

Road Traffic Prediction System

Improving Traffic Management Through Data Analysis



Understanding Road Traffic Prediction System

Objective:

- Predict traffic conditions to enhance urban mobility.
- Utilize app data to provide real-time or synthetic traffic insights.

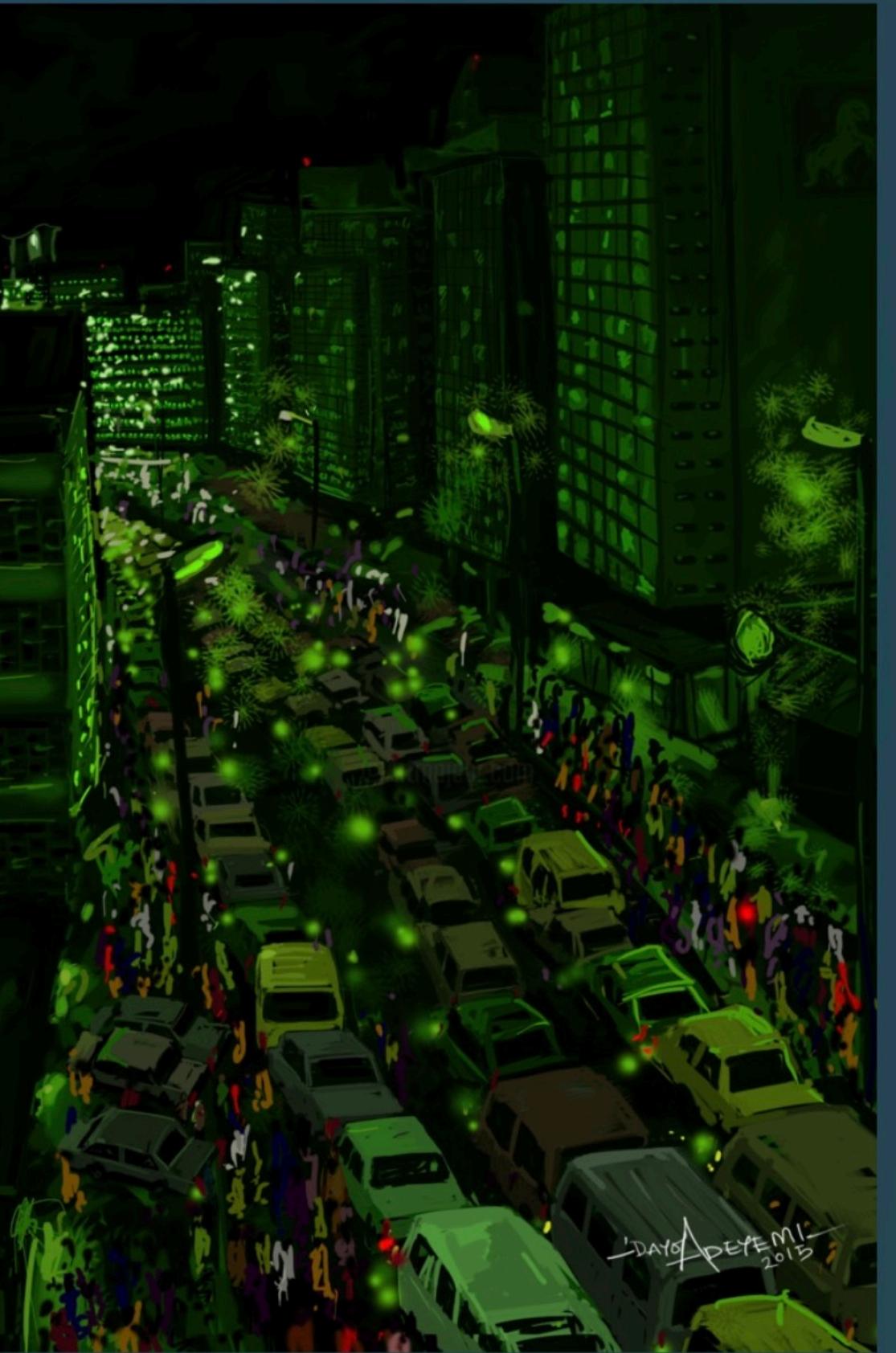
Key Features:

1. Synthetic or Real-time traffic updates.
2. Predictive analytics for traffic congestion and User-friendly Dashboard and Report.



Traffic Data Analytics

Analyzing traffic data enables authorities to make data-driven decisions for dynamic traffic control and adaptive routing solutions.



Importance of Traffic Prediction

Efficient traffic flow:

- Reduces congestion,
- Saves time,
- Benefits the environment.
- Optimize traffic
- Improve urban mobility.



Challenges in Traffic Systems

Unpredictable situation,
Inefficient road use
Lack of real-time insights.

Predictive models can solve with traffic Challenges.



Implementation of Traffic Prediction Models

Machine Learning Models: - Time Series Analysis (ARIMA, LSTM). - Regression Models (Linear Regression, **Random Forest**).

Evaluation Metrics: - Mean Absolute Error (MAE). - Root Mean Squared Error (RMSE).

Tools and Technologies: - Python (Pandas, NumPy, Scikit-learn). - Jupyter Notebooks. - Visualization with Matplotlib and Seaborn.



Demo

URL : <http://localhost:8501>

Git:<https://github.com/kunnath/TrafficApp>

- North Berlin shows higher traffic congestion levels compared to West Berlin.

Recommendation: Implement targeted traffic management strategies in North Berlin to alleviate congestion.

