Schreibe deine Abschlussarbeit im Technologietransferzentrum unbemannte Flugsysteme

The thesis will focus on Swarm Drone Navigation and Autonomous Systems.

We are looking for a talented and motivated researcher to join our team, focusing on advancing swarm drone navigation. The goal of this project is to improve Kalman Filter techniques with reinforcement learning (RL) methods to enhance navigation, localization, and obstacle avoidance in dynamic environments. This framework will integrate state-of-the-art RL algorithms to refine Kalman Filter performance, enabling efficient, adaptive navigation in real-time within challenging and unpredictable settings. The emphasis is on achieving precise localization and autonomous obstacle avoidance, marking a significant advancement in swarm robotics and artificial intelligence for aerial systems

Ihre Aufgaben

- Reviewing current RL methodologies and their applications in robotics.
- Implementing an RL algorithm that enables a robot to learn from interactions with its environment in real-time.
- Integrating the RL framework with the Robot Operating System (ROS) for robust robot control and simulation.
- Conducting experiments in a simulated scenarios to validate the effectiveness of the RL approach.
- Analyzing the performance of the RL system in various environments.

Ihr Profil

- Expert in Robot Operating System (ROS).
- Knowled in reinforcement learning theories and their practical applications to robotics.
- A foundation in computer science, robotics, or a related field, with an emphasis on machine learning and artificial intelligence.

Kontakt

Dr. Amin Basiri
amin.basiri@thi.de

Prof. Dr. Gerhard Elsbacher
gerhard.elsbacher@thi.de

AImotion Bavaria

Technische Hochschule Ingolstadt
Technologietransferzentrum Unbemannte Flugsysteme