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Spring 2021

Analyzing and Improving Calculation and Tuning Process for a UAV

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Analyzing and Improving Calculation and Tuning Process for a UAV

Laurel Wardell

Department of Mechanical Engineering

Honors Research Project

Submitted to

The Honors College


Approved:



Date 4/29/21
Honors Project Sponsor (signed)

Manigandan Kannan

Honors Project Sponsor (printed)



Date 4/30/2021
Reader (signed)

Scott Sawyer

Reader (printed)




Date 5/1/2021
Reader (signed)

Harry Harris

Reader (printed)

Accepted:



Date 5/3/2021
Department Head (signed)

Sergio Felicelli

Department Head (printed)



Date 4/30/2021
Honors Faculty Advisor (signed)

Scott Sawyer

Honors Faculty Advisor (printed)

Date _____
Dean, Honors College

Honors Research Project Proposal





Please Print

Name: Laurel Wardell	Student ID: 3114382
Email (@zips.uakron.edu): lbw15@uakron.edu	
Title of Proposed Project: Analyzing and Improving Calculation and Tuning Processes for a UAV	
Major: Aerospace Systems Engineering	Graduation (semester/year): Spring 2021

Please include a brief (maximum 200 words) summary of your proposed project

This project will analyze and improve the control calculations and controller tuning process for a UAV. By documenting and improving the processes, the efficiency of the system will improve as well as the utility of the system for the company. This project is confidential.

Approval:

Honors Course No.: 4900:497	No. of Project Credits: 2
Honors Project Sponsor Signature/Date  Print name Dr. Manigandan Kanaan Email: mk77@uakron.edu	
Reader Signature/Date  2/1/2021 Print name Harry Harris Email: hjh5@zips.uakron.edu	
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Your approved cover sheet and proposal must be [submitted to the Williams Honors College through IdeaExchange](#)

ABSTRACT (PUBLIC RELEASE VERSION)

The nature of this project is confidential and cannot be disclosed in detail. Generally, this project deals with the analysis of a control system of a UAV with several electric motors and gimbals. The goal of this analysis is to improve control calculations for increased stability. In addition, development has been started on an application to streamline the tuning of gains for this particular controller, allowing for more efficient use of precious flight time.