University of Stuttgart
Germany

# SUPER – Stuttgart University Program for Experiencing Research
# Project Information

**Institute's Information**


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|---|---|
| Name of Institute | Institute of Robust Power Semiconductor Systems (ILH) |
| Contact Person | Jeremy Nuzzo, Marc Günter |
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**Duration of Project/Number of Students**

| | |
|---|---|
| June/July | |
| June/July/August | >= 2.5 months |
| Number of Students | 1-2 |

**Name of Project** Extending a Coupled Driving Simulator to Generate Real-World Drive Cycles

**Beneficial Skills & Knowledge**

- Basics of Wide Bandgap Semiconductors
- Good skills in Python/Simulink/ Matlab Programming
- Electrical Motor Principles
- Interest in Programming of Video Games

**Description of Work**

This project offers students the opportunity to extend an existing coupled driving simulation that is integrated with a digital twin. The main objective is to enhance the simulation by incorporating a real-world city map and enabling automated route generation and navigation. These routes will then be executed virtually within the digital twin environment to analyze and evaluate the Remaining Useful Lifetime (RUL) of vehicle components. Participants will work on integrating mapping data, implementing automatic route planning algorithms, and developing the necessary interfaces between the driving simulator and the digital twin. This project provides an excellent opportunity for students interested in vehicle simulation, digital twins, and predictive maintenance through data-driven analysis.

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