NeuroFleetX – AI Powered Urban Fleet & Traffic Intelligence

1. Problem Statement

Today, cities are becoming more crowded, and the number of vehicles on the road is increasing every year.
In the future, we will also have many autonomous vehicles along with normal human-driven vehicles.
Managing all these vehicles together will become very difficult.

Traditional traffic systems cannot:

- Handle sudden traffic jams

- Predict risk zones

- Guide vehicles safely

- Monitor every vehicle in real time

So, we need an intelligent AI-powered system that can watch the whole city, understand traffic patterns, and help vehicles move safely and smoothly.
Our project, NeuroFleetX, is created to solve this problem.

2. Scope of the Project

Our project aims to build one common platform that can manage:

- All vehicles (normal + autonomous)

- Traffic flow

- Risk zones

- Vehicle movement

- AI predictions

We are creating three user roles:

1. Admin – controls the entire system

2. Manager – monitors traffic and risk zones

3. Driver – receives the best route and traffic alerts

The scope includes:

- Login for all roles

- Adding and managing vehicles

- Tracking vehicles live

- Updating traffic data

- Predicting congestion

- Showing safe routes

- Displaying risk zones on maps

This project mainly focuses on real-time traffic intelligence using AI.

Team Members & Roles – Team B

- Narmadha L – Admin Module

- Ganesh – Admin Module

- Nithin – Manager Module

- Gayatri – Manager Module

- Dinesh – Driver Module

Deliverables

Our project will deliver:

✓ Working Website (React + Spring Boot)

- Login page

- Admin, Manager, Driver dashboards

- Live traffic and vehicle updates

✓ Smart AI Features

- Predict traffic congestion

- Identify high-risk locations

- Suggest safe and fast routes

✓ Backend API

- Login using JWT

- Add/Edit/Delete vehicles

- User management

- Traffic data handling

Milestone 1 – PPT Presentation

In this milestone, we presented:

- What problem we are solving
- Our project overview
- Role explanations
- What each team member will do
- Basic system flow
- Technologies we will use

Milestone 2 – 30% Project Completion

By this stage, our team completed:

Admin Role:

- Login Page (JWT-based authentication)
- Admin Dashboard UI setup
- User Management basic screens (Add Manager, Add Driver)
- Vehicle Management UI planning

Manager Role:

- Manager Dashboard basic design
- Traffic data update form (UI mockup)
- Risk zone map structure (initial setup)

Driver Role :

- driver dashboard base layout
- Source → Destination input design