

# VANKADOTH PRAVEEN

+91 9030091105 v.praveen0700@gmail.com linkedin.com/in/v-praveen github.com/9raveen

## Education

Indian Institute of Information Technology, Nagpur

Aug. 2023 – May 2027

B.Tech in Computer Science and Engineering (AI/ML)

Nagpur, Maharashtra

## Relevant Coursework

- Data Structures and Algorithms
- Machine Learning
- Database Management
- Artificial Intelligence
- OOPS Concept
- Computer Networks
- Operating Systems

## Projects

### Metro Ridership Analysis

Data Analytics Project | GitHub

Team Project (2 members)

- Cleaned and validated daily metro ridership time-series data (Oct 2024 - Feb 2025) using Python (Pandas): resolved duplicates, corrected data types, standardized dates, and ensured end-to-end data integrity across 100+ daily records.
- Performed exploratory data analysis (EDA) across 4+ payment modes (Smart Cards, Tokens, QR, NCMC) to surface ridership trends, seasonal shifts, and peak usage patterns to support data-driven capacity planning.
- Identified day-of-week and monthly adoption trends across ticketing categories, providing actionable insights for operational and strategic reporting.
- Designed and delivered an interactive Power BI dashboard with 8+ visuals (KPIs, trend charts, boxplots, weekly patterns) enabling stakeholder self-service reporting.

**Technologies:** Python, Pandas, NumPy, Matplotlib, Seaborn, Power BI

### Multi-Object Detection and Tracking in Sports Footage

Computer Vision Project | GitHub

Solo Project

- Built a real-time computer vision pipeline to detect and track 15–25 players per frame with persistent IDs using **YOLOv8 and DeepSORT**
- Achieved stable identity tracking across occlusion, motion blur, and camera movement using motion prediction and appearance-based association
- Developed **HSV + KMeans-based** team classifier, improving team labeling accuracy in dynamic lighting conditions
- Reduced false detections by 80% using spatial and size-based filtering techniques
- Implemented **trajectory visualization** for player movement analysis across 3000+ frames
- Generated annotated video output with bounding boxes, IDs, team labels, and motion trails

**Technologies:** Python, OpenCV, NumPy, YOLOv8, DeepSORT, scikit-learn

### Network Intrusion Detection System using ML and DL

Machine Learning Project | GitHub

Team Project (3 members)

- Built an end-to-end multiclass Intrusion Detection System (IDS) using the CICIDS2017 dataset containing **2.8M+ network flow records** across **15 traffic classes**.
- Applied hybrid feature selection techniques (ANOVA, Pearson Correlation, ExtraTrees), reducing features to 12 with minimal accuracy loss.
- Trained and evaluated **8 ML/DL models** including KNN, Random Forest, Linear & RBF SVM, XGBoost, LightGBM, Logistic Regression, and LSTM, using accuracy, macro-F1, and confusion matrix analysis.
- Achieved over 98% detection accuracy through ensemble modeling and feature optimization.
- Developed and deployed a **Streamlit-based real-time IDS web application** integrating trained models and preprocessing pipelines (Yeo-Johnson + Min-Max).

**Technologies:** Python, NumPy, Pandas, scikit-learn, Matplotlib, Seaborn

## Technical Skills

**Data Analysis and Visualization:** SQL, Excel, Power BI, pandas, Matplotlib, Seaborn

**Machine Learning:** Supervised Learning, Classification, Feature Engineering, Model Evaluation, Hyperparameter Tuning, Ensemble Methods

**Deep Learning & CV:** CNNs, Object Detection, YOLOv8, DeepSORT, Image Processing

**Programming Languages:** Python, Java, C/C++, SQL, JavaScript

**Frameworks & Libraries:** scikit-learn, TensorFlow, OpenCV, XGBoost, LightGBM

**Tools & Platforms:** GitHub, Git, Docker, Streamlit, VS Code, IntelliJ