Timothy Devon **Morris**

Roboticist · Electrical Engineer · Applied Mathematician

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Summary

PhD candidate at Brigham Young University in electrical engineering. 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, geometric estimation, robot perception, and self-driving cars.

Work Experience

Magicc Lab

Provo, Utah

Research Assistant

April 2017 - Present

- Perfomed GPS-denied target handoff
- Incorporated Arduplane SIL into Gazebo simulation
- Wrote a complementary filter for fixed-wing attitude estimation
- Performed numerous flight tests at BYU and Air Force sites
- Wrote a Monte Carlo Tree Search algorithm for multi-agent path planning

Brigham Young University

Provo, Utah

Teaching Assistant

August 2017 - December 2017

- Taught students to use ROS environment
- Guided students through estimator and controller design on 3 DoF multirotor

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

PhD in Electrical Engineering

Apr 2017 - Present

- 4.0 GPA
- Fully funded through a graduate fellowship

Brigham Young University

Provo, UT

B.S. in Applied and Computational Mathematics

Sept 2011 - Apr 2017

- Graduated with Cum Laude honors and 3.94 GPA
- Awarded an eight semester full tuition scholarship

Skills & Technologies

Programming Languages

- Modern C++
- Python
- Matlab
- Bash

Technologies

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

Concepts

- State Estimation
- Linear & Nonlinear Controller Design
- Adaptive Control
- SLAM
- Deep Neural Networks
- Autopilot Design

Coursework

Engineering

- Autonomous Systems
- Flight Dynamics and Control
- Advanced Dynamics
- Robotic Vision
- Robotics
- Digital Signal Processing

Math

- Differential Geometry
- Linear & Nonlinear System Theory
- Optimal Control
- Math of Signals and Systems
- Stochastic Processes
- Detection & Estimation theory
- Optimization

Computer Science

- Deep Learning
- Bayesian Methods in CS
- Machine Learning