Team 119

U.S. Car Accidents Factors Analysis

Zehao Hu, Chun Shen Kok, Weihan Lin

Tsun-Man Lou, Ya-Hsin Tsai

Agenda

3 Motivation & Problem Definition

- **Engineering and Design Improvements: Analysis accident patterns and understanding how difference factors contribute to crashes allows for the development**

- **Safety improvements: Understanding the causes, patterns, and consequences of car accidents helps identify areas where safety measures can be improved.**

Project Details

5 Project Review

- **Data Collection and Analysis: Gathering information from 2016 to 2023, such as weather condition, location, and road design can provide valuable data for analysis**

- **Big Data and Machine Learning: Identify patterns, correlations, and risk factors that may not be readily apparent through traditional analysis methods**

6 Project Approach & Innovation

- **Public Awareness and Education: Raises awareness about the risks and consequences of unsafe driving**
  - **Helps educate drivers, passengers, and pedestrians about the importance of road design, weather condition impacts on traffic**

- **Accident Reconstruction: Helps investigators understand how and why accidents occurred**
  - **Reconstruct the sequence of events leading to accidents**

7 Impact Assessment

- **Traffic Flow and Efficiency: Improve traffic flow and reduce congestion**
- **Accessibility and Mobility: Impacts on accessibility and mobility for different modes of transportation**
- **Environmental Considerations: Air, water quality, noise pollution, and habitat fragmentation**
- **Future Planning and Adaptation: Impacts on neighbourhoods, land use patterns, and community cohesion**
- **Economic Analysis: Assessment of costs associated with construction, maintenance, and operation of road infrastructure**

8 Project Logistic

COSTS

- None. Publicly available sources

RISKS

- Data without granularity which need to research more information
- Underlying correlations within features
- Unexpected outcomes as assuming the largest correlation with car accidents is road design

PAYOFFS

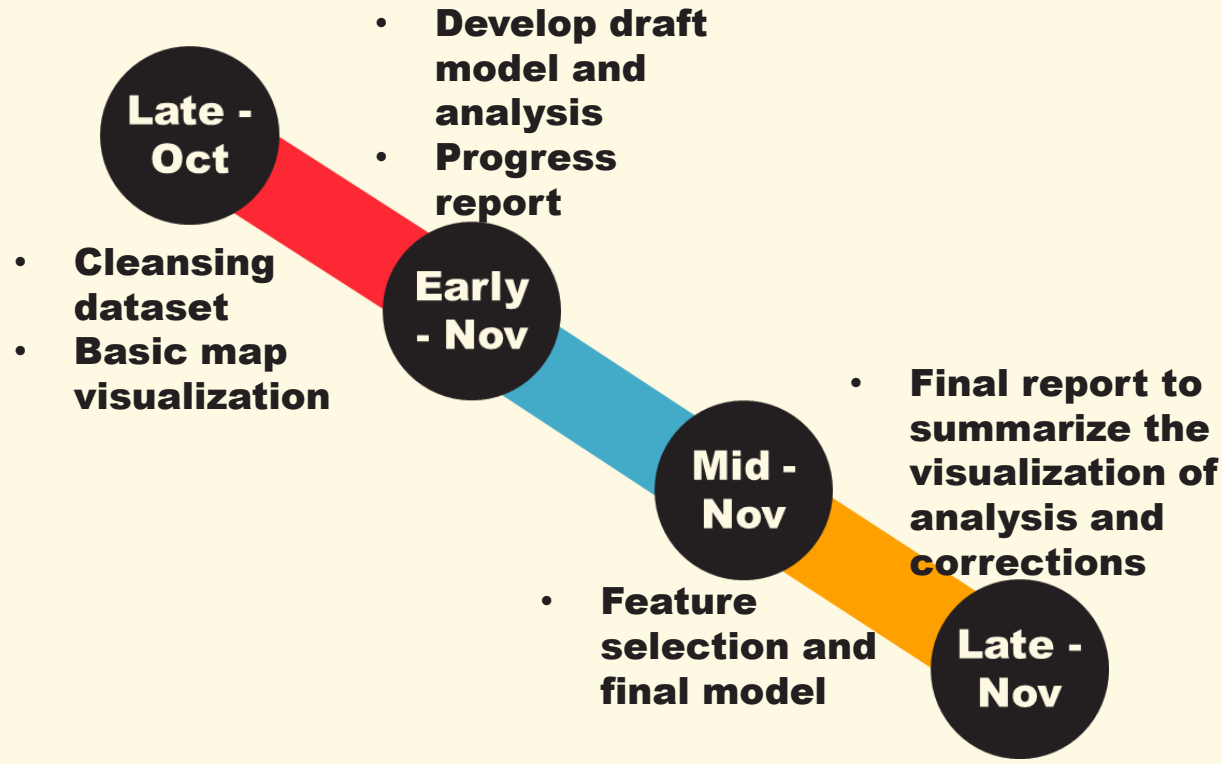
- Lower rate of car accidents or fatalities
- Higher coverage of road users' awareness

9 Project Plan

Planning Cleansing dataset and developing correlations

Design Data Visualization and analysis the correlation of factors

Tools Python, R, Power BI



Thank you