

IBM Data Science Capstone Project Car Accident Severity (Week 2.1)

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1 Business Understanding

Road traffic accidents are a major source of human and economic hardship in most advanced economies, with consequences that can range from minor property/vehicular damage to major damage, personal injury, or death. It is estimated that road traffic accidents cost the United States' economy \$810 billion per year, including costs due to property damage, legal costs, and associated medical bills [1]. It is therefore of paramount importance that we understand the factors influencing the likelihood of a road traffic accident occurring at a given location, as well as those which influence the severity of those accidents that do occur. Intuitively, we might expect that some of the factors which influence the likelihood and severity of a road traffic accident include: the weather, local road conditions (i.e. highways, urban areas or rural roads), time of day (and the presence or absence of street lights), and the number and type of vehicles in the area. Additional factors that may influence the frequency and severity of road traffic accidents include those which can be traced to individual irresponsibilities, such as driving under the influence of alcohol/narcotics, driving without due care and attention, or driving at excessive speed. While it is intuitive that a combination of these factors may be important, intuition alone cannot determine the relative significance of these factors, which is required in order to fully understand the causes of road traffic accidents and devise new strategies to minimize their occurrence and severity.

The target audience for this work will be city planners and emergency service responders: it is hoped that by understanding the factors influencing the frequency and severity of accidents, it will be possible to improve the design of the road network and better prepare for how to deal with accidents when they unfortunately arise.

References

- [1] <https://www.pbs.org/newshour/nation/motor-vehicle-crashes-u-s-cost-871-billion-year-federal-study-finds>