Multi-robot Collaboration for Physical Work-task Execution

Master Thesis Proposal in Automatic Control

Multi-agent systems are gaining more and more attention since they can be utilized in a wide range of applications, such as search and rescue missions, space exploration, security patrols, traffic control, agricultural vehicles, garbage collection, mapping and land mine removal. The aim of this thesis is to provide a controller for multiple UAVs and their manipulations in order collaboratively execute a task.

- Two master thesis student can work collaboratively on this thesis. One with focus on controller for multiple UAVs and another on a controller for manipulators in order to form a defined task.
- Contact sensor or vision sensors can be used for manipulation.
- The algorithm should consider the uncertainty in the environment such as dynamic obstacles.
- The project needs a good end demonstration with multiple UAVs and the participant should finally test her/his algorithm on real experiment.
- The method should be implemented in ROS in order to be validated and directly placed to the real platform for experiments.
- The participant has a weekly discussion with her/his supervisor in order to be guided.

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