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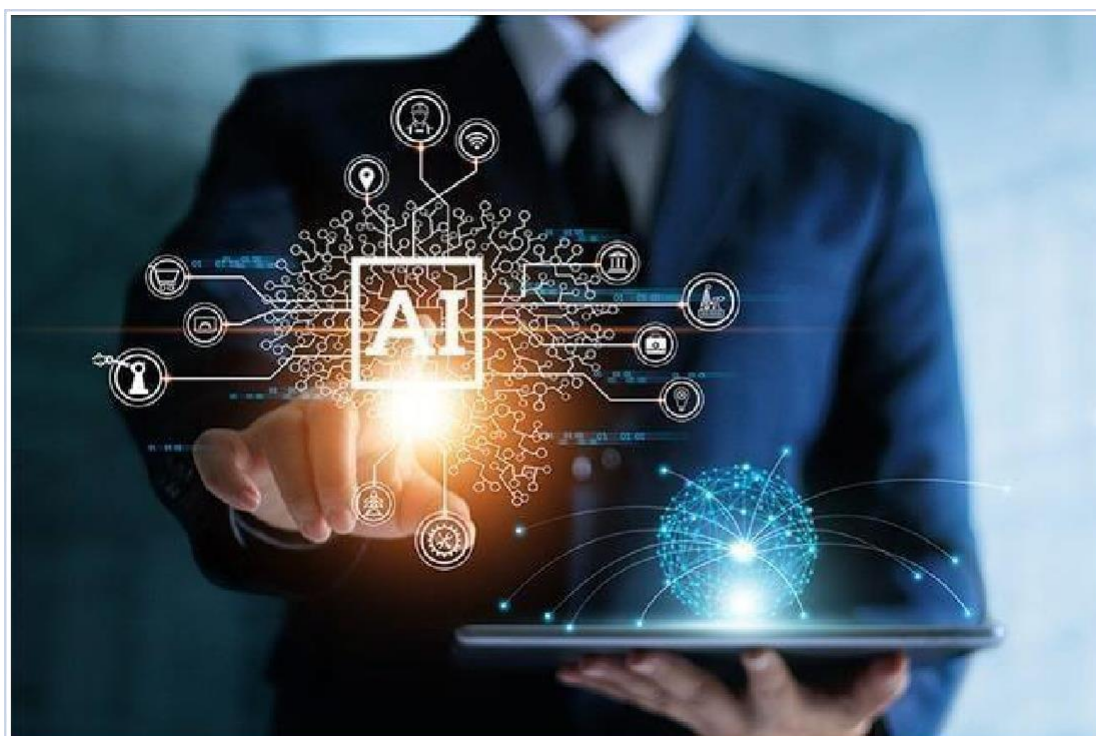
AN AUTONOMOUS INSTITUTION



DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

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ACADEMIC YEAR 2025-2026 [EVEN SEMESTER]

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Message from the Head of the Department

The Department of Artificial Intelligence and Data Science, established in 2022 at Akshaya College of Engineering and Technology, offers a four-year B.Tech. degree programme with an intake of 60 students. The department is striving towards the goal of providing innovative and quality education to students in order to achieve academic excellence, and is committed to equipping them with the knowledge and skills needed to excel in the rapidly evolving fields of Artificial Intelligence and Data Science, empowering them to become future leaders and innovators in the industry. The motto of the department is to deliver quality technical education that makes students industry-ready. Our goal is to ensure that our engineering graduates are well prepared to play the roles of problem solvers, project leaders, entrepreneurs, and above all, ethical citizens of a global society.



Dr. M. Jenifer

Associate Professor & Head,
Department of Artificial Intelligence and Data Science

Vision and Mission of the Department

Vision

To foster industry cooperation and impart cognitive learning in order to develop professionals who can adapt to the shifting demands of new trends in Artificial Intelligence and Data Science.

Mission

DM1: To provide excellent infrastructure that keeps up with modern trends and technologies for students and educators.

DM2: To impart knowledge in cutting-edge technology for Artificial Intelligence and Data Science with industrial standards.

DM3: To impart high-quality education embedded with moral and ethical principles.

DM4: To encourage lifelong learning and research that benefits society as a whole.

Programme Educational Objectives (PEOs)

PEO1: Apply the knowledge of basic sciences, mathematics, Artificial Intelligence, data science, and statistics to build systems that analyze large volumes of data.

PEO2: Design AI-based models to solve critical real-world problems (Product Development).

PEO3: Think logically, pursue life-long learning, and collaborate ethically in multidisciplinary teams (Higher Studies).

Programme Specific Outcomes (PSOs)

PSO1: Create, select, and apply the knowledge of AI and Data Science to solve societal problems.

PSO2: Develop data analytics and data visualization skills, along with knowledge acquisition, representation, and engineering skills, to coordinate complex projects.

Programme Outcomes (POs)

PO1 – Engineering knowledge: Apply mathematics, science, and engineering fundamentals to solve complex engineering problems.

PO2 – Problem analysis: Identify, formulate, and analyze complex engineering problems using first principles.

