

Drone Acrobatics

Master Thesis Proposal in Robotics and AI



Performing acrobatic maneuvers with micro aerial vehicles (MAVs) is extremely challenging as these platforms push their physical limits. The main purpose of this thesis is to use deep learning techniques to perform these maneuvers. The proposed method should be evaluated in drone racing environments.

- The main aim is to consider 3D environment and perform fast acrobatic maneuvers
 - The machine learning techniques such as reinforcement Learning is suggested
 - The required sensors can be installed on the MAV, but due to payload minimum sensor is suggested.
- The project needs a good end demonstration with MAV and the participant should finally test her/his algorithm on real experiment.
- The participant has a weekly discussion with her/his supervisor in order to be guided.
- The Python Tensorflow package is suggested and the method should be implemented in ROS in order to be validated and directly placed to the real platform for experiments.

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