Using Machine Learning for Misbehavior Detection in CACC

Modern vehicles will use communication to increase the safety of its passengers, reduce fuel consumption, travel time, and more. The communication between the vehicles will be mainly beacon messages containing the speed, position, acceleration and other properties. These messages need to be validated, if they contain correct (plausible) information. For example, when a vehicle is suddenly stopping, but sending an increase in speed, the following vehicles may crash into the misbehaving vehicle.

In literature, there is already existing work on detecting misbehavior in the data with different techniques such as subjective logic or machine learning.

In this project, we will analyze the VeReMi data-set with the help of different machine learning algorithms. The number of algorithms compared is depending on the scope (credits). The student can choose the framework, e.g. PyTorch.

Master's Thesis	**30** CP
Bachelor's thesis	**12** CP
Project	**8/16** CP

Suitable for all students who are interested in Machine Learning, Anomaly Detection and Vehicle Communication. However, existing knowledge of ML is beneficial.

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If your are interested or you need additional details, feel free to contact me or drop by for a non-binding chat.