ANDREW FABIAN
COMPUTER ENGINEER

Flight Controls Experience
Interested in Control Laws and Autonomy
Portfolio: https://afabian.com

EXPERIENCE

LOCKHEED MARTIN
FLIGHT CONTROLS ENGINEER | 2020–PRESENT

- Responsible for design & implementation of a flight controls subsystem on a next-generation prototype aircraft. Generated requirements, software, and testing apparatus.
- Developed fast and effective communication skills for working within a large and disperse engineering team.
- Generated and ran engineering test cases and software test cases for a formal testing program.

VCU GRADUATE SCHOOL
PHD CANDIDATE | 2018–2020

- Developed an indoor navigation system for multi-rotor drones, utilizing AprilTags, visual odometry, occupancy grids and A* pathfinding algorithms.
- Geolocation research: using a series of target photos taken from a fixed-wing drone, determine through gradient descent the optical calibration values for that drone and use them to refine the target position. Achieved repeatable accuracy of 2 ft from 400 ft altitude.
- Underslung load stabilization system: Using angle sensors, stabilize a hanging load against pendulum motion, while still allowing for full flight control.

ZIMBRO AERIAL SYSTEMS
UAV CONSULTANT & FAA PART 107 OPERATOR | 2018–2020

- Designed, test-piloted, and documented fixed-wing UAV for post-tornado survey operations.
- Participated in training operations for law enforcement and fire & rescue officers towards FAA Part 107 drone operations.

ACHIEVEMENTS

- Next-Gen Helicopter Software Design & Qualification
- Lead developer of FCS now used in all VCU SUAS research
- AUVSI SUAS team captain
- IEEE Student Org president

SKILLS

SIMULINK & MATLAB
DOORS & CAMEO
DAL & DO-178
EMBEDDED PROGRAMMING
SUAS DESIGN & FLIGHT TESTING
C/C++, CUDA, VHDL, Python, RTOS

EDUCATION

WORCESTER POLYTECHNIC INSTITUTE
CONTINUING EDUCATION CLASSES
RRT / PATHFINDING | 2022

VIRGINIA COMMONWEALTH UNIVERSITY
ECE GRADUATE SCHOOL
PHD IN ENGINEERING
3.9 GPA | AUGUST 2020

VIRGINIA COMMONWEALTH UNIVERSITY
ELECTRICAL AND COMPUTER ENGINEERING
BS IN COMPUTER ENGINEERING
3.5 GPA | AUGUST 2016

VCU GRADUATE SCHOOL

RESEARCH ASSISTANT | 2017–2018

- Collaborated with University of Virginia to develop and demonstrate an experimental VTOL Delta Wing aircraft with gimballed EDF motors. Developed algorithms for transition phases of VTOL flight, and worked with airframe designers to determine power system requirements and component selection. Successfully demonstrated full-envelope FCS-controlled VTOL flight.

FULL-STACK WEB DEVELOPER

SELF-EMPLOYED | 2004–2014

- Developed custom code & database solutions for large clients.
- Optimized database design for a high-traffic (1000's of hits per second) website. Developed backup and hardware migration strategies.
- Was the "go-to guy" for clients' for website issues.

INTERESTS

UAV FLIGHT CONTROLLERS
CONTROL & MOTION ALGORITHMS
SYNTHESIZERS
BIKING