization. The system integrates IPFS for secure document storage, while smart contracts handle pass creation, approval, and verification across multiple stakeholders such as students, parents, wardens, and authorities. By eliminating central points of failure and enabling real-time validation, the framework enhances security, reduces manual intervention, and fosters trust among stakeholders. The solution demonstrates how decentralized technologies can be effectively applied to campus management systems, paving the way for scalable, efficient, and future-ready digital infrastructures.

Keywords: Block chain, Web3, Smart Contracts, Tamper-proof records, Access Control, User-Centric Security, Transparency, Authentication

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Farmers Market: A Comprehensive Digital Ecosystem Empowering Direct Crop and Dairy Commerce

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Abstract

Persistent inefficiencies and systemic inequities within agricultural marketing continue to impede rural prosperity and economic security for the world's smallholder farmers. The overreliance on conventional supply chains, characterized by multi-tier intermediaries and lack of transparent market information, erodes both profitability and autonomy among primary producers. In response, this paper presents the Farmers Market platform—an innovative, comprehensive digital ecosystem designed to enable direct crop and dairy commerce between agrarian producers and diverse buyer segments. Key features include secure bi-directional communication channels, AI-driven advisory modules with photo-based diagnostics, algorithmic market outreach, and a multilingual voice assistant that bridges digital literacy gaps. The platform is uniquely integrated with government welfare interfaces and incentive mechanisms to promote the adoption of sustainable, organic agro-practices. Empirical pilot deployments demonstrate measurable improvements in transaction efficiency, farmer price realization, knowledge dissemination, and welfare scheme uptake. Comparative analyses with global digital marketplaces underline the platform's distinct farmer-centric and policy-compliant architecture. The paper concludes by advocating for a modular, synergistic framework to unlock the socio-economic potential of data-driven agriculture on a global scale.

Keywords: Agritech platforms, Smallholder livelihood, Agricultural digitalization, Direct market access, Multilingual voice interaction, AI-based crop advisory, Supply chain transparency, Farmer empowerment, Sustainable organic practices

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Emotion Detection Using Brain Signals

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Abstract

Detecting emotions from brain signals is a growing research field that combines neuroscience, machine learning, and artificial intelligence. Unlike traditional emotion recognition methods that rely on facial expressions or speech, electroencephalography (EEG) provides a direct, non-invasive way to capture brain activity linked to emotional states. This study explores EEG-based emotion detection using deep learning methods, with a focus on advanced models such as Graph Convolutional Neural Networks (GCNNs). Publicly available datasets such as SEED, DEAP, and DREAMER are employed to train models that classify emotions into categories such as happy, sad, angry, and neutral. The research highlights potential applications in healthcare, education, human–computer interaction, and mental health monitoring, while also addressing limitations such as dataset availability and ethical concerns.

Keywords: EEG, Emotion Detection, Deep Learning, GCNN, Brain Signals

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A Student-Built Local Storage Server for Digital Independence

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Abstract

The rapid pace of technological advancement in educational institutions results in a significant amount of electronic waste (e-waste), as computers and laptops are frequently decommissioned for being "laggy" or obsolete. This paper challenges the notion of such hardware being useless and presents a practical application of Resource Engineering principles to achieve zero technological waste. We demonstrate the successful conversion of a discarded HP Pavilion dv3 laptop, equipped with just 2GB of RAM, into a fully functional local storage server using the open-source OpenMediaVault 7 (OMV 7) platform. The resultant server provides reliable network-attached storage (NAS), enhancing data security and promoting Digital Independence from third-party cloud services. This project serves as a tangible model for student-led innovation, showcasing how legacy hardware can be upcycled into valuable assets, directly aligning with the national goals of Swadesh and Atmanirbhar Bharat (Self-reliant India).

Keywords: Local Storage Server, OpenMediaVault (OMV), E-waste Upcycling, Resource Engineering, Digital Independence, Atmanirbhar Bharat, Low-cost Server, Network Attached Storage (NAS)

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Electronic Component Detection System

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Abstract

This project presents "Smart Object Identifier" a mobile application developed with Flutter and deployed using tensor Flow Lite to perform real-time object detection on commodity smartphones. The application supports two specialized detection models: Model-A for general real-world objects recognition and Model-B for electronic component identification. We describe dataset preparation, model selection and training, conversion to the TFLite format (with optimization and quantization), and the integration details for the Flutter frontend. Experimental results on field tests show the model achieves competitive inference latency suitable for live camera input while maintaining strong per-class detection accuracy after on-device calibration. The paper discusses system architecture, evaluation metrics (mAP, precision, recall, FPS), and limitations related to occlusion and lighting. Finally, we outline future improvements including on-device incremental learning, multi-model fusion, and support for edge accelerators.

