PhD Dissertation Defense Announcement
Mechanical and Aerospace Engineering Department
University of Texas at Arlington

AUTONOMOUS GUIDANCE OF UNMANNED COMBAT AIR VEHICLES IN BASIC FIGHTER MANEUVERING

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9:00 am, Friday, December 4th 2020

Microsoft Teams Link

Abstract

Basic fighter maneuvering, or BFM, is the dynamic engagement of two or more aircraft in close-range air combat. The relatively recent introduction of advanced unmanned combat air vehicles (UCAVs) has opened the possibility for automated systems to be players in this arena of air-to-air combat, which has thus far been limited to manned aircraft. In order to design an unmanned system that could fight and win a BFM engagement, the system must include an advanced system for guidance and control. This paper covers a dissertation proposal for a new guidance method, leveraging tools from gain scheduling and synthetic waypoint guidance, in order to address the capability for UCAVs to execute autonomous BFM.