PO3 – Design/development of solutions: Design solutions that meet specified needs with appropriate consideration for public health, safety, and societal context.

PO4 – Investigations of complex problems: Use research-based knowledge and methods, including design of experiments and data synthesis, to reach valid conclusions.

PO5 – Modern tool usage: Apply appropriate techniques and modern engineering/IT tools, understanding their limitations.

PO6 – The Engineer and Society: Apply contextual reasoning to assess societal, health, safety, legal, and cultural issues.

PO7 – Environment and Sustainability: Understand the impact of engineering solutions on society and the environment, and the need for sustainable development.

PO8 – Ethics: Apply ethical principles and commit to professional ethics and responsibilities.

PO9 – Individual and Team work: Function effectively as an individual and as a member or leader in diverse, multidisciplinary teams.

PO10 – Communication: Communicate effectively through reports, design documentation, and presentations.

PO11 – Project management and Finance: Apply engineering and management principles to manage projects in multidisciplinary environments.

PO12 – Life-long learning: Recognize the need for, and engage in, independent and life-long learning.

Editorial Team

Chief Editor	Dr. M. Jenifer, Associate Professor & HoD, AI&DS
Faculty Advisors	Mr. S. Poorna Prakash, AP/AI&DS Mrs. Lavanya K, AP/AI&DS
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Design Team	S. Harthik, III – AI&DS S. Hari Kishore, II – AI&DS

The department of Artificial Intelligence and Data Science is striving towards the goal of providing innovative and quality education to students to achieve academic excellence. Our goal is to ensure that our engineering graduates are well prepared to play the roles of problem solvers, project leaders, entrepreneurs, and above all, ethical citizens of a global society.

Student Project Showcase

The following pages present a curated showcase of student project work from the Department of Artificial Intelligence and Data Science, spanning Second, Third- and Fourth-Year cohorts. Each entry summarizes the project's motivation, technical approach, and intended real-world impact.

6

II YEAR PROJECTS

10

III YEAR PROJECTS

8

IV YEAR PROJECTS

24

TOTAL PROJECTS

From augmented-reality heritage guides to AI-driven safety platforms, this year's projects reflect the department's emphasis on applying machine learning, computer vision, and natural language processing to real, everyday problems — in healthcare, agriculture, public safety, governance, and beyond.

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One-Click Emergency AI Enabled Alert App



Project Guide: Mrs. S. Priyanka, ASP/AI&DS



ABSTRACT

This project presents a One-Click Emergency Alert Platform designed to improve personal safety and provide quick assistance during emergency situations. An SOS feature allows users to instantly share their live location with pre-saved emergency contacts, so family members or trusted contacts can immediately track the user's location and respond with help. An Emergency Contact Management system lets users securely save the important contacts who will receive alerts, while an integrated chatbot guides users on how to use the platform and its features effectively. The platform also includes a Help Hub module where users can register as Volunteers, Seekers, or Donors; when a Seeker requests help, notifications are automatically sent to nearby Volunteers and Donors so they can respond quickly. A location-based service further displays the nearest police stations, fire stations, and hospitals, helping users locate appropriate emergency services without delay. Together, these features combine into a fast, reliable, and user-friendly emergency response system that enhances safety, improves communication, and ensures timely support during critical situations.

BY
Priyadharshini A
Anuvarshini S
Dhanalakshmi R
Sandhya R
Nivetha M

Society Help Desk – Smart Problem-Solving Assistant

II YEAR PROJECT



Project Guide: Dr. V. Nivedhitha, ASP & AI&DS



ABSTRACT

Society Helpdesk is an AI-powered smart problem-solving web application built to improve complaint management and service coordination in residential communities. Built on React, Node.js, and MongoDB, the system follows a role-based architecture spanning Residents, Staff, and Administrators, each with secure authentication appropriate to their role. Residents can easily submit complaints through a user-friendly interface, while AI automatically categorizes each issue, assigns a priority level, and suggests instant solutions for minor problems, reducing turnaround time without requiring staff intervention for routine cases. For more complex issues, the system ensures proper staff assignment and enables real-time tracking of complaint status, keeping residents informed at every stage. Automated notifications across SMS, WhatsApp, email, and voice calls keep all parties updated, while additional features such as online payment integration, staff performance tracking, and an analytics dashboard support better day-to-day decision-making. With its responsive design and efficient workflow, the system significantly reduces resolution time, improves transparency, and enhances resident satisfaction, making it a reliable, intelligent solution for modern community management.

BY
Kanmani S
Kavya U
Monika P
PriyaDharshini R
Sunanda R

Cyber Clone AI

II YEAR PROJECT



Project Guide: Mrs. K. Lavanya, Assistant Professor, AI&DS



ABSTRACT

With the rapid growth of online platforms, cyber threats and suspicious digital activity have become increasingly common, creating a growing need for intelligent, real-time monitoring. Cyber Clone AI addresses this by developing an intelligent system that detects and analyzes suspicious online behaviour as it happens. The system applies artificial intelligence and machine learning techniques to monitor user activity, identify unusual patterns, and flag potential cyber threats such as fraudulent transactions, unauthorized access, and abnormal user behaviour. By analyzing live data patterns and comparing them against predefined behavioural models, the system effectively distinguishes between normal and suspicious activity, enabling early detection and timely alerts that reduce risk and help prevent attacks before they escalate. The architecture is built to be scalable and efficient, making it applicable across diverse domains such as banking, social media platforms, and e-commerce systems, wherever real-time behavioural anomaly detection adds protective value. The project illustrates how AI-driven solutions can meaningfully strengthen digital security, with future enhancements planned around automated real-time response systems and integration with advanced threat-intelligence platforms for even faster, more coordinated defense.

