

Bachelor/Semester/Master/IDP

## Teleoperation Watch-Dog: Monitoring a Remote-Support-System for AVs



Autonomous Driving is one of the megatrends of our time. It offers the possibility to increase the safety on our roads, the fairness of our mobility-system and the time spent driving can be used better. But even though autonomous vehicles promise those incredible advantages, they still are not deployed on public roads, because these systems cannot guarantee safe operation in all traffic situations. This is where Teleoperation comes into play. Teleoperation is a key-technology for autonomous driving. It enables a human operator to connect to a vehicle from any location and to support the vehicle in its decision making. The strengths of the human and the autonomous driving system can be combined and this makes it possible to solve any situation the autonomous vehicle gets stuck.

The goal of this work is to improve the safety while remotely supporting autonomous vehicles. Therefore, it is essential to monitor the state of the system. Imagine a situation where the connection to the cellular network the vehicle is connected to decreases drastically. In such a situation we need a module that can detect this degradation and takes according actions. The final outcome of this work is a visualization of the current system-state for the remote operator and the safety driver.

The work is done within the [EDGAR-Project](#), you will collaborate with other students and highly motivated PhDs will supervise you. The goal is to implement a system that can be used on the vehicle on public roads, therefore you will gain hands-on-experience on a state-of-the-art research vehicle.

Experience with programming languages such as C++ or Python, familiarity with Robotics (ROS2), or prior exposure to Autonomous Driving are advantageous. The thesis can be written in German or English.

I am looking forward to receiving your application with your CV and your Transcript of Records!

### Contact

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