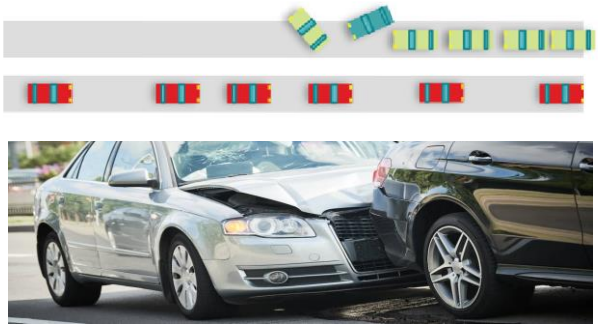

Pre-accident prediction and probability estimation with simulation

Problem description

Yearly, well over 1 million people die on roads worldwide, with over 40,000 in the US and over 600 in the Netherlands. While traffic safety may be a priority for many governments, it has not stopped the cull of people on our roads. For a long time, it has been almost impossible to simulate traffic safety in simulation models due to the inherent collision-free logic that many models harbour. Moreover, many of the accident mechanisms of accidents related to human driving error were just not feasible in these models. In recent years, new types of simulation models have been developed that increasingly allow for driver error and safety analysis. Being able to use these models to not just evaluate safety, but start to predict safety, offers the ability to test many more future traffic situations for their potential benefit to improve traffic safety and reduce causalities.

Objectives & Assignment

The objective of this project is to develop an approach and test if a state of the art model (OpenTrafficSim) is capable to be used to predict accidents before they take place. This will involve analysing data, proposing improvements and carrying out data analysis on simulated and real data to see if accidents can be predicted before they take place. Furthermore, a method may also be constructed that allows the probability of accidents to calculated and applied as an additional safety indicator.

This Master thesis can include an internship at SWOV or another relevant organisation

Research group

DiTTlab / Traffic Safety lab, Transport & Planning Department

External support

Rijkswaterstaat

Information

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