Here's What (and Whom) to Avoid When Driving

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Introduction

We analyze traffic fatality data provided by the National Highway Traffic Safety Administration (NHTSA) to assess various predictors of traffic fatalities and develop a limited profile of the circumstances associated with traffic fatalities.

Exploratory Analysis and Visualization

Geographic Patterns

Time Trends

Daily Cycle

At the national and state level, the cycle of fatal accidents throughout the day is fairly consistent. There is a local maximum in the early morning, correlating with morning rush hour. Beginning just before noon, the level of fatal accidents rises consistently to peak at between 7 and 8PM, before declining steadily through to about 3 or 4 in the morning.

(Insert National graphic)

With State-by-State plots, the daily fatal accident cycle is roughly similar, without significant change. The below plots show results from shape-based time series clustering of different states, according to daily fatal accident patterns.

(Insert side-by-side state-level centroid plots)

Weekly Cycle

Selected Predictors of Traffic Fatalities

Driver Behavior

Drugs/Alcohol Distraction

Car Manufacturer

Environmental Conditions

Conclusion

References

Batterman, Stuart, Richard Cook, and Thomas Justin. "Temporal variation of traffic on highways and the development of accurate temporal allocation factors for air pollution analyses." *Atmos Environ.* Apr. 2015.

Zador, P.L, S.A. Krawchuk, and R.B. Voas. "Relative Risk of Fatal Crash Involvement by BAC, Age, and Gender." *U.S. Department of Transportation - National Highway Traffic Safety Administration.* Apr. 2000.