



## **Thesis Topic**

Bachelor/Master/Diploma Thesis  
Studienarbeit/Diplomarbeit

**Title:** Active learning based QoS prediction for V2X communications

### **Problem Statement**

Quality of Service (QoS) requirements such as data rate, reliability, and end-to-end (E2E) delay that need to be satisfied despite the highly-dynamic nature of vehicular networks. Therefore, need to investigate how well the collected data is suited for achieving a reliable QoS prediction. In the majority of the current literatures is based on simulations and is an open question if simulated data capture precisely enough real dynamics (reliable QoS prediction). In the recent years machine learning is proposed to replace traditional algorithms. Based on real measurements from a large test network this thesis will evaluate reliable QoS prediction of based active learning for V2X communications .

### **Tasks**

- Fundamentals studies about the QoS prediction and its impact on the applications.
- Studying the channel characteristics from the measurements and modelling it.
- Using the modelled channel evaluate the theoretical performance and comparison with the predicted one.
- Study of QoS metrics that can evaluate performance and are less susceptible to simulation inaccuracies.

### **Expected Skills**

- Interested students should have a background on data and statistical analysis or an interest to learn.
- At the end of the thesis the candidate would have developed exceptional skills in the area of working with real network data

### **Contact Person**

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