Keywords: tensor Flow Lite, Flutter, object detection, on-device ML, Electronic component recognition, model quantization

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EduBridge AI: An AI-Powered Web Platform for SSLC Students

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Abstract

EduBridge AI introduces an innovative approach to enhancing secondary education for SSLC students through the integration of Artificial Intelligence (AI) and web technologies. Traditional learning methods often lack personalization, real-time project guidance, and multilingual support, limiting student outcomes in state syllabus contexts. EduBridge AI addresses these limitations by providing a web-based platform that combines AI-driven chatbots, project guidance modules, performance tracking systems, and interactive quizzes. This system enables real-time doubt resolution, teacher-student collaboration, and syllabus-aligned project support. Unlike conventional e-learning tools, The platform integrates a novel modular architecture leveraging FastAPI and dedicated AI APIs for robust, scalable SSLC curriculum support and multilingual instruction. The platform was developed using ReactJS (frontend), FastAPI (backend), MySQL (database), and integrated AI APIs for chatbot support. Testing of the prototype demonstrated functional performance across authentication, subject management, performance tracking, quizzes, and project guidance modules. Overall, EduBridge AI represents a significant step towards personalized, AI-enabled learning for state syllabus students, bridging the gap between conventional classroom teaching and next-generation intelligent tutoring systems.

Keywords: EduBridge AI, Personalized Learning, AI Chatbot, Project Guidance, SSLC Students, Multilingual Education, Web Platform

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Traffic Sign Classification Using Deep Learning

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Abstract

Traffic Sign Classification Using Deep Learning aims to accurately identify and categorize traffic signs from images, a critical task for autonomous driving and traffic management systems. Deep learning models, especially convolutional neural networks (CNNs), excel in extracting visual features, enabling high accuracy in recognizing diverse and complex sign patterns. By leveraging large datasets and advanced training techniques, these models achieve robust performance in real-world scenarios, handling variations in lighting, perspective, and occlusions. This approach significantly improves the efficiency and safety of automated systems, making it a cornerstone in modern intelligent transportation systems. Advanced architectures such as convolutional neural networks (CNNs) and transfer learning techniques enable models to generalize across diverse datasets, ensuring robust performance in real-world conditions. These methods efficiently handle challenges like sign occlusion, weather conditions, and image distortions. By integrating deep learning into autonomous systems, traffic sign recognition achieves remarkable accuracy, paving the way for safer and smarter transportation networks.

Keywords: CNN, Deep Learning, Transfer Learning, Image Processing

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Information Retrieval System Using Gen-AI

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Abstract

The AI-powered Information Retrieval System integrates Generative AI with retrieval-augmented techniques to enhance question-answering from PDF documents. Leveraging the Google Gemini API, the system extracts, cleans, and segments text from uploaded PDFs, converting them into vector embeddings stored in a FAISS-based database. When users submit queries, the system performs a similarity search to retrieve relevant text chunks; ensuring responses are both accurate and contextually meaningful. Additionally, source references are displayed to enhance transparency and user trust. This solution streamlines document-based information retrieval, making it highly effective for domains like academic research, legal documentation, and corporate knowledge management. By combining advanced AI-driven reasoning with precise text retrieval, the system delivers intelligent responses while maintaining credibility. Continuous improvements aim to further optimize accuracy, efficiency, and accessibility for users interacting with large-scale text data.

Keywords: AI-powered Information Retrieval, Generative AI, Retrieval-Augmented Generation, PDF Question-Answering, FAISS, Vector Embeddings, Knowledge Management

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Headcount Detection Using YOLO V10

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Abstract

Headcount detection is vital for applications such as public safety, crowd management, education, and retail analytics. Traditional manual and sensor-based methods are often inaccurate and inefficient, especially in dense or dynamic environments. This project implements a headcount detection system using YOLO v10, a state-of-the-art deep learning model known for its speed and accuracy. The system is trained with annotated datasets and fine-tuned using transfer learning to detect and count human heads in real time. Results show that YOLO v10 provides reliable performance under varying conditions, making it suitable for scalable, real-world applications, though challenges remain in extremely dense crowds, low-light settings, and high computational requirements.

Keywords: Headcount Detection, YOLO v10, Deep Learning, Object Detection, Computer Vision

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Personalized Health Recommendation System

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Abstract

The Personalized Health Recommendation System combines machine learning (ML) and artificial intelligence (AI) to deliver tailored health insights based on individual user data. By analyzing parameters such as age, weight, height, lifestyle habits, and medical history, the system predicts potential health risks and provides actionable recommendations in areas such as sleep, diet, exercise, and weight management. A trained ML model categorizes users into health risk levels, while an AI-driven recommendation engine generates personalized advice using natural language processing. Implemented as a Flask-based web application, the system provides an intuitive interface for users to input data, view predictions, and receive customized suggestions. This project promotes proactive health management and empowers individuals to make informed decisions for improved well-being. Future work includes integrating real-time data from wearable devices and extending coverage to mental health and chronic disease management.

Keywords: Personalized healthcare, machine learning, artificial intelligence, health recommendation, preventive healthcare, web application

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AI Chatbot based Chest X - ray Analysis

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Abstract

The advancement of convolutional neural networks (CNNs) has significantly enhanced computer-aided diagnostic (CAD) systems for medical imaging. In chest X-ray analysis, critical features such as texture and tissue structure are essential for accurate disease detection. To improve performance, recent approaches utilize large input images combined with deep CNN architectures. However, thoracic diseases exhibit variable sizes, requiring models capable of capturing multi-scale features without excessive computational cost. This paper presents an AI Chabot system for automated chest X-ray analysis focusing on tuberculosis (TB) and pneumonia detection. Our system employs a ResNet-50 backbone trained on both DICOM and non-DICOM images, enabling flexible clinical application. The Chabot interface facilitates user-friendly interaction, allowing clinicians to obtain rapid diagnostic support through natural language queries. We train and evaluate the model on a custom dataset with stratified splits and apply data augmentation to improve generalization. Our results demonstrate high accuracy (98.0%), AUC (0.9986), precision (0.9936), and recall (0.9657) on the test set, confirming the model's robustness in distinguishing TB from normal cases. This approach offers an efficient, scalable, and accessible tool for aiding diagnosis in resource-constrained settings, reducing the workload on radiologists while improving early disease detection.

