Bla

Authors

I. OUTLINE

1) Introduction
2) Motivating example: hexrotor that is unstable/poor-performing with MPC because of actuation delay Operating at lowest delay (= worst performance) is not good either How can we reduce the actuation delay while keeping a handle on estimation error? Anytime control formulation explicity accounts for delay/error and optimizes over it. A delay-error trade-off curve + control formulation that accounts for it
3) Control problem and solution MPC control formulation Solution
4) Delay-error curve Perception and estimation toolchain. Each component has knobs that make it anytime. Perception+estimation is a task with varying utility and execution time. The controller schedules the task with the best utility/execution time. this is also a utility/computation power trade-off. Example: corner detection for visual odometry Example: Yash's OpenCV toolchain: flowgraph and potentially curves.
5) Experiment Show the curve on the quadrotor with ordroid (or maybe move to previous section) Computation power Experimental setup Take system from intro and show results with RAMPC: better performance/ stable. Degradation experiment: as we decrease control frequency and increase flying speed, performance degrades. How does degradation compare between the two.

*This work was partially supported by the grants ???

The Department of Electrical and Systems Engineering, University of Pennsylvania, Philadelphia, U.S.A. {emails}@seas.upenn.edu