

Development of Augmented Reality for Pilots of Unmanned Aerial Vehicles

Master Thesis Proposal in Automatic Control



Description:

The aim of this project is to develop Augmented Reality (AR) as a tool for inspection/maintenance operations, with the goal of easing and simplifying remote, (semi) autonomous operations of Unmanned Aerial Vehicles (UAVs). With AR, the human operators of the UAV will experience a supportive environment, boosting their productivity, and improving safety, while simplifying the Human-to-Robot interfaces through intuitive AR interfaces. This will include overlaying information on the video and audio streams of the pilot, which for example can be distances to obstacles, remaining flight time, battery information, or audio queues for assisting the pilot.

Objectives:

The task is to develop a software-based visualization system for UAVs that will provide pilots an augmented reality view atop the existing video feed. This project will include creating a modular visualization software, where the information to be presented can be switched depending on the system mission needs, summarized as:

- Getting familiar with UAVs' and pilots' needs, what is useful information to visualize / provide over audio
- Getting familiar with Augmented Reality, how to overlay information
- Interface with the existing system for available data
- Implementation of an appropriate GUI for visualization

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¹ <https://epson.com/For-Home/Wearables/Smart-Glasses/Moverio-BT-300FPV-Smart-Glasses-%28FPV-Drone-Edition%29-p/V11H756020F>