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
ROS 2 • 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 better estimation 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 data 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