Keywords: Chest X-ray analysis, tuberculosis, pneumonia, ResNet-50, deep learning, AI chatbot, computer-aided diagnosis, CAD, medical image processing

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Predictive Triage and Proactive Scheduling: A Novel Health Informatics Paradigm for Closing the Diagnostic Gap in Underserved Regions

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Abstract

A significant challenge in modern healthcare is the fragmented journey patients face, particularly in non-metropolitan (Tier 3) cities where specialist access is limited. This paper introduces Cure Queue, an integrated health informatics platform that establishes a novel paradigm we term "Predictive Triage." Our system architecturally fuses a sophisticated, multi-disease predictive engine with a dynamic, priority-based scheduling module to create a seamless pathway from initial risk detection to final clinical diagnosis. The predictive engine leverages a suite of machine learning classifiers, rigorously trained and optimized to perform risk stratification for five critical conditions: heart disease, diabetes, kidney failure, liver cancer, and breast cancer. Upon identifying a high-risk individual through this engine, the system's proactive scheduling algorithm immediately intervenes, intelligently allocating and prioritizing specialist appointments. Our empirical results demonstrate that the Random Forest model consistently achieves state-of-the-art predictive accuracy, reaching up to ninety-eight percent for breast cancer detection. By bridging the critical gap between preliminary risk assessment and expert consultation, Cure Queue presents a full-fledged framework designed to democratize access to specialist care and manage the entire pre-clinical journey for underserved populations.

Keywords : Health Informatics, Predictive Triage, Cure Queue, Machine Learning, Clinical Decision Support, Dynamic Scheduling, Healthcare Equity, Tier 3 Cities, End-to-End Diagnosis.

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Loan Sphere: An AI-Driven Loan Management Portal for Enhanced Credit Risk Assessment and Operational Efficiency

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Abstract

This paper presents the design and on-going development of Loan Sphere, an AI-powered loan management portal that integrates ensemble machine learning algorithms with modern web technologies to enhance credit risk assessment and operational efficiency. The system employs a three-tier architecture utilizing React.js frontend, Node.js backend, and Mongo DB database with secure authentication and real-time processing capabilities. The platform incorporates automated workflows, AI-driven risk profiling using Logistic Regression, Gradient Boosting, and Soft Voting Ensemble approaches, real-time dashboards, and comprehensive security mechanisms. Preliminary development results demonstrate successful integration of machine learning models with web-based interfaces, achieving 64% overall accuracy with 78% precision for high-risk borrower identification. The work contributes to advancing digital transformation in financial services through intelligent workflow automation and data-driven decision-making capabilities.

Keywords: Credit Risk Assessment, Machine Learning, Loan Management Systems, Ensemble Learning, Financial Technology, Automated Decision Making, Risk Profiling, Digital Banking

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An Integrated Framework for Crypto currency Trading Using AI-Based Prediction and Automated Real-Time Technical Analysis

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Abstract

The crypto currency market's high volatility and 24/7 operation present significant challenges for manual trading, which is often inefficient, prone to emotional bias, and time-consuming. This paper presents an integrated, automated system designed to empower traders with data-driven insights. The system combines a predictive deep learning model with a real-time technical analysis engine. Phase 1 involves the development of a Long Short-Term Memory (LSTM) neural network, trained on historical Bit coin (BTC) data to forecast future price movements. Phase 2 consists of an automated workflow, built on the n8n.io platform that fetches live market data, calculates a suite of key technical indicators across multiple timeframes, and generates actionable trading signals. The final, consolidated report, featuring both predictive insights and immediate technical analysis, is delivered directly to the user via a Telegram bot. This dual-pronged approach provides a powerful tool that mitigates the challenges of manual trading by offering timely, objective, and comprehensive market analysis.

***Keywords**:* Crypto currency, Algorithmic Trading, Deep Learning, LSTM, Technical Analysis, Time-Series Forecasting, n8n

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Block Estate 360: AI-Powered Smart Real Estate Tracking & Secure Transactions on Block chain

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Abstract

Real estate industry is transforming rapidly with the adoption of Artificial Intelligence (AI) and Block chain technologies. This paper presents Block Estate 360, a comprehensive platform that integrates AI-driven price prediction, secure block chain transactions, and digital signature-based property registration. The proposed system enhances transparency, reduces fraud, and simplifies property registration by automating core real estate processes. AI models analyse market trends to predict fair property prices, while block chain ensures secure, immutable, and tamper-proof transactions. This hybrid approach provides a direct, peer-to-peer (P2P) method for property transfer, significantly reducing the reliance on traditional intermediaries. This paper details the architecture, methodology, and advantages of implementing such a hybrid system for the modern property market.