BY

Arun Prasath M
Chandhru Priyan S
Vanamuthu S
John Jerold P

Multilingual Mobile Assistant AI for Smart Farming

II YEAR PROJECT



Project Guide: Dr. V. Nivedhitha, ASP/AI&DS



ABSTRACT

Agriculture supports the livelihood of millions, yet many farmers face real barriers from language limitations, delayed access to timely information, and limited technological awareness. This project proposes a Multilingual Mobile Assistant powered by AI to support smart farming practices through a user-friendly mobile application that interacts with farmers in multiple regional languages, improving both accessibility and inclusivity. The assistant offers real-time guidance on crop selection, weather forecasting, soil health, pest control, irrigation techniques, and market price updates, using natural language processing and machine learning to understand queries in a farmer's native language and respond with accurate, context-aware answers. Voice-based interaction is built in specifically to support farmers with limited literacy, ensuring the tool remains usable regardless of reading ability. By drawing on agricultural databases, weather APIs, and satellite information, the application delivers personalized recommendations that help farmers make better-informed decisions, improve productivity, and reduce risk from unpredictable environmental conditions. Ultimately, the system aims to bridge the gap between advanced agricultural technology and rural farming communities, promoting sustainable practices, higher crop yields, and stronger economic outcomes.

BY
Harikishore S
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Sheik Mashik M
Harikrishna K
Jana B

HealX – AI Healthcare Assistant

II YEAR PROJECT



Project Guide: Mr. S. Poorna Prakash, AP/AI&DS



ABSTRACT

HealX is a comprehensive AI-based medical assistant system designed to deliver smart, accessible, real-time healthcare support. The system collects user health data through a web or mobile interface — including symptoms, lab reports, voice inputs, images, and wearable device data — and securely processes it using machine learning techniques such as symptom analysis, image processing, and health risk prediction. From this data, HealX generates personalized medical recommendations, preventive care suggestions, and simplified interpretations of otherwise complex medical information, while also integrating real-time fitness monitoring for steps, sleep patterns, and physical activity to encourage healthier daily habits. A key feature is the Smart Emergency Health Card and SOS module, which shares critical health information and live location with emergency contacts or nearby hospitals during a crisis, helping ensure rapid, informed response. Additional modules cover medication management, AI-based hospital navigation, lab report analysis, and accessibility features such as voice assistance for visually impaired users. By unifying AI-driven diagnostics, continuous health monitoring, and emergency support into a single ecosystem, HealX enables earlier disease detection, broader medical accessibility, and meaningfully better patient wellbeing.

BY

Thirumaran V

Naveen Madhaiya Ganapath S

Arunkumar Sethu S A

Krishnaprakash L K

Thangaraj M

AI Mind Reader (Emotion Detection)

II YEAR PROJECT



Project Guide: Mrs. K. Lavanya, AP/AI&DS



ABSTRACT

This project develops a live emotion detector that uses artificial intelligence to identify human emotions in real time, capturing facial expressions and voice inputs through everyday devices such as cameras and microphones. The system detects key facial features — eyes, nose, and mouth — and analyzes them using deep learning techniques, particularly Convolutional Neural Networks, to interpret subtle expressions accurately. Based on this analysis, the system predicts emotional states including happiness, sadness, anger, fear, surprise, disgust, and neutral expressions, with results displayed instantly to the user. This real-time responsiveness makes the system useful across a range of applications, including healthcare settings where patient mood and distress can be monitored unobtrusively, security contexts where behavioural anomalies may be flagged, and human-computer interaction scenarios where systems can adapt their responses based on a user's emotional state. By combining computer vision and deep learning in a lightweight, real-time pipeline, the project demonstrates a practical pathway toward more emotionally aware, responsive AI systems.

BY
Balakrishnan M
Riyas R
Arunkumar A
Kalaiselvan G
Vishnu R

Tradition Meet Via AR

III YEAR PROJECT



Project Guide: Mr. Poorna Prakash S, Asst. Professor



ABSTRACT

Tradition Meet Via AR is an Augmented Reality application that bridges cultural heritage and modern technology, helping revive and promote fading folk arts, customs, and indigenous practices through immersive digital storytelling. The system overlays animations, narrations, 3D models, and historical context onto real-world markers associated with traditional artifacts, costumes, rituals, and art forms. Users simply point their device at a physical object or marker to instantly experience an interactive visualization of its cultural significance, with multilingual content delivery making the knowledge accessible to a wide and diverse audience. Designed for museums, cultural centers, schools, and heritage sites, the application acts as a smart guide that replaces static exhibits and printed pamphlets with dynamic, personalized storytelling. By preserving endangered traditions in digital form, it encourages younger generations to explore their cultural roots, creating a meaningful and interactive bridge between the past and the present.

