

Mark Dominic Yamarone

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Education

Stanford University, G.P.A: 3.86

2022 - 2024

M.S. Aeronautical/Astronautical Engineering

Relevant Courses: State Estimation, Decision Making Under Uncertainty, Adv. Feedback Control, Applied Aerodynamics

Northeastern University, G.P.A: 3.87

2015 - 2019

B.S. Mechanical Engineering, Minor in Electrical Engineering, Summa Cum Laude

Relevant Courses: Intro to Flight, Mechatronics, Dynamical Control Systems, Noise and Stochastic Processes

Activities: Aero NU, NU Mars Rover Team, Wireless Club, Pi Tau Sigma Honor Society, WRBB 104.9 FM

Skills

Applications: SOLIDWORKS, Fluent, Simulink, LabVIEW, Microsoft Office, Creo Parametric, NX, ANSYS, Confluence

Programming: Python, C++, MatLab, HTML, Java, ROS, Machine Learning, Image Processing, Embedded Firmware

Manufacturing: Sheet Metal Design, CNC, Composite Materials, DFM, Soldering, PCB Design, Rapid Prototyping

Professional Experience

Planet Labs - Systems Engineering Intern - San Francisco, CA

June 2023 - November 2023

- Developed test procedure for a mission critical qualification test on our next-generation spacecraft.
- Analyzed the effect of significant configuration changes would have on system-level budgets.
- Simulated a Day-in-the-Life for a spacecraft prototype, encompassing all subsystems for requirements validation.

Elementary Robotics - Mechanical Engineer - Pasadena, CA

January 2020 – August 2022

- Developed hardware for the next generation of factory automation and product inspection with advanced onboard compute.
- Performed detailed system analysis to optimize the capabilities of next generation hardware for Elementary's use case.
- Wrote low-level software interfaces for industrial sensors and interface devices.

MORSE Corp - Engineering Co-Op - Cambridge, MA

January 2019 – August 2019

- Designed structural components for unmanned aerial vehicles and their flight test equipment in Solidworks.
- Made hardware testing methods more reliable and consistent with automated tests and redundant safety systems.

Endeavor Robotics - Systems Engineering Co-Op - Chelmsford, MA

January 2018 – June 2018

- Performed verification of robot performance in mobility, endurance, communications, and accessory interoperability.
- Developed a custom wireless test instrument to measure and record robot ground speed including mechanical, electrical and software design.

Hasbro Inc. - Engineering Co-Op, Integrated Play - Pawtucket, RI

January 2017 – June 2017

- Created mock ups of mechanisms for future animatronic toys using both machined and 3D printed parts.
- Engineered new play experiences for next-gen, connected toys using advanced technologies such as computer vision, virtual reality, and natural language processing; including speech based games for Amazon Alexa.

NASA JPL - Eng. Undergrad Intern, ECOSTRESS - La Cañada, CA

May 2016 – August 2016

- Designed 10 data and power cables internal to the instrument as part of the project cabling team.
- Supervised manufacturing of 30 cables and routed cables on the computer model of the instrument in Siemens NX.

Engineering Activities

Avatar XPRIZE Arm Capstone Project

Fall 2019

- In a team of 5 students, designed and prototyped an anthropomorphic robotic arm and haptic exoskeleton controller.
- Developed a compact brushless motor driver for quasi-direct drive applications with closed-loop torque control.
- Wrote motor controller firmware including Field-Oriented Control, serial communications over RS485, and implementing FreeRTOS on an ARM Cortex microcontroller.

Aerospace NU - Fixed Wing Project Lead

2015 – 2019

- Led the Fixed Wing team in designing and building a small UAV to compete in SAE Aero Design East 2019, Micro Class.
- Created mechanical designs, defined system architecture, and led propulsion and controls teams.

Northeastern University Mars Rover Team - Systems Engineering Lead

2018 – 2019

- Designed a remotely operated rover for a simulated Mars environment to compete in the University Rover Challenge.
- Defined system requirements and engineered a solution best suited to complete competition tasks.
- Managed the mechanical, electrical, and software design and integration of 4 subsystems.