Keywords: Block chain, Artificial Intelligence, Real Estate, Price Prediction, Smart Contracts, Digital Signature

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AI-Powered Detection and Classification of Diabetic Retinopathy Using Deep Learning Algorithms

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Abstract

Diabetic Retinopathy (DR) is one of the most common complications of diabetes and a major cause of vision impairment worldwide. It progresses through five stages: no DR, mild non-proliferative DR (NPDR), moderate NPDR, severe NPDR, and proliferative DR (PDR). Early detection and accurate diagnosis are crucial for timely intervention; however, traditional screening is manual, time-consuming, and subject to inter-observer variability. This work proposes an AI-powered system that leverages deep learning and transfer learning with Convolutional Neural Networks (CNNs) to automatically detect and classify the five stages of DR from retinal fundus images. Pre-processing and augmentation techniques, including image resizing, contrast enhancement, rotation, and flipping, are applied to improve robustness and handle class imbalance. Models such as DenseNet-169 and Alex Net are trained and evaluated using performance metrics including accuracy, precision, recall, F1-score, and confusion matrix. The developed framework further integrates with a user-friendly interface that allows clinicians and patients to upload retinal images for real-time predictions. The expected outcome is a deployable diagnostic tool that reduces diagnostic time, enhances screening accessibility in underserved regions, and contributes to global efforts in preventing diabetes-related blindness.

***Keywords**:* Diabetic Retinopathy, Deep Learning, Convolutional Neural Networks, Transfer Learning, Fundus Imaging, Medical Image Analysis, AI-based Diagnosis, Healthcare Technology

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Glucoband-Link: Doctor Connected 5G Wearable for Smart Diabetes Management

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Abstract

This paper presents Glucoband-Link, a next-generation non-invasive diabetes monitoring system that integrates a wearable smart watch with 5G connectivity and artificial intelligence for real-time health management. The system enables continuous glucose monitoring using optical and bio sensing technologies, data transmission through 5G-enabled ESP32 modules, and automated doctor connectivity for smart decision support. The proposed design bridges the gap between patients and healthcare professionals, enabling predictive diabetes management and remote treatment optimization. Unlike conventional invasive glucose meters, Glucoband-Link employs non-invasive sensing principles such as near-infrared spectroscopy (NIR) and photoplethysmography (PPG) to estimate blood glucose levels through skin interaction. The data is pre-processed on-device and securely transmitted via 5G for cloud-based AI analytics. The AI model performs trend prediction, anomaly detection, and generates personalized health insights for each user. Doctors receive real-time notifications through a connected dashboard, allowing for early diagnosis and adaptive treatment plans. The system further emphasizes low power consumption, compact form factor, and seamless user experience through an intuitive mobile interface. Experimental validation and simulated results demonstrate high prediction accuracy and reduced communication latency compared to traditional wireless wearable's. Overall, Glucoband-Link represents a significant step toward intelligent, doctor-connected diabetes management using next-generation IoT and AI technologies.

Keywords: Non-invasive glucose monitoring, smart watch, 5G, IoT in healthcare, ESP32, Artificial Intelligence, Remote doctor connectivity

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Ai based smart contract generator using Block chain in digital banking

Ms. Ranjitha D S, M Manu, H Kavana, Brunda Gowda J J, M Chandana Talya
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Abstract

Digital banking requires secure, efficient, and automated transaction processes. This paper presents an AI-based smart contract generator integrated with block chain technology to automate the creation, validation, and deployment of financial contracts. The system leverages artificial intelligence to customize contracts based on user requirements, while block chain ensures immutability, transparency, and security. The proposed approach reduces manual intervention, minimizes errors, and accelerates transaction processing. Applications include loan agreements, payment processing, and automated settlements, demonstrating a robust framework for next-generation digital banking solutions.

Keywords: Artificial Intelligence, Block chain Technology, Smart Contract, Solidity, Ethereum