BY

Dharvin Chandar B

Harthik S

Gayathru S

Lakshmi Priya S

Deep Skill AI

III YEAR PROJECT



Project Guide: Dr. T. Ravichandran, Professor, AI&DS



ABSTRACT

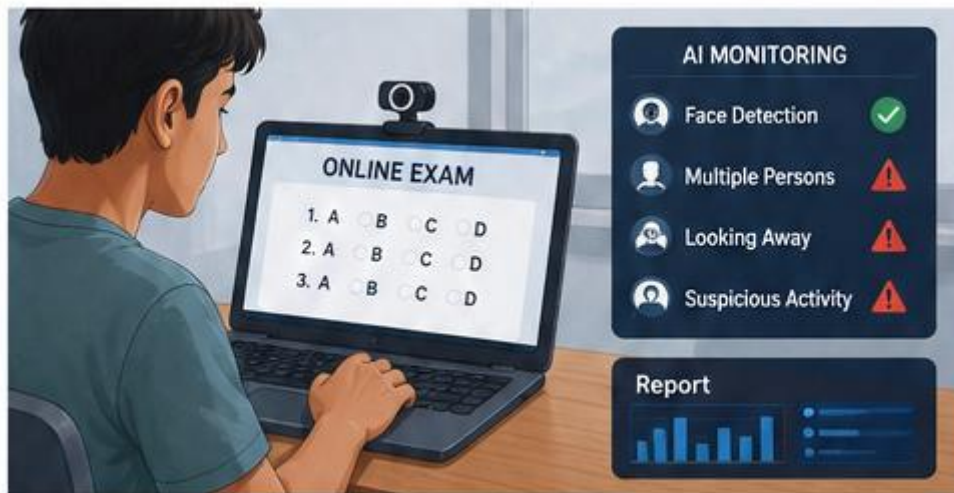
Deep Skill AI is a research-driven project that evaluates how deep learning techniques can be applied to improve skill assessment and learning outcomes in technical domains. The work begins by analyzing the problem statement and reviewing existing approaches, followed by a systematic methodology covering data collection, model design, and performance evaluation. The study applies rigorous data analysis and interpretation to ensure that results are both accurate and reliable, and it benchmarks the proposed approach against traditional methods on dimensions of efficiency, accuracy, and usability. Key challenges encountered during experimentation, such as data quality and model generalization, are documented along with practical solutions adopted to address them. The resulting model demonstrates measurable improvements over baseline techniques, validating the feasibility of the proposed approach. Beyond its immediate findings, the project contributes a reusable framework and a set of insights intended to guide future enhancements, making it a useful reference point for continued research in AI-driven skill development.

BY

Nithin S
Swathi Roopini J
Rohini A
Sathvika S
Vijay B

Student Exam Monitoring System

III YEAR PROJECT



Project Guide: Mrs. S. Priyanka, AP/AI&DS



ABSTRACT

The rapid growth of online education has created a strong need for secure, reliable examination systems, yet ensuring fairness in remote exams remains difficult with traditional methods like human invigilation and basic webcam supervision. This project proposes an AI-based Student Exam Monitoring System that strengthens exam integrity through real-time monitoring and intelligent behavioral analysis. Using computer vision, the system observes student activity via webcam and screen feeds, detecting suspicious patterns such as unusual movements, multiple faces in frame, and unauthorized device usage. A core feature is real-time cheating detection, which flags suspicious students instantly, paired with an automatic evidence-recording mechanism that captures short video clips of flagged events for later review and improved transparency. A mentor dashboard supports live monitoring, while a separate admin dashboard handles data management, giving institutions efficient tracking and control over exam activities. Together, AI-based detection, real-time alerts, and automated evidence storage form a scalable, effective solution for trustworthy online examinations.

BY

Nisha K
Subash R
Nirmal Gowtham S
Rizwan M

Smart Health and Water Safety Surveillance System

III YEAR PROJECT



Project Guide: Mrs. K. Lavanya, AP/AI&DS



ABSTRACT

Access to safe drinking water is essential for good health, yet many people lack simple, affordable ways to check water quality, leaving vulnerable groups such as pregnant women, children, and the elderly exposed to diseases like cholera, typhoid, and diarrhea. This project presents a Smart Health and Water Safety Surveillance System, a web application that assesses drinking water safety from basic user observations such as colour, smell, source, and storage conditions. A rule-based analysis and risk-scoring approach classifies water into safe, moderate-risk, or high-risk categories, and the system then predicts possible health risks and identifies the groups most likely to be affected. Practical recommendations, such as boiling, filtration, or avoiding consumption, are generated to guide safe usage at home, in schools, or while travelling. Because the solution is entirely software-based, it avoids the cost of sensors or laboratory testing, making water safety awareness far more accessible. Future versions can extend the system with hardware such as Raspberry Pi and water-quality sensors for continuous, real-time monitoring.

