



RESEARCH INTERNSHIP IN REINFORCEMENT LEARNING

fortiss is the research institute of the Free State of Bavaria for the development of software-intensive systems with headquarters in Munich. The scientists at the institute cooperate in research, development and transfer projects with universities and technology companies in Bavaria, Germany and Europe. The focus is on research into state-of-the-art methods, techniques and tools for the development of software and AI-based technologies for dependable, secure cyber-physical systems such as the Internet of Things (IoT). fortiss is organized in the legal form of a non-profit limited liability company. Shareholders are the Free State of Bavaria (majority shareholder) and the Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V. www.fortiss.org

We are looking for Master students who would like to complete their research internship in our research project "[KI-Wissen](#)" in autonomous driving where we aim at improving the performance of our reinforcement-learning-based behavior planner via reward shaping approaches. For the development of the approaches, an in-house developed semantic simulator [BARK](#) is to be used.

Your tasks:

- Literature research and implementation in the following topics:
 - Multi-objective reinforcement learning
 - Reward shaping with temporal logic such as signal temporal logic

Your profile:

- Master student currently enrolled in Electrical and Computer Engineering or a related field.
- Practical experience in programming languages such as Python, C++.
- Good background knowledge in deep reinforcement learning and behavior planning.
- Excellent communication skills in English.
- Nice to have: Experience with temporal logic

Our offer:

- An international and dynamic work environment with highly qualified colleagues.
- Increased experience with behavior planning in realistic simulated environments.
- Flexible working conditions, e.g., home office, flexible working hours.
- Possibility to pursue your Master's thesis on any of the above-mentioned topics.

Please submit your application with a detailed CV and a current transcript.

Contact for details or direct application: Esra Acar-Celik, acarcelik@fortiss.org