Dead Ends and Data Trends: A Journey Through America's Recent Accident Stats

Background:

Motor vehicle collisions are a major cause of unintentional injury deaths in the U.S. This research uses the 2022 Fatality Analysis Reporting System (FARS) dataset from the National Highway Traffic Safety Administration, which contains 39,480 records of fatal motor vehicle crashes, to identify factors influencing accident severity and develop strategies to prevent future fatalities.

Research Area: Improvement of Road Safety through Exploratory Data Analysis (EDA) of Environmental and Temporal Factors

This study aims to identify key risk factors, including high-risk time periods, the impact of environmental and road conditions, and safety differences between urban and rural areas.

By uncovering these patterns, the research can be further used to propose interventions, such as optimizing emergency response times and adjusting traffic regulations, to reduce fatalities.

Research (SMART) Questions to address:

1. How do temporal factors impact the frequency of fatal traffic accidents and fatalities?

2. How do weather and lightning conditions affect the occurrence and severity of fatal accidents?

3. What impact do road and traffic control conditions have on accident severity?

4. Are there any noticeable trends in fatal accidents over the years? Has the number of fatalities been increasing or decreasing in certain regions?

5. Does the EMS arrival time influence the number of fatalities?

SOURCE OF THE DATASET:

https://geodata.bts.gov/datasets/usdot::fatality-analysis-reporting-system-fars-2022-accidents/about

GITHUB REPOSITORY:

DATS_6101_TEAM5