Attendance

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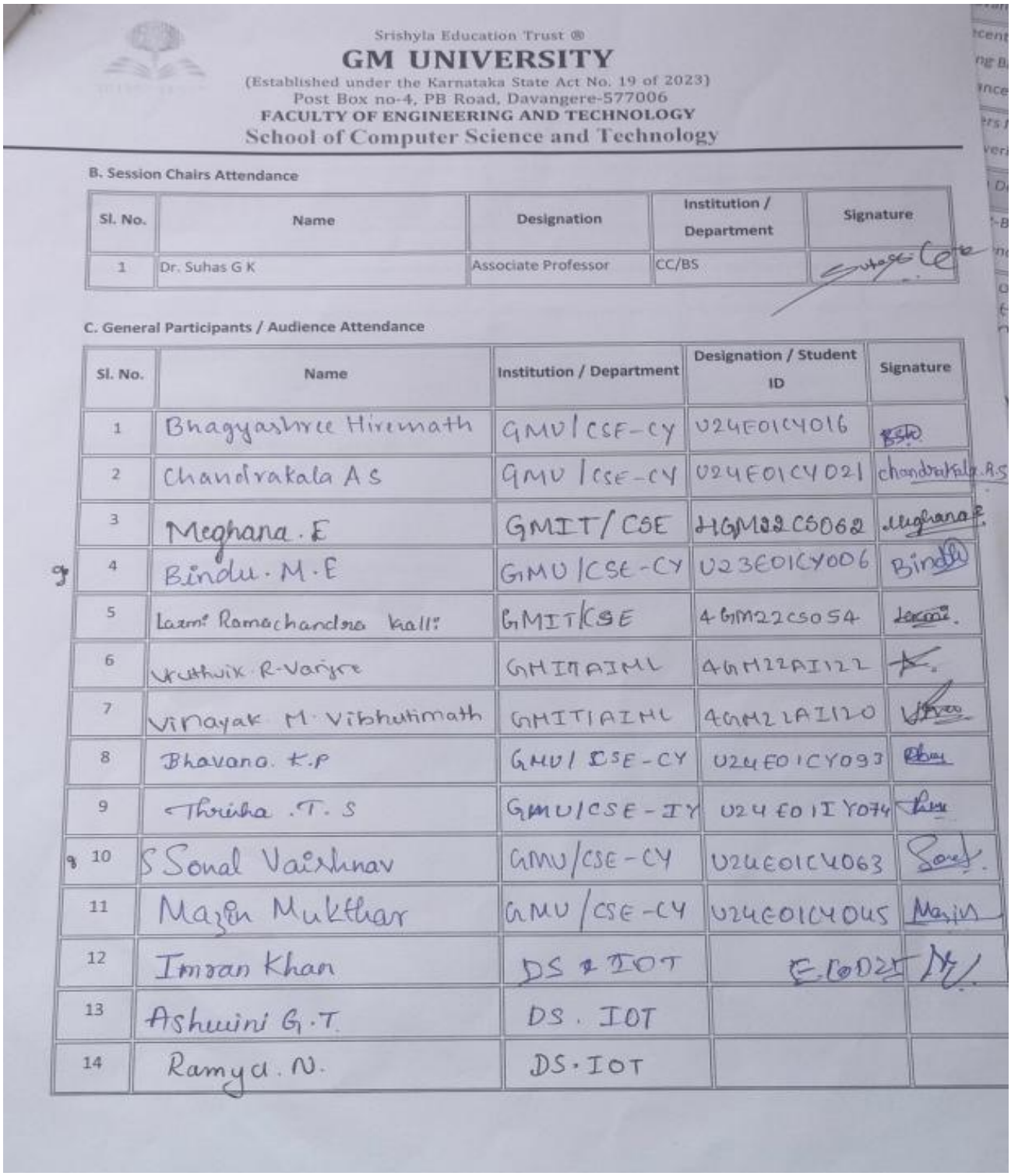
Session Attendance Sheet

Session: Session-2
Department: CC/BS
Venue: Biotech Seminar Hall
Date: 10/10/2025
Session Chair: Dr. Suhas G K
Session Coordinator: Ramya M S

A. Presenter Attendance

Sl. No.	Paper Code	Presenter Name	Institution / Department	Time of Presentation	Signature
1	NC-06	Apoorva P Rao	GMU / CSE-CY	2:01	APao
2	NC-25	Kruthika.P	GMIT / CSE	4:22	Kruthika.P
3	NC-04	Shasmila.P	GMU / CSE-IY	2:57	Shasmila.P
4	NC-11	Deepa.A	GMIT / CSE	4:31	Deepa.A
5	NC-35	Vruthik.R.Vanjre	GMIT / AIML	3:59	
6	NC-35	Kiran Sindagi	GMU / AIML	3:59	
7	NC-09	Syed Hasim	GMU / AIML	3:16	
8	NC-09	Vaibhav.K	GMU / AIML	3:16	
9	NC-27	Rahul.D.N	GMU / BS	3:27	
10	NC-27	Shreyas.M.P	GMU / CC	3:27	
11	NC-03	Pranav S	GMU / CSE-CY	2:41	
12	NC-02	Uma Mahesh L	GMU / CC	2:30	
13	NC-02	SAHITHYA SURESH	GMU / CS-BS	2:30	
14	NC-15	Nithin JN	GMIT / Robotics & automation	4:07	
15	NC-08	Vinayak.M.V	GMITS AIML	4:15	
16	NC-05	AKKamahadevi	GMU / CSE-IY	3:07	
17	NC 05	Sahana K J	GMU / CSE-CY	3:07	

Attendance



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School of Computer Science and Technology

