

Predicting driver intentions

Cristofer Englund, Stefan Karlsson

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Contact: stefan.karlsson@hh.se

1 Background

Vehicles become increasingly automated with adaptive cruise control, lane keeping aid, automated parking assist and platooning being a few examples. These functions mitigate the burden of driving as well as address the challenges that the traffic systems are facing, namely: environmental, safety and comfort.

The new generation cruise control works by adaptively adjusting the speed to that of the surrounding traffic. It reduces sudden speed changes which reduces the environmental impact. Mechanism for following the lane helps the driver to safely keep the vehicle on the road while the automated parking assist is useful as the driver needs support to park the vehicle. For other functions such as collision avoidance systems the vehicle may react, by either steering or braking (or both). These systems could be made more efficient and trustworthy if awareness of the intentions of the driver was accurately estimated and incorporated.

This master thesis will conduct experiments on the data from FOT projects. This data is from the vehicles during every-day-use. The current database consists of vehicle Controller Area Network (CAN) data and video material from cameras in the vehicle both facing the road and the driver from 100 cars and 20 trucks.

2 Project description

The goal is to investigate if and how it is possible to predict the drivers actions and intentions in a predefined limited number of scenarios.

The project will develop knowledge in driver intention prediction. The scenarios to study will be defined in the beginning of the project and the data will be extracted from the FOT database. Investigations on and evaluation on methods that are suitable will be performed. Based on the experimental investigations a final method will be proposed and the results will be presented.

The estimated time needed for the project is 20 weeks.