Live Cricket Score Management

Developed a responsive full-stack web application to manage live cricket scores using React.js, Tailwind CSS, and REST APIs. Implemented an auto-refreshing system for real-time updates, integrated winning probability prediction models, and designed a user-friendly dashboard for scorekeepers.

Newsverse

Built a frontend web platform to efficiently display and manage news articles. Optimized response time for user queries by structuring APIs and implementing a lightweight UI, ensuring smooth browsing and reduced latency.

Ground Water Quality Prediction Using Machine Learning

Designed a machine learning system using Python, Pandas, and Scikit-learn to classify water quality as potable or non-potable. Trained models including Random Forest, SVM, and Logistic Regression, reducing manual testing workload by ~40%.

Crop Price Prediction Using Data Science

Implemented a predictive model combining weather data, soil health, and market trends to forecast crop prices. Used Python, Pandas, and regression-based ML models to support farmers and policymakers with data-driven insights.

Retinal Disease Detection using Deep Learning

Built a deep learning-based image classification model using CNNs to detect retinal diseases (cataract, glaucoma, diabetic retinopathy). Improved diagnostic accuracy and supported healthcare automation through medical dataset analysis.

Dairy Business and Cattle Management System

Designed and implemented a SQL-based relational database system to manage cattle details, dairy products, transactions, and production data. Automated reporting reduced manual record-keeping errors and improved operational efficiency by 40%.

Personal Expense Tracker (Java)

Developed a Java-based application to track personal expenses using OOP principles. Automated expenditure analysis and reporting improved budgeting accuracy by 25%. Designed modular architecture to ensure scalability and maintainability.

PIR Motion Detection

Created a motion detection system using a PIR sensor integrated with hardware and software logic. Enabled real-time alerts for motion activity, showcasing sensor integration and embedded systems programming.

AI-Enhanced Cloud-Based Forest Monitoring System

Built a cloud-based real-time monitoring system using Google Earth Engine, Vertex AI, and BigQuery. Deployed anomaly detection algorithms to identify deforestation patterns and generate alerts with sub-minute latency.

Interpretable Malware Detection Using Self-Attention CNN

Designed a self-attention-augmented 1D CNN with TensorFlow and Keras for Android malware detection. Achieved 92% accuracy by modeling long-range opcode dependencies and proposed explainability for model predictions.

Behavior-Aware Influence Maximization on Instagram

Developed a graph-based system using Python, NetworkX, and Genetic Algorithms to maximize user influence on Instagram. Incorporated behavioral insights and performance optimization techniques to outperform traditional influence models.

Firefox Custom Adblocker

Created a browser extension for Firefox using JavaScript and WebExtensions API to enable custom ad blocking. Contributed to open-source development, enhancing system performance and improving user privacy.

Machine Learning Projects (Crop Price + Groundwater Quality)

Conducted multiple ML experiments in Python using Pandas and Scikit-learn. Applied Random Forest, SVM, and Linear Regression models to predict crop prices and classify groundwater quality, focusing on practical real-world applications.

Mobile Application Development (Java) Ongoing

Building Android mobile applications using Java with focus on UI/UX design, backend integration, and business process automation. Developing reusable components and scalable architecture to align with real-world business needs.

Parsely AI (July 2025)

Developed Parsely AI, a Gemini-powered document processing platform that uses Large Language Models for intelligent claim evaluation and semantic search across unstructured documents like contracts and policies. Built with FastAPI backend, Streamlit frontend, and cost-effective architecture delivering 90% savings over traditional AI solutions.