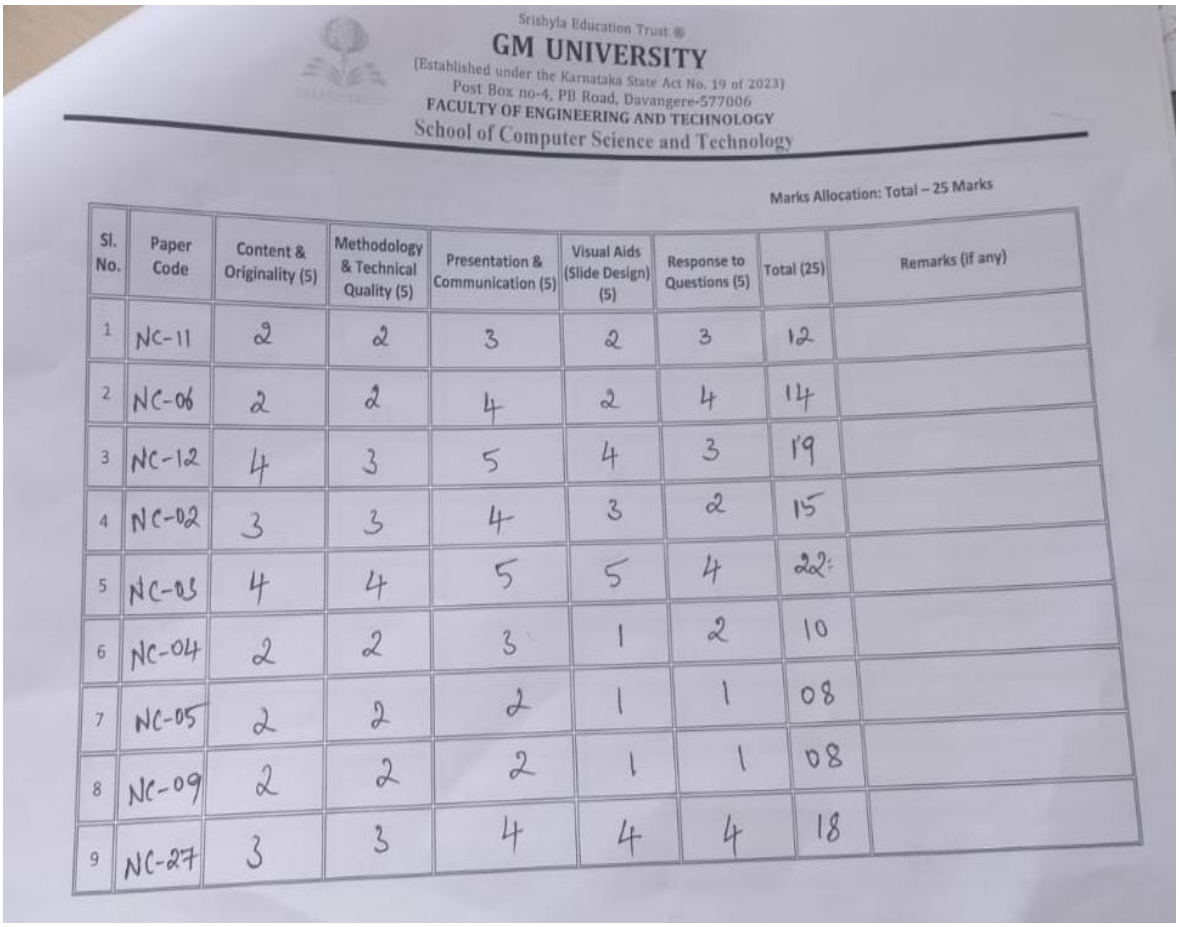
B. Session Chairs Attendance

Sl. No.	Name	Designation	Institution / Department	Signature
1	Dr. Suhas G K	Associate Professor	CC/BS	

C. General Participants / Audience Attendance

Sl. No.	Name	Institution / Department	Designation / Student ID	Signature
1	Bhagyashree Hiremath	GMU/CSE-CY	U24E01CY016	
2	Chandrakala A S	GMU/CSE-CY	U24E01CY021	
3	Meghana. E	GMIT/CSE	4GM22CS062	
4	Bindu. M. E	GMU/CSE-CY	U23E01CY006	
5	Laxmi Ramachandra Kalli	GMIT/CSE	4GM22CS054	
6	Vruthvik R Vaijre	GMIT/AIML	4GM22AI122	
7	Vinayak M Vibhutimath	GMIT/AIML	4GM21AI120	
8	Bhavana. K.P	GMU/CSE-CY	U24E01CY093	
9	Thrisha .T. S	GMU/CSE-IY	U24E01IY074	
10	S Sonal Vaishnav	GMU/CSE-CY	U24E01CY063	
11	Mazin Mukthar	GMU/CSE-CY	U24E01CY045	
12	Imran Khan	DS & IOT	E.C0025	
13	Ashwini G.T	DS. IOT		
14	Ramya. N.	DS. IOT		

