



ML Problem Statement



Predicting Pedestrian Safety Zones

Urban safety depends on minimizing risks to pedestrians, especially in accident-prone zones. Your task is to design a Machine Learning model that predicts safety levels for different locations based on past data.

BASE PROBLEM:

Develop a Machine Learning model to predict pedestrian safety levels in urban environments by:

- Creating a regression model that generates a safety score (0-100) for specific locations at a certain time of the day.
- Utilizing features including geolocation, starting and ending time and severity of accident.

BONUS PROBLEM:

- Implementing some feature engineering techniques.
- Creating a front-end for the model that communicate safety predictions effectively.

CONSTRAINTS:

- Use only the provided dataset
- Implement models using standard machine learning libraries, please do not use pure python with numpy (ptsd from last hackathon)
- Ensure code is well-documented and reproducible



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EVALUATION CRITERIA:

- **Prediction Accuracy (0-50 points)** : Evaluated using Mean Absolute Error (MAE) on a private test dataset
- **Feature Importance (0-30 points)** : Assessment of feature engineering and safety predictor explanation in comments
- **Code and Documentation (0-20 points)** : Code organization, clarity, and comprehensive documentation

SUBMISSION GUIDELINES:

- Complete Machine Learning model code as a colab or kaggle link. We are encouraging you to use these platforms
- Detailed in-line comments including: • Model architecture and approach • Feature engineering methodology • Performance metrics • Limitations and potential improvements
- Visualization of model predictions and insights such as performance metrics

Dataset link:

https://drive.google.com/file/d/1GT5JUQt1YIUCKkww1LyS-lZo_zIMJzNt/view

ZYRO'2025 Website Link: <https://www.zyro-kgec.tech/>