Ahmedabad University

CSE523 - Machine Learning

Project 11: Identify abnormal driving behavior using spatio-temporal analysis

Weekly Report

Group: Titans

Team Members

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Week five: Started work on Data Finding, Data Understanding, and Data Cleaning.

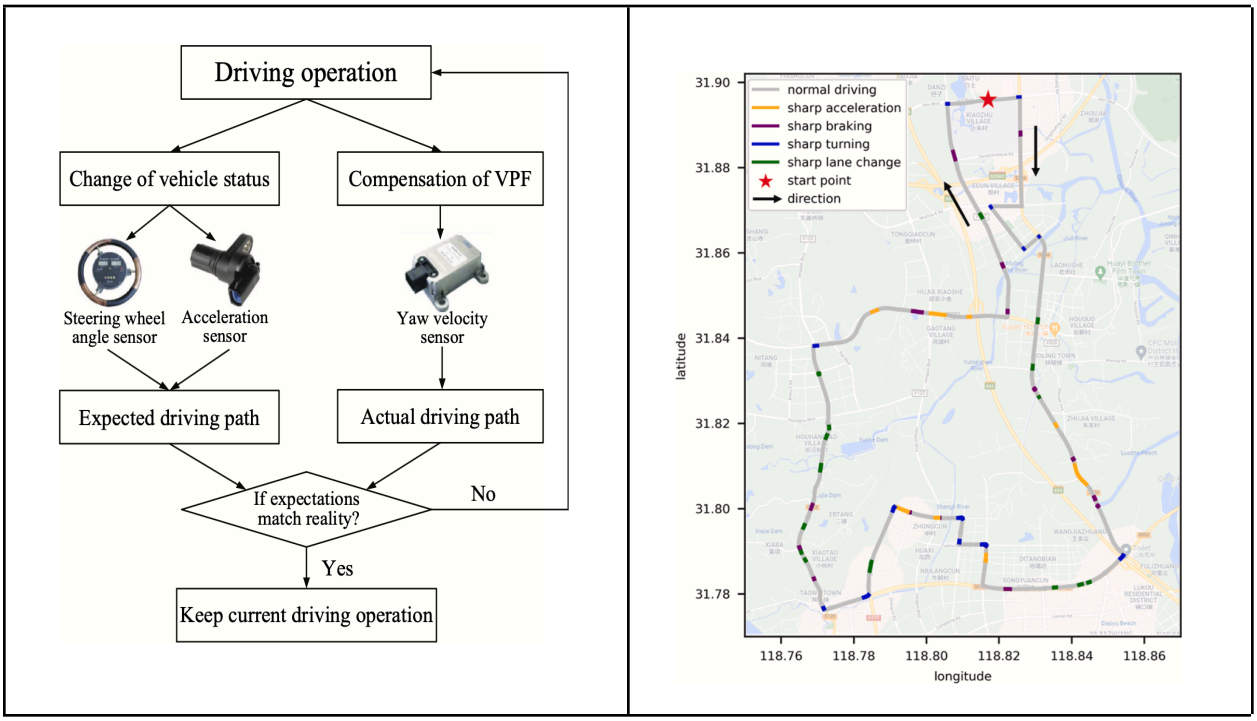
Type of Data: Coordinate Data

Data Finding: Our data includes different data fields such as time, latitude, angle, speed, lane, pos, and id. So, based on the problem statement, we would take necessary fields for These datasets could be obtained from GPS tracking devices, vehicle sensors, or other sources capturing driving behavior to identify the behavior of the driver.

Data Understanding: We explored the structure and content of the dataset and analyzed the distribution and range of values for each field (latitude, longitude, speed, etc.). Also, We identified missing values, or inconsistencies in the data.

Data Cleaning: For data cleaning, we can Normalize or scale numerical fields (speed, angle) to ensure consistency in the data. Also we can address any outliers or erroneous data points that may affect the analysis.

Feature Extraction and Proper Labeling: Extract relevant features from the data that can characterize driving behavior, such as acceleration patterns, lane changes, or abrupt turns. Then adding label data points as normal or abnormal based on predefined criteria, such as exceeding speed limits or erratic driving behavior.



References: https://www.tandfonline.com/loi/uaai20