RESEARCH INTERNSHIP IN MULTI-AGENT ADVERSARIAL TRAINING

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 a Master student who would like to complete their research internship in the field of autonomous driving where you play a pivotal role in adapting the Protagonist Antagonist Induced Regret Environment Design (PAIRED) strategy into Closed-loop Adversarial Training (CAT) framework in the domain of autonomous driving. With the multi-agent setup, this integration aims to dynamically regulate the difficulty of the generated driving scenarios evolving with the driving capabilities of the reinforcement learning agent.

Your tasks:

- Explore the feasibility of the adoption of PAIRED strategy in autonomous driving domain.
- Analyze and interpret data to identify patterns and insights related to scenario difficulty and system robustness.
- Document findings and contribute to research papers.

Your profile:

- Master student currently enrolled in Electrical and Computer Engineering or a related field.
- Practical experience in Python and Tensorflow/Pytorch.
- Good background knowledge in reinforcement learning.
- Excellent communication skills in English, both written and verbal.
- Prior experience with adversarial training is a plus.

Our offer:

- An international and dynamic work environment with highly qualified colleagues.
- Increased experience with machine learning in autonomous driving.
- Flexible working conditions, e.g., home office, flexible working hours.
- Possibility to pursue your master's thesis on further autonomous driving topics.

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

Contact for details or direct application: Xiangzhong Liu, xliu@fortiss.org

Published on 13.03.2024.