**Real-time – traffic accident prediction & severity classification.**

**Goal:** Predict whether a traffic accident will happen & classify its severity

Predict whether a traffic accident will happen & classify its severity based on real-time weather, traffic and historical data.  
**2) Dataset / Data-sources**

Real-time data sources / generate it yourself

1. Google Maps API / Open traffic
2. Weather reports (Open Weather Map API)
3. Road conditions → IoT sensor traffic data
4. Historical accident data (Kaggle)

For example City is new York **NY(Blueprint of Map)**

**3) Data – Collection & Processing:** Fetch data from API’s, historical data

**4) Feature Engineering** Rain, fog, humidity, temperature, Speed variations, peak hours

Road features- Potholes, construction sites, historical buildings, etc.

Time features- rush hours, non-rush hours

5) Model Building - **Pipeline creations / PyCaret**

ML flow – experimentation + Plotply for graph  
Comet ML doesn’t go Databricks ML

LSTM for time-series accident prediction- only if we know deep learning

**5) Model Evaluation**- Accuracy, Precision, Recall, F1 score, AUC-ROC

**6) Deployment**

1. GitHub
2. Streamlit / Flask + HTML + CSS Or use FastAPI
3. Fromnt end like vercel/rendra/python

**7) Prediction Systems** If any accident zone is detected → Send an email (using App password)

If possible try interactive map using plotply

8) High level document (Big picture means what your product looks like )and Low level document(Implementation details ) include diagrams and images of predictions

**TL → Deploying and testing**

1. Coder → Backend + Frontend
2. Document writer / ML model
3. QA – Testing / Architecture of the system