

## ***Evaluation of NVIDIA Omniverse for Sensor Data Generation in Automated Driving***

Research on the topic of sensor data generation in automated driving is being conducted at the Institute of Automotive Engineering Darmstadt (FZD) in collaboration with Porsche Engineering. In this thesis, it will be researched to what extent NVIDIA Omniverse can be used to generate sensor data for automated driving.

### **Tasks:**

- Research on NVIDIA Omniverse and automated driving incl. simulation, V&V, sensors and sensor modeling, scenario-based testing
- Development of an interface between the CARLA simulator and NVIDIA Omniverse
- Research on custom sensor modeling and integration in NVIDIA Omniverse (e.g., cameras, Lidars)
- Sensor data generation in NVIDIA Omniverse based on vehicle position and orientation computed in CARLA
- Conduction of scenario-based tests of modeled sensors including comparison to real data

### **Profile:**

- Good knowledge of simulation environments in the area of automated driving (e.g., CARLA)
- Ideally knowledge about advanced driving assistance systems, automated driving and automotive sensors (Lidar, camera)
- Ideally first experience with ROS 2 and C++/Python

**NOTICE: All projects and theses at FZD can be done in English or German, as preferred.**

**ANMERKUNG: Alle Projekte und Arbeiten bei FZD können wahlweise in Englisch oder Deutsch durchgeführt werden.**