Liam James Mulshine
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OBJECTIVE: MS Degree Candidate in Electrical Engineering with hands-on internship and lab experience in embedded system design, seeking to join a fast paced and inspiring engineering team and project

EDUCATION & EXPERIENCE:

Harvard College, Cambridge, MA – GPA: 3.945 **Aug 2014 – May 2018**

- Pursuing a joint AB/SM Degree in Electrical Engineering, with a focus on Embedded Systems and Controls
- Course Assistant (CA) for Harvard College's graduate level laboratory electronics course, *The Art of Electronics* (Fall 2017)
- Teaching Fellow (TF) for Harvard College's intermediate level electrical engineering course, ES52, for three semesters; three time recipient of the Derek Bok Distinction in Teaching Award for excellence in teaching (Spring 2016 – Spring 2017)
- Division 1 Varsity Nordic skier (Fall 2014 – Spring 2016)
- Bassist in the Harvard Radcliffe Orchestra (Spring 2015)

Tesla, Inc., Palo Alto, CA – Firmware Engineering intern on the Energy Products Team for 12 weeks **Summer 2017**

- Developed a statistical filtering algorithm to detect noisy battery cell voltage readings and estimate accurate replacement values
- Designed the algorithm in MATLAB and tuned through iterative testing on real captured data to optimize the filter's step and steady state responses
- Implemented the algorithm in C for execution on the central microcontroller; architected the firmware module to easily plug into the existing code base
- Tested and proved final implementation on physical systems in various use cases

Anderson Research Group, Harvard College – Electrical Engineer on Instrument Design Team **Spring 2016 – present**

- Designed a low noise, power distribution board for sensitive sensors and high precision signal conditioning circuitry on multiple atmospheric chemistry instruments designed in-lab to collect data for cutting edge research in atmospheric chemistry
- Performed extensive sensor characterization on a family of infrared sensors for high precision molecular species measurements
- Implemented a MATLAB simulation of the chemical kinetics involved in ozone loss to determine the volume of a key chemical species required to run an experiment for three months in the stratosphere

RFC Cambridge, Harvard College's Autonomous Robotic Soccer Club **Spring 2015 – present**

- Co-President during my Junior year; organized and managed both club and sub-team meetings; coordinated sub-team projects; developed strategies to ensure long-run organization sustainability (Fall 2016 – Spring 2017)
- Lead Firmware Designer – wrote modules for motor control, FSM system architecture, I2C communication, GPIO expander interfacing, and higher level robotic control
- Designed, prototyped and integrated microcontroller and GPIO expander circuitry into our central control board
- Assembled, debugged and integrated first revision control boards, motor boards and communications boards, bringing each to a highly functional, collaborative state
- Designed the PCB layout of our central control board using Eagle

Intellibot, Inc., Richmond, VA – Intern in Electrical Engineering for 11 weeks **Summer 2016**

- Helped prototype and test the company's next generation of industrial-sized, autonomous, floor cleaning robots
- Designed and conducted experiments to characterize various sensors for future integration into their machines
- Designed, assembled, tested and debugged system circuit boards
- Installed new hardware on the robots to ensure the machines met CE safety standards
- Performed "dead bug" prototyping
- Contributed to high level software design

AngioDynamics Inc., Glens Falls, NY – Intern in Regulatory Affairs for 12 weeks **Summer 2015**

- Worked to update and improve the clarity of the company's technical and regulatory documents using Microsoft Office to help streamline the approval process for medical devices with the Food and Drug Administration (FDA); compiled sales and complaint data for specific product lines to help clarify which products needed to be improved

Queensbury High School, Queensbury, NY **Sept 2010 – June 2014**

- Valedictorian
- President of National Honor Society
- Twice Conference All State String Bassist for String and Symphony Orchestras
- Varsity Soccer Co-Captain & Foothills Council First Team All Star (Fall 2013)

SKILLS:

- Strong verbal and written communication skills
- Strong understanding of PCB layout design techniques and tools, Eagle and Mentor
- Extensive experience using electrical engineering lab equipment – soldering iron, oscilloscope, logic analyzer, multimeter, etc.
- Extensive experience with computer science languages, C, MATLAB, and Python
- Familiarity with CAN communication protocol and associated analysis tools: CANape, PCAN-Explorer
- Regularly use Microsoft Office and Google applications
- Interest in RC aircraft design and construction – recently designed and built an RC aircraft with 3' wingspan