

# PROJECT DESIGN

## System Architecture

Date	28 JUNE 2025
Team ID	LTVIP2025TMID59766
Project Name	<b>TrafficTelligence: Advanced Traffic Volume Estimation with Machine Learning</b>
Maximum Marks	4 Marks

### System Architecture:

#### Data Collection:

- Data is gathered from CSV files or other sources.

#### Data Preprocessing:

- Clean the data, handle missing values, encode categorical variables, scale features, etc.
- Split the data into **Train Data** and **Test Data**.

#### Algorithm Selection:

- Choose a suitable algorithm based on the problem (e.g., Linear Regression, Decision Tree, Random Forest, etc.).

#### Model Training:

- Use the **Train Data** to train the model using the selected algorithm.

#### Model Evaluation:

- Evaluate the model's performance using the **Test Data**.
- Generate performance metrics like accuracy, precision, recall, RMSE, etc.

## Model Deployment:

- Integrate the model into a **User Interface (UI)**.
- Allow users to input new data and receive predictions.

## Prediction & Interaction:

- Users interact with the model via the UI.
- Model generates predictions based on user input.

