ISAAC S. PERPER

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EDUCATION

Massachusetts Institute of Technology Cambridge, MA

B.Sc. Mechanical Engineering and B.Sc. EECS - 5.0/5.0 GPA - Pi Tau Sigma | Tau Beta Pi Eligible *June 2020*

Minor in Economics

Relevant Coursework: Automatic Controls, Signals and Systems, Manufacturing and Design I, Probability, Statistics, Intro to Machine Learning, Intro to Algorithms

WORK EXPERIENCE

Ford Research and Innovation Center Palo Alto, CA

Intern *Summer 2019*

- Worked on a self-contained project integrating vehicle control and vision system with simulation tools to test new research features in a simulated environment
- Engaged with multiple engineers responsible for specific components of the controls and simulation
- Won first place out of six teams at the office-wide summer hackathon

MIT CSAIL - PavLab Cambridge, MA

Student Researcher *Summer 2018, Spring 2019*

- Researched machine learning techniques for object detection using thermal imagery, including image segmentation and boundary detection
- Created battery management application for front-seat computer and sensors on REX unmanned surface vehicle
- Improved camera hardware with better mounting, camera, and lens selection
- Developed geo-location-based object identification to detect stoplights on preplanned autonomous routes

Augmenta Bioworks Mountain View, CA

Intern *Summer 2017*

- Developed a prototype automation system independently that will enable analysis of lab processes
- Built the system from the ground up, working on the design, fabrication, and controls side of the device
- Created Python-based control script to interface with several devices over serial communication protocols
- Used computer vision library to automate procedure commands

MIT Dept. of Nuclear Science and Engineering – Green Lab Cambridge, MA

Student Researcher *Spring 2017*

- Experimentally researched a quantifiable approach to improving the critical heat flux of various materials used in nuclear energy production through surface engineering
- Designed, machined, and fabricated test boiling chamber to use in tests

Vecna Robotics Cambridge, MA

Intern *January 2019*

- Updated primarily C++ software stack to run on latest Linux and ROS systems
- Merging proprietary changes with latest community updates and fixing unsupported software to work with newest libraries and other dependencies

LEADERSHIP

Phi Sigma Kappa Fraternity Boston, MA

President *Spring 2019*

- Oversee operations of each sub-department and housing, including serving as semester's risk manager
- Conduct weekly house meetings and review day-to-day issues such fulfillment of weekly jobs and fines

MIT Rocketry Club Cambridge, MA

Treasurer 2017-18 *2016- 2018*

- Designed and built test stand for solid rocket motors as a part of Ground Support Systems
- Oversaw spending and fundraising for a $40K budget, with the goal of reaching a record 80K flight

Eagle Scout Tiburon, CA

Scout *August 2009-June 2016*

- Collaborated with the local church to build and implement a user-friendly recycling and compost system
- Lead the troop on outings as Assistant Senior Patrol Leader and Patrol Leader

SKILLS

Software: SolidWorks, C++, Python, MATLAB, AutoCAD, Linux, Windows, CMake, Arduino, OpenCV
Building/Design: Prototyping, Laser Cutting, 3D-Printing, Machining and Fabrication, Waterjet

EXTRACURRICULAR ACTIVITIES

MIT Varsity Soccer Team, MIT Sandbox, Redwood Rocketry Club (9th Place Nationally), MATE ROV