BY

G Rishitha Sree
C Jyothirmai
Konanki Reethu Chowdary
Kavya AR

Health Monitoring System Using Smart Watch

III YEAR PROJECT



Project Guide: Dr. M. Jenifer, AP/AI&DS



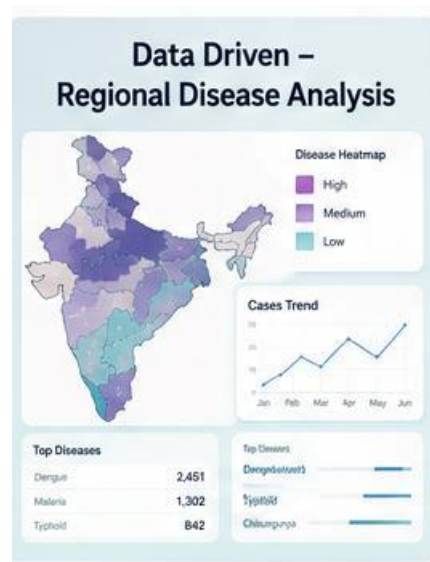
ABSTRACT

Continuous health monitoring has become essential to maintaining a healthy lifestyle, and this project develops a Health Monitoring System built around a smart watch that tracks and analyzes vital health parameters in real time. Sensors embedded in the watch capture key physiological data, including heart rate, body temperature, blood pressure, and blood-oxygen level (SpO2), and transmit it to a mobile application or cloud platform for easy access and analysis by both users and healthcare professionals. The system is designed to issue instant alerts whenever readings fall outside normal ranges, enabling a faster medical response during emergencies and meaningfully improving patient safety. By supporting remote monitoring and early detection of potential health issues, the system reduces the need for frequent in-person check-ups while promoting healthier daily habits. It is especially valuable for elderly individuals and patients managing chronic conditions, giving caregivers and clinicians continuous visibility into a patient's wellbeing without requiring constant physical supervision, and laying groundwork for more comprehensive wearable-based healthcare platforms.

BY
Rithanya
Monika
Akash
Siddarth Girish
Madesh

Data Driven – Regional Disease Analysis

III YEAR PROJECT



Project Guide: Dr. V. Nivedhitha, ASP/AI&DS



ABSTRACT

Regional Disease Analysis is a data-driven project that studies the distribution, patterns, and determinants of diseases within a specific geographic area. Health-related data is collected from hospitals, public health records, and surveys, then analyzed using statistical methods and visualization techniques to reveal prevalent diseases and how they trend over time. The project highlights regional disparities in disease occurrence and surfaces potential risk factors including environmental conditions, lifestyle habits, and socio-economic influences, while supporting early detection of outbreaks and more effective allocation of healthcare resources. Predictive modeling and trend analysis generate insights that help policymakers and healthcare professionals design targeted interventions and preventive measures, ultimately improving public health outcomes through informed, region-aware decision-making. The system further integrates Geographic Information Systems (GIS) and machine learning to deepen this analysis: GIS mapping visualizes disease hotspots and spatial relationships, while machine learning models forecast future outbreaks and uncover hidden patterns in large datasets, together enabling more proactive healthcare planning and timely, data-backed interventions across the region.

BY

Harish R
Deepak G
Kirthick Amsan TM
Dharan TR

AI for Career Guidance

III YEAR PROJECT



Project Guide: Dr. T. Ravichandran, Professor, AI&DS



ABSTRACT

Artificial Intelligence is transforming career guidance by replacing limited, generalized human counseling with personalized, data-driven recommendations tailored to each individual's professional journey. By leveraging large datasets, machine learning algorithms, and user-specific inputs, AI-powered systems analyze skills, interests, academic performance, personality traits, and labor market trends to suggest suitable careers and educational pathways. Natural language processing further enables intelligent chatbots to interact with users, answer queries, and simulate full career counseling sessions, while platforms such as LinkedIn and Coursera already apply similar techniques to recommend courses, skills, and job opportunities based on user profiles. This approach broadens access to quality career guidance at a fraction of the traditional cost, particularly benefiting students and job seekers in underserved regions. At the same time, challenges such as data privacy, algorithmic bias, and over-reliance on automation remain important concerns, making transparency and ethical AI design essential to building user trust. Overall, AI-driven career guidance enhances decision-making, increases efficiency, and empowers individuals to navigate increasingly complex career landscapes with confidence.

BY

Harish M
Sanjaysaravanan KR
Ganesh K
Sam Jaisel C
Vishnu M

AI-Based Personal Tutor Using Student Performance Analytics (NLP)

III YEAR PROJECT



Project Guide: Mr. S. Poorna Prakash, Assistant Professor



ABSTRACT

The AI-Based Personal Tutor Using Student Performance Analytics is a web-based platform that helps students learn programming more effectively through personalized guidance. The system supports three user roles — Student, AI Tutor, and Admin (Mentor) — allowing students to register, study programming topics, and take quizzes, after which the platform automatically saves their scores and analyzes performance trends. Based on this analysis, the system identifies each student's strong and weak areas, and the AI tutor responds with simplified explanations and targeted guidance to help them improve in difficult topics, applying natural language processing to make explanations clear and context-aware. The Admin or Mentor role provides a dashboard to view student progress, quiz results, and overall performance, allowing timely intervention and support wherever it is needed. By tailoring content and feedback to each learner's actual performance rather than a one-size-fits-all curriculum, the system aims to make programming education more effective, engaging, and accessible, ultimately helping every student build stronger coding skills at their own pace.