Evaluation sheet



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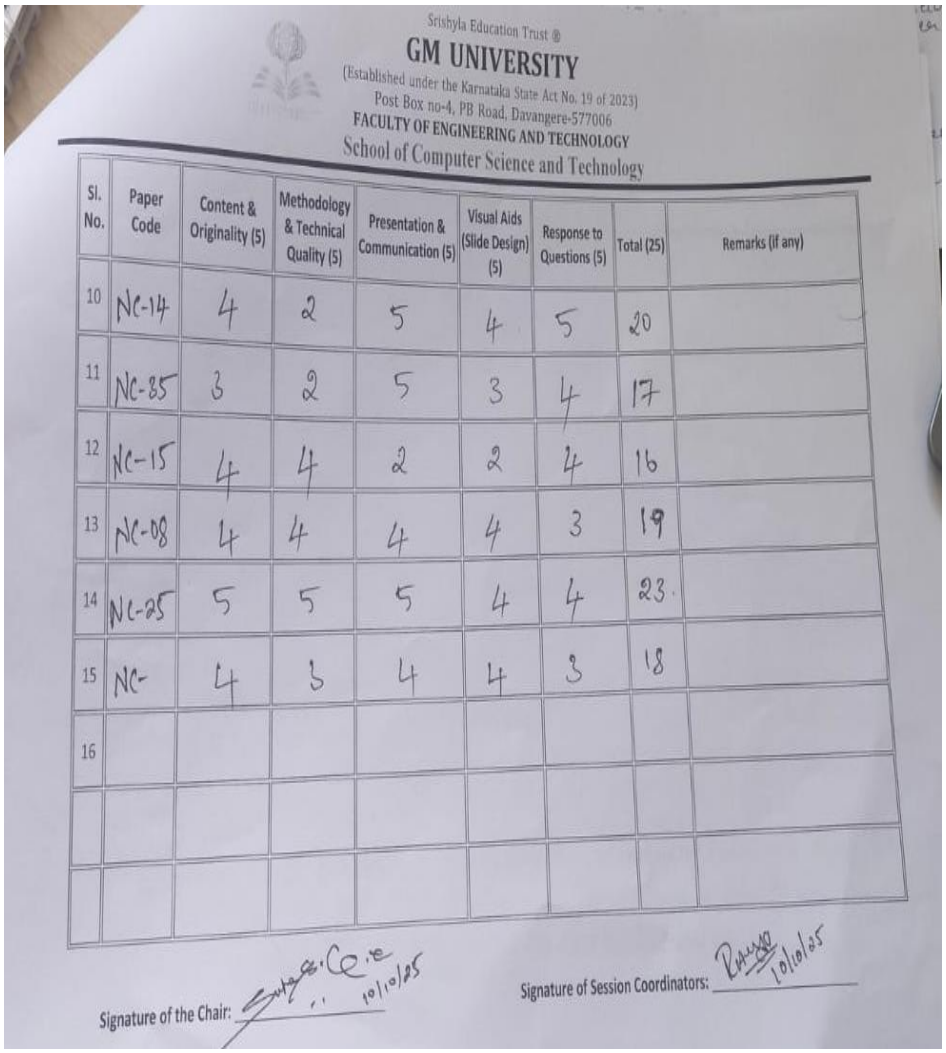
Marks Allocation: Total – 25 Marks

Sl. No.	Paper Code	Content & Originality (5)	Methodology & Technical Quality (5)	Presentation & Communication (5)	Visual Aids (Slide Design) (5)	Response to Questions (5)	Total (25)	Remarks (if any)
1	NC-11	2	2	3	2	3	12	
2	NC-06	2	2	4	2	4	14	
3	NC-12	4	3	5	4	3	19	
4	NC-02	3	3	4	3	2	15	
5	NC-03	4	4	5	5	4	22	
6	NC-04	2	2	3	1	2	10	
7	NC-05	2	2	2	1	1	08	
8	NC-09	2	2	2	1	1	08	
9	NC-27	3	3	4	4	4	18	

Evaluation sheet



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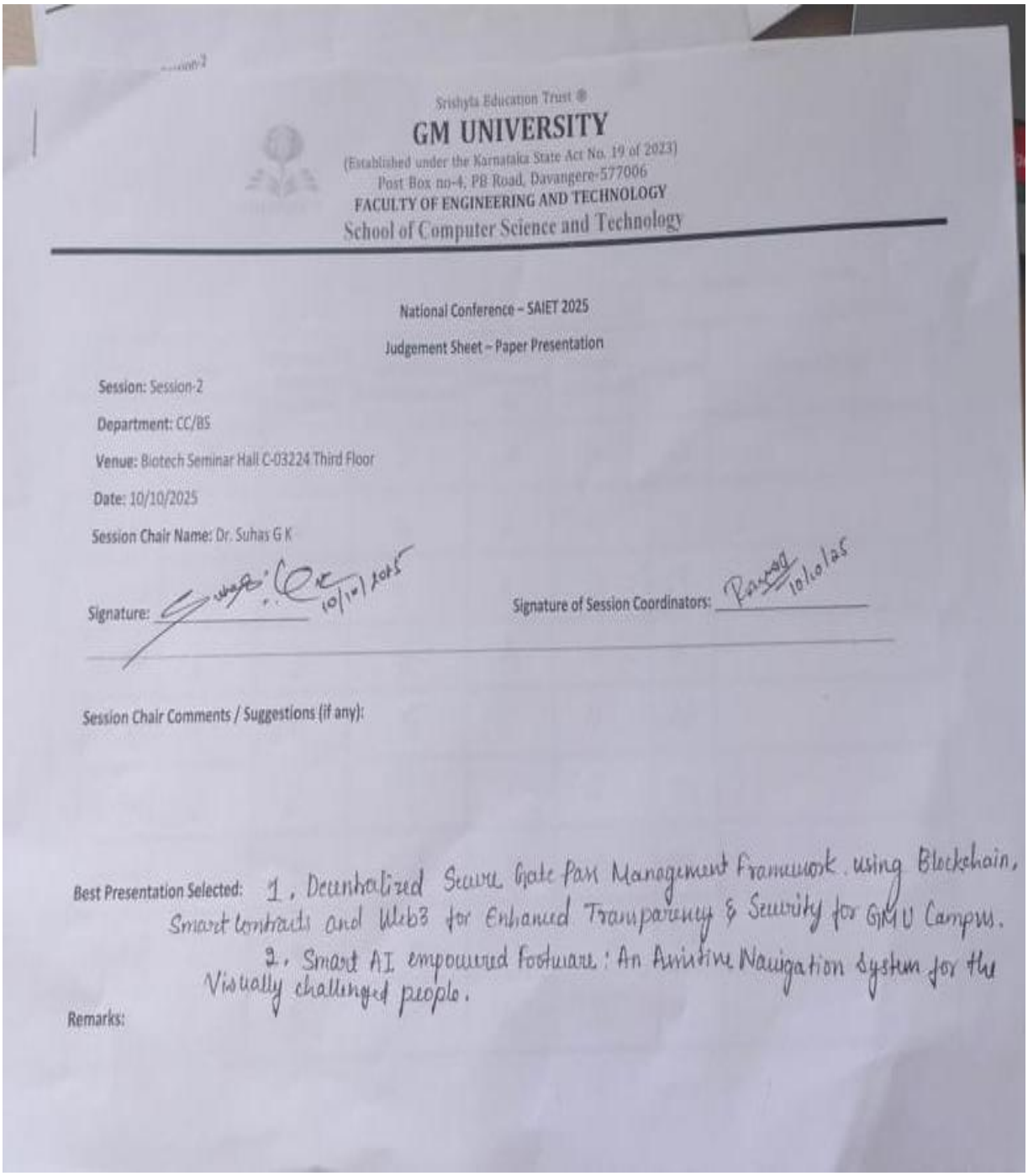
Sl. No.	Paper Code	Content & Originality (5)	Methodology & Technical Quality (5)	Presentation & Communication (5)	Visual Aids (Slide Design) (5)	Response to Questions (5)	Total (25)	Remarks (if any)
10	NC-14	4	2	5	4	5	20	
11	NC-85	3	2	5	3	4	17	
12	NC-15	4	4	2	2	4	16	
13	NC-08	4	4	4	4	3	19	
14	NC-25	5	5	5	4	4	23	
15	NC-	4	3	4	4	3	18	
16								

