

William Frederick Koch III

Hudson, MA

☎ (+1) 203-980-3546 | ✉ wfkoch@gmail.com | 🏠 wfk.io

Summary

Expert in machine learning with applications in flight control and forecasting performance. Creator of the world's first neural network supported flight control firmware. Experienced software engineer with over six years in the aerospace industry developing software to monitor and support aircraft health. Skilled multicopter pilot, designer and builder.

Experience

Boston Drone Racing

Boston, MA

FOUNDER

Jan. 2017 - Present

- Responded to growing demand for a drone racing community in Boston by establishing a first-person-view (FPV) drone racing and hacking club which hosts weekly races and monthly hack nights.
- Mentor and advisor for building custom multicopters, from fabrication to software tuning.

Capsules, LLC

Madison, CT

Co-FOUNDER/CEO

June 2013 - Aug. 2014

- Led team to create a geo-location based augmented reality mobile app.
- Lead Android developer responsible for overall architecture, design and implementation.

Sikorsky Aircraft (subcontracted through AIS Consulting and Sila SG)

Shelton, CT

SOFTWARE ENGINEER

Jun. 2006 - Jan. 2012

- Lead developer for applications supporting the Sikorsky CH-53K Integrated Support System (ISS) for fleet management and IVHM.
- Responsible for integration between the Sikorsky CH-53K Integrated Support System (ISS) and Goodrich ground support software (GSS).
- Designed and implemented continuous integration environment.

Education

Boston University

Boston, MA

PHD IN COMPUTER SCIENCE

Sept. 2014 - Sept. 2019

Thesis: Flight Controller Synthesis via Deep Reinforcement Learning

- Developed novel training environment, GymFC, for synthesizing neural network based flight controllers, in simulation, for any aircraft.
- Created world's first neural network supported flight control firmware, Neuroflight, capable of high performance flight in the real world.
- Established methodologies for creating high fidelity aircraft models, a *digital twin*, for simulation training.
- Evaluated firmware and aircraft models via SITL and HITL.
- Researched trajectory generation methods, using genetic algorithms, for the PX4 flight control firmware communicating over MAVLink.
- Teaching fellow for the class Fundamentals of Computing Systems. Taught weekly lessons for 100+ students.

Stevens Institute of Technology

Hoboken, NJ

M.S. IN COMPUTER ENGINEERING

Jan. 2012 - Dec. 2013

Thesis: A Framework for Assisting Learners by Incorporating Knowledge to Aid in Predicting Nerve Guidance Conduit Performance

- Studied machine learning with a focus in training neural network models with limited data.
- Machine learning expert on multi-disciplinary team to advance nerve guidance conduit performance.
- Developed novel machine learning algorithms to predict nerve guidance conduit performance.

University of Rhode Island

Kingston, RI

B.S. IN COMPUTER ENGINEERING, MINOR IN MATHEMATICS

Sept. 2003 - May 2008

- Pursued studies in artificial intelligence and robotics.
- Built a number of projects including a 16-bit CPU on an FPGA, modified Quake Engine to extend artificial intelligence capabilities of agents, Zigbee controlled hovercraft, and health monitoring system for a Honda Civic.

Skills

Python | C/C++ | Java | Git | Linux | Network Security | Motor Modelling | SITL/HITL testing | Multicopter design and construction

Interests

Aviation | Drone Racing | 3D Modeling and Printing | Backpacking | Camping | Cooking | Snowboarding | Surfing | Music