BY
Sharaveshvaren
Vishnu
Sofia
Monisha

Automated BI Dashboard Generator

III YEAR PROJECT



Project Guide: Dr. V. Nivedhitha, ASP/AI&DS



ABSTRACT

The Automated BI Dashboard Generator simplifies and accelerates the creation of interactive business intelligence dashboards, addressing the time, technical expertise, and continuous upkeep that manual dashboard-building typically demands. The system automatically collects data from multiple sources, cleans and processes it, and generates dashboards complete with charts, graphs, and key performance indicators, requiring minimal user intervention throughout. Dynamic updates are supported out of the box, enabling real-time monitoring so that decision-makers always work from current information rather than static, outdated reports. By automating what was previously a manual and error-prone workflow, the system improves efficiency, reduces human effort, and ensures consistent, standardized reporting across teams and projects. This makes it especially valuable for businesses, analysts, and organizations that need fast, accurate data visualization without deep technical expertise in BI tooling. Overall, the Automated BI Dashboard Generator turns raw, scattered data into clear, interactive, and real-time insight, directly supporting faster and better-informed organizational decision-making.

BY

K Raja

Bukke Venkata Teja Naik

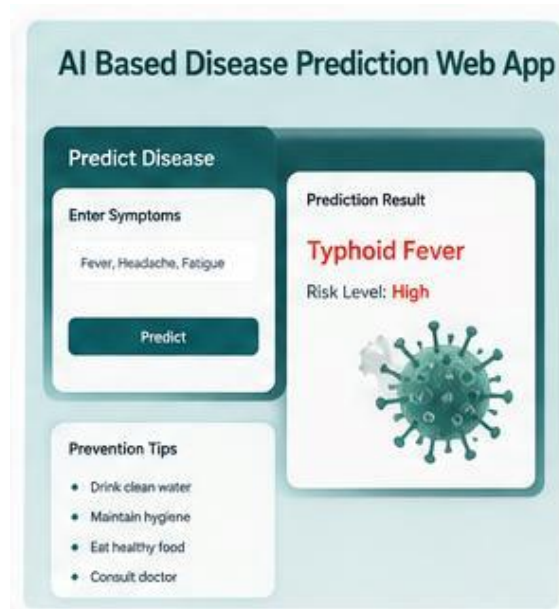
Gujjula Siva Yadav

E R Naga Nithesh

Ravulapalli Sai Ram

AI Based Disease Prediction Web App

III YEAR PROJECT



Project Guide: Mrs. S. Priyanka, AP/AI&DS



ABSTRACT

The rapid advancement of artificial intelligence has significantly transformed healthcare by enabling early and accurate disease detection. This project presents an AI-based disease prediction web application that helps users identify potential health conditions from their symptoms, using machine learning algorithms trained on medical datasets to analyze user-input symptoms and estimate the likelihood of various diseases. The application offers an intuitive, user-friendly interface where users enter their symptoms and receive instant predictions alongside basic health guidance, improving diagnostic efficiency and reducing dependency on immediate clinical consultation for preliminary analysis. Data privacy and security are built into the system, ensuring sensitive health information is protected while still offering scalable, accessible healthcare support over the internet. By bridging the gap between patients and healthcare services, the solution is especially valuable in remote or underserved areas where specialist access is limited. Overall, the project demonstrates how AI can enhance early diagnosis, promote preventive healthcare, and support medical decision-making at scale.

BY

Harini K
Sreeja DV
Niranjana K
Kiruthika N

Call2Task: AI-Powered Automatic Reminder System

IV YEAR PROJECT



Project Guide: Dr. V. Nivedhitha, ASP/AI&DS



ABSTRACT

Call2Task is an AI-powered automatic reminder system designed to help users manage tasks and deadlines efficiently in a fast-paced environment, reducing forgetfulness and improving overall productivity. The system applies natural language processing and machine learning to understand user input through text or voice, automatically schedule tasks, and prioritise reminders by urgency. Alerts are delivered across multiple channels, including app notifications, messages, and calls, ensuring that important reminders reach the user through whichever channel is most likely to be seen in time. By learning from user behaviour and historical scheduling patterns, Call2Task continuously adapts to suggest optimal reminder timings personalized to each individual rather than relying on fixed, generic schedules. This adaptive design makes the system suitable across a wide range of applications, including personal task management, healthcare medication reminders, education deadlines, and professional workflow coordination, offering a single, intelligent reminder layer that works consistently across very different use cases and user needs.