Signature of the Chair: 10/10/25

Signature of Session Coordinators: 10/10/25

Judgement sheet



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FACULTY OF ENGINEERING AND TECHNOLOGY

School of Computer Science and Technology

National Conference – SAIET 2025

Judgement Sheet – Paper Presentation

Session: Session-2

Department: CC/BS

Venue: Biotech Seminar Hall C-03224 Third Floor

Date: 10/10/2025

Session Chair Name: Dr. Suhas G K

Signature: 10/10/2025 Signature of Session Coordinators: 10.10.25

Session Chair Comments / Suggestions (if any):

Best Presentation Selected: 1. Decentralized Secure Gate Pass Management Framework using Blockchain, Smart Contracts and Web3 for Enhanced Transparency & Security for GMU Campus.

2. Smart AI empowered Footwear: An Assistive Navigation System for the Visually challenged people.

Remarks:

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School of Computer Science and Technology

SAIET 2025 - National Conference – Expenditure and Collection Summary

Amount Collected from Department Coordinators

Department	Category	No. of Papers/Posters	Amount Collected (₹)	Transaction ID
CSE	Paper Registration	12	6,000	T25101515121450314369
AIML	Paper Registration	11	4150	565432055461
CY / IY	Paper Registration	5	2650	390784259549
CY / IY	Poster Registration	1	650	692299804896
CC / BC	Paper Registration	3	1500	T25101516194706684462
CC / BC	Poster Registration	11	3650	T2510151620593582374
AIML	Poster Registration	3	1050	565465353699
AIML(QR Code)	Poster presentation	1	350	T25100913201373067880
CC-BC(QR code)	Paper Registration	1	350+150	9740662608-153890 8618625626-424145
Total Amount Collected			**₹ 20500**	

Expenditure Details

Sl. No.	Particulars	Quantity	Amount (₹)
1	Participation Certificates	50 Nos	700
2	Proceedings Printout (10 Copies)	10 Nos	2,650
3	Proceedings Spiral Binding	—	300
4	Final Proceedings Binding	3 Nos @ ₹375 each	1125
5	Petrol Charges to Attender	—	200
Total Expenditure			**₹4975**

Report Summary

The **National Conference on Smart Systems, Artificial Intelligence and Emerging Technologies (SAIET 2025)**, **Organized by the School of Computer Science and Technology, GM University, Davanagere**, was successfully inaugurated on **10th October 2025**.

The inaugural session featured insightful **keynote addresses**:

Keynote Address : *Dr. Pavan kumar C*, Professor,CSE Department, IIT, Dharwad

The conference received an excellent response with **32 papers presented in School of Computer Science and Technology.**

SAIET 2025 provided a platform that unites academic researchers, industry professionals, and young scholars to share knowledge, innovations, and advancements in the fields of smart systems and AI-driven emerging technologies. This conference highlighted interdisciplinary applications, cutting-edge research, and future trends in technology related to computer science & engineering.


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FACULTY OF ENGINEERING AND TECHNOLOGY
SCHOOL OF COMPUTER SCIENCE AND TECHNOLOGY
WELCOME TO ALL FOR THE
INAUGURATION OF
National Conference on "Smart
Systems, Artificial Intelligence &
Emerging Technologies"


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