Timothy Devon **Morris**

Perception Engineer · Applied Mathematician

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Summary

Hungry for opportunities to tackle hard problems, such as large-scale SLAM, geometric perception, and L5 autonomy. Strong desire to produce systems that deliver business value and an exceptional user experience. Software craftsman & self-proclaimed vim master.

Skills & Technologies

Programming Languages

- C++17
- Python
- CMake
- Bash
- Lua

Technologies

- GTest & GMock
- Git
- Docker
- Linux
- OpenCV
- ROS
- Vim

Concepts

- Bayesian State Estimation & Tracking
- Graph-Based Probabilistic Modeling
- Multi-modal Sensor Calibration
- SLAM
- UAS Detect & Avoid
- SOLID Design Principles
- Software Design Patterns

Work Experience

Torc Robotics

Blacksburg, Virginia

Tech Lead & Product Owner - Sensors & Calibration Software

October 2021 - Present

- Designed and implemented factor-graph based Sensor to IMU calibration tool in C++17
- Decomposed work for 3 year plan to meet business MVP deliverables
- Coordinated with other teams to discover requirements and identify dependencies
- Hired, mentored and onboarded 3 engineers

Torc Robotics

Blacksburg, Virginia

Perception Engineer

October 2020 - Sept 2021

- Lead team in designing, implementing and delivering multi-modal calibration tool in C++
- Delivered calibration toolset saving Torc $2.5 million in operating costs annually
- Served as scrum master for team of 7 engineers

Aurora Flight Sciences

Cambridge, Massachusetts

Autonomy Engineer

May 2019 - Present

- Implemented distributed C++ services to perform conflict detection and resolution for detect & avoid applications
- Deployed detect & avoid system to software-in-the-loop and processor-in-the-loop simulations

Magicc Lab

Provo, Utah

Research Assistant

April 2017 - April 2019

- Implemented a fast complementary filter for fixed-wing attitude estimation
- Designed and Implemented a Monte Carlo Tree Search algorithm for multi-agent path planning

Education

Georgia Institute of Technology

Remote

M.S. in Computer Science

Aug 2020 - Aug 2023

- 4.0 GPA

Brigham Young University

Provo, Utah

M.S. in Electrical Engineering

April 2017 - August 2019

- 4.0 GPA

Brigham Young University

Provo, Utah

B.S. in Applied and Computational Mathematics

Sept 2011 - April 2017

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