BY

Gurram Venkata Sai Ramcharan

Dakkatha Karthik

Pula Anunn

Violence Detection in Crowd Using Open AI

IV YEAR PROJECT



Project Guide: Ms. K. Lavanya, AP/AI&DS



ABSTRACT

As urban populations grow, ensuring safety in crowded public spaces has become an increasingly significant challenge. This project proposes a scalable violence-detection framework that identifies suspicious and violent activity in real time from image and video data, built on the CLIP vision-language model. By mapping images and text into a shared feature space, the system performs zero-shot classification, removing the need for large labeled training datasets while still detecting events such as fights, fires, and accidents. A Streamlit-based interface allows users to upload and analyze media directly, and for video, an optimized frame-sampling method reduces computational cost while preserving accuracy, making the system practical for resource-constrained environments without GPUs. When a threat is detected, an automated alert system sends email notifications with visual evidence, enabling a rapid response, while the modular design allows easy integration with existing CCTV and surveillance infrastructure. Experimental results show reliable performance across varying conditions, with the vision-language approach improving generalization to unseen scenarios compared to traditional detection methods, making it a cost-effective option for smart public-safety surveillance.

BY

Yeddula Ganesh

Tadipatri Sai Charan Kumar Reddy

Palukuru Naga Karthik

S. Rubanraj

Hemolens – Explainable AI for Donor Eligibility in Blood Bank Systems

IV YEAR PROJECT



Project Guide: Mr. S. Poorna Prakash, AP/AI&DS



ABSTRACT

Hemolens is a Blood Bank Management System that brings donors, hospitals, labs, and administrators onto a single MERN-stack platform, addressing common shortcomings of traditional blood bank systems such as unexpected shortages, slow emergency response, and limited transparency. A distinguishing feature is Lab-Based Donor Verification, which ensures every donor is checked and cleared by a registered lab before donation, improving both safety and trust in the donation pipeline. The system also includes an AI-driven shortage prediction module that compares blood demand against current availability to forecast potential shortages before they occur, giving administrators time to act proactively rather than reactively. Medical information is protected through JSON Web Token-based authentication and encrypted credentials, with role-based access ensuring only authorized users can view sensitive data. A live status dashboard surfaces real-time alerts to support faster decision-making by blood bank staff. By combining automation, lab-based verification, and predictive analytics, Hemolens directly targets the structural problems in conventional blood bank systems and builds a more connected, trustworthy community around the blood donation process.

BY

P. Varshini

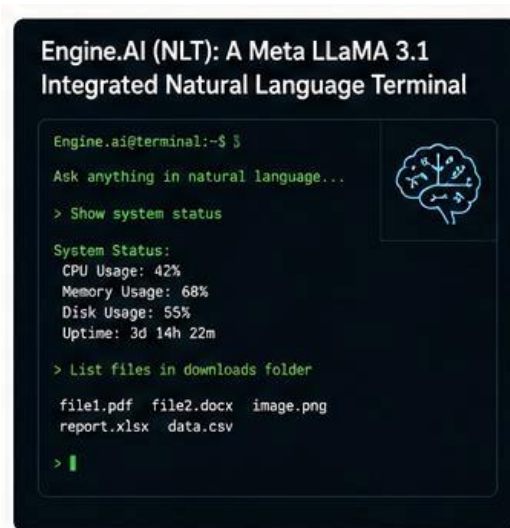
L. Gouthami Sree

Y. Anita Preety

R. Pavithra

Engine.AI (NLT): A Meta LLaMA 3.1 Integrated Natural Language Terminal

IV YEAR PROJECT



Project Guide: Dr. M. Jenifer, ASP & HOD, AI&DS



ABSTRACT

Engine.AI (NLT) is a conversational assistant built to bridge the gap between high-level human reasoning and low-level file system operations, addressing the cognitive load created when users must constantly switch between conceptual thinking and precise technical commands. The system lets users interact with their file system through natural language instructions, which are automatically translated into executable code and system commands using the Meta LLaMA 3.1 model accessed via the Hugging Face Inference API, enabling accurate interpretation of user intent and context-aware script generation. A secure sandboxed execution environment isolates all operations from critical system resources to prevent unintended modifications, while an automated undo mechanism, backed by a dedicated trash directory, lets users safely revert file operations whenever needed. Additional capabilities include AI-driven debugging, intelligent summarization of execution results, real-time syntax highlighting, and an interactive file-tree visualization within a web-based terminal interface. Evaluations show the platform meaningfully reduces context switching and manual scripting effort, accelerating everyday development workflows and offering a more intuitive model of human-computer interaction.

BY

Naveen Prashanth KS
Ashwin Kumar J
Keerthivasan R
Mohamed Faizal B

Law-Mate: AI Assistant for FIR and Legal Awareness

IV YEAR PROJECT



Project Guide: Mrs. S. Priyanka, AP/AI&DS



ABSTRACT

Drafting an FIR and other legal documentation requires precise statutory language, which makes it difficult for everyday citizens to map their natural-language account of events to the correct legal provisions. Law-Mate addresses this gap with an AI-based semantic retrieval and legal search system that interprets plain-language queries and returns the most relevant statutory sections. The system uses a sentence-transformer model (all-MiniLM-L6-v2) combined with cosine similarity to identify semantically related legal sections, alongside an FIR recommendation module that blends embedding-based similarity with rule-based consistency checks to suggest applicable legal standards for a given complaint. Built on the MERN stack with precomputed embeddings, Law-Mate is able to retrieve relevant statutory provisions quickly, making legal information substantially more accessible to people without formal legal training. By translating everyday descriptions of incidents into accurate legal context, the system supports both citizens seeking clarity on their rights and officials drafting more precise, consistent documentation, ultimately working toward a more transparent and accessible legal awareness ecosystem for the general public.

