

# Timothy Devon Morris

ROBOTICIST · ELECTRICAL ENGINEER · APPLIED MATHEMATICIAN

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## Summary

Ph.D student at Brigham Young University. 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

### Magicc Lab

RESEARCH ASSISTANT

*Provo, Utah*

*April 2017 - Present*

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

### Brigham Young University

TEACHING ASSISTANT

*Provo, Utah*

*August 2017 - December 2017*

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

### BWX Technologies

INTERN

*Lynchburg, Virginia*

*May 2014 - March 2017*

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

## Education

### Brigham Young University

PH.D IN ELECTRICAL ENGINEERING

*Provo, UT*

*Apr 2017 - Present*

- 4.0 Graduate GPA
- Fully funded through a graduate fellowship

### Brigham Young University

B.S. IN APPLIED AND COMPUTATIONAL MATHEMATICS

*Provo, UT*

*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
- Robotic Vision
- Robotics
- Digital Signal Processing

### Math

- Linear and Nonlinear System Theory
- Optimal Control
- Math of Signals and Systems
- Stochastic Processes
- Optimization

### Computer Science

- Deep Learning
- Bayesian Methods in CS
- Machine Learning