Timothy Devon **Morris**

Roboticist · Electrical Engineer · Applied Mathematician

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"Have a healthy disregard for the impossible"

Summary

Current Ph.D Candidate at Brigham Young University. Strong mathematical and programming background due to undergraduate degree in applied mathematics. Passionate about solving robot autonomy by merging classical, geometric and deep learning approaches. Specialist in estimation and control of fixed-wing and multi-rotor UAVs. Obsessed with Linux, the open source movement and the Vim editor. Hungry for opportunities to tackle hard problems, such as large-scale SLAM, robot perception, and self-driving cars.

Work Experience

Brigham Young University

Provo, Utah

Research Assistant

April 2017 - Present

- Created a ROS network to perform a GPS-denied target-tracking handoff
- Incoroporated Arduplane SIL into Gazebo simulation
- Wrote an quaternion complementary filter to estimate the attitude of a fixed-wing UAV in a GPS-denied setting
- Performed numerous flight tests at BYU and AFRL sites
- Wrote a Monte Carlo Tree Search algorithm for multi-agent path planning

BWX Technologies

Lynchburg, Virginia

Intern

May 2014 - March 2017

- Performed Ultrasonic analysis of large naval nuclear components
- Helped develop novel Full Matrix Capture scanning technique

Education

Brigham Young University

Provo, UT

Ph.D in Electrical Engineering

Apr 2017 - Apr 2021

- Fully funded through a graduate fellowship

Brigham Young University

Provo, UT

B.S. in Applied and Computational Mathematics

Sept 2011 - Apr 2017

- Awarded an eight semester full tuition scholarship

Skills & Technologies

Programming Languages

- Modern C++
- Python
- Matlab
- Bash

Technologies

- Git
- ROS
- Gazebo
- Tensorflow
- Mavlink
- OpenCV
- Pixhawk & Arduplane
- Linux
- Vim

Concepts

- Kalman Filters
- Particle Filters
- Geometric Complementary Filters
- Modern Control Theory
- SLAM
- Deep Learning
- Autopilot Design
- Robotic Vision