Timothy Devon **Morris**

Autonomy Engineer · Applied Mathematician

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Summary

Engineer Passionate about solving robot autonomy by merging classical, geometric and deep learning approaches. Obsessed with learning new technologies, Linux, and the Vim editor. Hungry for opportunities to tackle hard problems, such as large-scale SLAM, robot perception, and autonomous vehicles.

Skills & Technologies

Programming Languages

- Bash
- C++ (Modern)
- CMake
- Matlab
- Python

Technologies

- GTest & GMock
- Git
- Linux
- OpenCV
- ROS & Gazebo
- RTI DDS
- Tensorflow
- Vim

Concepts

- Autopilot Design
- Bayesian State Estimation
- Deep Neural Networks
- Detect & Avoid
- Linear & Nonlinear Controller Design
- SLAM
- SOLID Design Principles
- Software Design Patterns

Work Experience

Aurora Flight Sciences

Cambridge, Massachusetts

Autonomy Engineer II

May 2019 - Present

- Designed a Detect and Avoid (DAA) system for autonomous aircraft
- Implemented distributed C++ services to perform conflict detection and resolution for DAA
- Deployed DAA system to SIL and PIL simulations
- Created meaningful unit tests and system level tests using GTest, GMock, GCov and Gitlab

Magicc Lab

Provo, Utah

Research Assistant

April 2017 - April 2019

- Performed GPS-denied target handoff
- Performed flight tets at BYU and AFRL test sites
- Wrote a complementary filter for fixed-wing attitude estimation
- Wrote a Monte Carlo Tree Search algorithm for multi-agent path planning

BWX Technologies

Lynchburg, Virginia

Engineering 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, Utah

M.S. in Electrical Engineering

Apr 2017 - August 2019

- 4.0 GPA
- Awarded Utah NASA space Grant

Brigham Young University

Provo, Utah

B.S. in Applied and Computational Mathematics

Sept 2011 - Apr 2017

- Graduated with Cum Laude honors and 3.94 GPA
- Emphasis in Electrical Engineering: Signals and Systems

Coursework

Full transcript and coursework available upon request