

# Student Assistant / Thesis

## Software Development in the AUTOTech.agil Project

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### Problem Statement

Germany's leading universities in the field of automated driving have joined forces with selected specialists from industry in the BMBF funded AUTOTech.agil project to develop an open system architecture for the future of mobility. Building on the disruptive vehicle and software architecture developed in the UNICARagil project, AUTOTech seeks to expand the software architecture beyond a single vehicle, to enable efficient distribution and automated updates to the vehicle's intelligence and improve on existing runtime-integration methods.



I11 is responsible for the software architecture in the AUTOTech.agil project. To address the new research questions posed in the AUTOTech project, the automotive service-oriented software architecture (ASOA) needs additional development. To expand the software architecture beyond the vehicle, new communication interfaces and paradigms need to be designed and implemented to interact with other vehicles and intelligent roadside infrastructure. For updates to the vehicles intelligence, concepts for Over-The-Air updates and efficient distributions of the vehicles services have to be developed. In order to improve the existing runtime-integration methods, new formal models for internal states and the transitions between them must be conceived and built. To support the project, we offer student assistant positions as well as BA/MA theses.

### Your Tasks

- ▶ Support in the design and implementation of the software architecture
- ▶ Porting of code on automotive-grade microcontrollers
- ▶ Development of tooling and modelling tools

### Your Profile

- ▶ Reliable and motivated student
- ▶ Experience with C/C++, Python
- ▶ Experience with embedded systems and Linux

### Our Offer

Positions are to be filled as soon as possible and are limited to 3 months. If suitable, an extension is possible/desired. The regular weekly working hours are 7-9 hours.

### Contact

Please read our [Instructions for Applications](#).

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