ARIA
APPLIED RESEARCH IN ACTION

Identifying Causal Risk Factors for Hazardous Driving and Accident Propensity for Safer Fleets and Smart Cities

Smarter cities and safer roads start here: Unveiling the impact of collective vehicular conduct within an intersection on accident propensity

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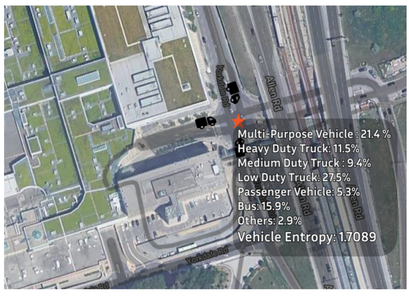

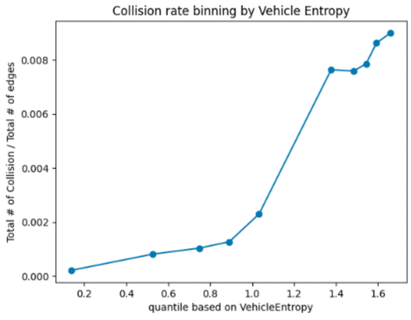

PROJECT SUMMARY

The safety of roadways is intricately tied to the dynamic interplay among driving behavior, road conditions, and environmental factors. In our research of comprehending road conditions, this study delved into the investigation of intersection dynamics. We intend to reveal the influence of collective behavior of vehicles within intersections on accident propensity. Through rigorous analysis and experiments on data from over 2 million connected vehicles, this research explored crucial intersection metrics, including traversal time, turning distribution, road types, and vehicle components. Additionally, we have devised a two-tiered feature framework to assess intersection risk. The first tier comprises straightforward statistics and analysis of raw driving data, while the second tier involves derivative features that measure intersection complexity and intricacy. The efficacy of our features in forecasting road safety within our cities has been analyzed and verified, offering invaluable insights for urban planners, traffic engineers, and policymakers. We believe these features are able to numerically represent the behaviour and infrastructure of the intersection and can help pave the way for smarter cities and safer roads.

GEOTAB

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