

Thomas Keady

LINKS

Personal Website • thomaskeady.github.io
Linkedin • linkedin.com/in/thomas-keady/
CV • read.cv/thomaskeady

EDUCATION

JOHNS HOPKINS UNIVERSITY
BALTIMORE, MD
Cumulative GPA: 3.56

MSE IN ROBOTICS
May 2019
Baltimore, MD

**BS IN ELECTRICAL ENGINEERING &
COMPUTER ENGINEERING**
May 2018

SKILLS

PROGRAMMING LANGUAGES
Python 3 • C++ • Bash • C

TOOLS

ROS2 • Git • Docker • Jupyter • Eclipse •
MATLAB • Altium

OPERATING SYSTEMS

Linux • Windows 10 • MacOS

ACHIEVEMENTS

JOHN MUIR TRAIL
AUG. 2022 | CALIFORNIA, USA
Successfully thru-hiked 210 miles over
16 days

YOUNG MAKER COMPETITION
JULY 2019 | BEIJING, CHINA
Second Prize for Kinect-powered
weightlifting assistant

**DJI ROBOMASTER AI
CHALLENGE**
MAY 2019 | MONTREAL, CANADA
Third Prize, highest ranking American
team

HOBBIES

- Reading
- Rock climbing
- Board games
- Home automation

RELEVANT EXPERIENCE

MIT-PITT-RW | CORE TEAM MEMBER

- Dec. 2022 - present | Pittsburgh, PA
- Volunteering part time to improve racecar sensor data processing in C++, targeting reduced latency and robustness to diverse environments
 - Prepared for Indy Autonomous Challenge at CES, where the team placed 4th

GECKO ROBOTICS | ELECTRICAL ENGINEER

- Aug. 2019 - Nov. 2022 | Pittsburgh, PA
- Developed localization codebase for mobile robots in challenging environments
 - Developed algorithms to filter and interpret data from IMUs, odometry & 3D sensors
 - Designed finite state machines to drive sensors and implemented them using object-oriented programming principles
 - Researched, acquired & integrated diverse sensors & ground truth systems
 - Iterated data processing pipelines for system performance analysis, visualized results and presented to stakeholders
 - Designed, prototyped, integrated & deployed PCBs with custom firmware for mobile robot platforms
 - Wrote embedded firmware for robot telemetry & inter-board communication
 - Iterated board versions to improve reliability, DFM and DFA

FACTORYFOUR | RESEARCH & DEVELOPMENT TEAM MEMBER

- May 2015 - June 2018 | Baltimore, MD
- Designed and implemented scalable distributed architecture for 3D scanner with Raspberry Pis
 - Achieved wireless time synchronization (< 10ms max offset) between 32 Pis using NTP
 - Automated 3D model generation with Agisoft Photoscan API
 - Created fault-tolerant program for remote control of RepRap CNC machines

ELECTRONIC TRACKING FOR EARTH MOVERS | ADVANCED ECE TEAM PROJECT MEMBER

- Sept. 2016 - May 2018 | Baltimore, MD
- Developed proof of concept for a mobile tracking system to prevent collisions between heavy machinery and construction workers
 - Implemented Sequential Monte Carlo Particle Filter to estimate worker position relative to vehicle
 - Experimented with software protocols and hardware platforms including networks of RFduinos, BLE Beacons, and iPhone receivers
 - Won Best Technology Award and 3rd Place in Category at JHU Business Plan Competition 2018

APPLIED PHYSICS LABORATORY | ADVANCED APPLICATION SCHOLARS PROGRAM INTERN

- May 2016 - Aug. 2016 | Laurel, MD
- Wrote driver for lossless communication with wearable wireless sensing platform
 - Implemented dead reckoning calculations in C++ from multi-IMU array as outlined in "Foot-mounted inertial navigation made easy" publication from the OpenShoe Project
 - Created Java Native Interface for driver integration with existing Java projects
 - Modified solar battery charger to change buck-boost converter output from 12V to 25.2V