BY
M.S. Varun
M. Santhosh
V. Senthil Raja
J.H. Serjin Hubert

SAFETIFY: Real-Time Women Safety System with SOS Alert and Location Monitoring

IV YEAR PROJECT



Project Guide: Dr. M. Jenifer, ASP & HOD, AI&DS



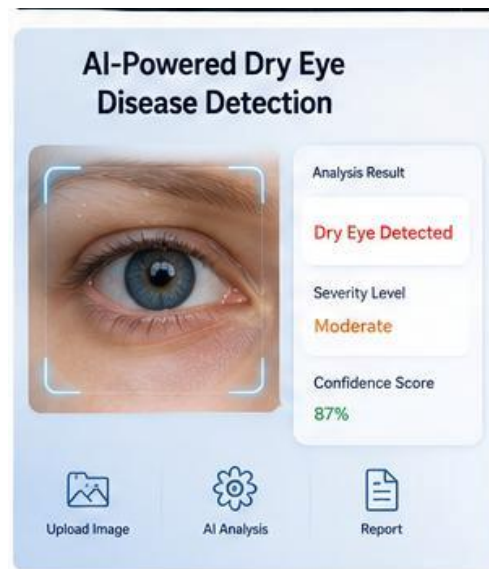
ABSTRACT

Rapid urbanization and increased mobility have raised real concerns about personal safety, particularly for women, students, and people travelling during late hours. Most existing safety applications are reactive, requiring users to manually trigger an alert only after a threat has already occurred, which offers limited protection because it does nothing to help users avoid dangerous areas in the first place. SAFETIFY is proposed as a predictive personal safety platform that anticipates and highlights high-risk areas using AI and real-time geospatial analysis. A Bi-Directional LSTM model captures spatial and temporal risk patterns from historical crime data, user movement trends, and time-dependent behavioural factors, producing a risk score for any given location that is converted into clear safety categories through sigmoid probability mapping. The platform continuously tracks the user's live GPS position, overlays predicted risk zones on an interactive map, and issues preventive alerts as the user approaches an unsafe region, automatically transmitting their live location to pre-registered emergency contacts when needed. SAFETIFY can also recommend comparatively safer travel routes, combining deep learning, location intelligence, and automated alerts into one scalable, user-friendly safety assistant.

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AI-Powered Dry Eye Disease Detection

IV YEAR PROJECT



Project Guide: Dr. V. Nivedhitha, ASP/AI&DS



ABSTRACT

Dry Eye Disease (DED) affects millions of people worldwide, often causing discomfort, irritation, and potential vision impairment if left untreated, yet early diagnosis remains difficult because it typically requires specialized equipment and expert evaluation. This project proposes an AI-powered system for the automatic detection of Dry Eye Disease using medical imaging and deep learning. Convolutional Neural Networks (CNNs) analyze eye images to identify key indicators such as tear film instability, redness, and ocular surface irregularities, with a well-curated dataset of labeled eye images used to train the model for accurate classification between normal and dry-eye conditions. Image preprocessing techniques, including normalization, enhancement, and augmentation, are applied to improve the model's robustness and overall performance. The resulting system features a user-friendly interface that lets users or clinicians upload eye images and receive instant predictions along with severity analysis and basic recommendations. By reducing dependency on manual diagnosis, the solution supports earlier detection and broadens access to eye care, particularly benefiting people in remote or resource-limited areas where specialist ophthalmology services are scarce.

BY

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AI-Auto Insights

IV YEAR PROJECT



Project Guide: Dr. T. Ravichandran, Professor, AI&DS



ABSTRACT

Traditional data analysis has long been limited by the need for specific technical skills such as SQL, Python, and data pipeline management, putting meaningful analysis out of reach for many business users. This project introduces AI-Auto Insights, an autonomous data analysis engine designed to democratize analytics through natural language processing. The system combines a Gemini 2.5 Flash large language model with a Pandas AI sandbox environment to translate natural-language queries directly into executable Python scripts, built on a reactive React frontend paired with a high-performance FastAPI backend. Core features include automated data ingestion and sanitization, immediate analysis on upload, dynamic statistical reporting in Markdown, and on-demand data visualization, all without requiring the user to write a single line of code. For data privacy and system security, a schema-only transmission protocol sends only metadata to the cloud while performing the actual analysis locally, keeping sensitive raw data on-premises. By turning plain-language questions into real analytical output, AI-Auto Insights bridges the gap between raw data and actionable business intelligence, significantly reducing the latency typically associated with traditional data analysis workflows.

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