

EDUCATION

M.S. in Robotics – University of Pennsylvania, GRASP Lab

Philadelphia, PA 2018 – 2020

B.S. in Mechanical Engineering – MIT

Cambridge, MA 2013 – 2017

EMPLOYMENT

Commonwealth Fusion Systems - Diagnostician / Senior Diagnostician

Devens, MA

Lead project management, design, testing and implementation of the SPARC bolometry diagnostic. Incorporated physics requirements for plasma sensing; designed bolometry sensors and cameras electrics and mechanics within highly changing magnetic fields, radiation, and high temperature. Coordinated work across tokamak systems, CAD Design, supply chain, project management org. Developed tomography algorithms for plasma reconstruction.

2023-2024 /
2024-2026

Commonwealth Fusion Systems - Diagnostics Support Engineer

Somerville, MA

Designing active optics and mechatronic interfaces for diagnostic systems on the SPARC fusion device.

2022 - 2023

Vicarious Surgical - Robotics Software Engineer

Waltham, MA

Technical lead of a physics-based, photorealistic robotic surgery simulation for synthetic data generation and machine learning training in ROS2 / Gazebo. Implemented and managed CI and best coding practices, and performing code reviews for more junior team members.

2021 - 2022

DeepMind - Research Scientist Intern

London, UK (Remote)

Research in improving deep reinforcement learning (RL) policies on robots for reduced actuator wear-and-tear and safer interaction using open-source GCP infrastructure.

2021

University of Pennsylvania, GRASP Lab - Graduate Researcher

Philadelphia, PA

Designed and verified a robust, perception-based controller for a UAV system. Designed dynamics simulations with aero model for a 1cm, single-actuator UAV as a design tool. Designed and implemented ML pipeline for graph neural networks applied to decentralized swarm control.

2018 – 2021

Kitty Hawk Corp - Controls Engineer

Palo Alto, CA

Designed and tested autonomous take-off, landing and navigation planning and control (LQR, kalman filters, online optimizations for actuator allocation) on an electric VTOL aircraft. Developed infrastructure for Monte Carlo simulations and flight data analysis.

2017 – 2018

Kitty Hawk Corp - Mechanical Engineer Intern

Palo Alto, CA

Prototyped ballistic recovery system with ultra-light parachutes and off the shelf rockets.

Summer 2016

MIT Media Lab, Tangible Media Group - Undergraduate Researcher

Cambridge, MA

Designed and fabricated 2D linear actuator array electromechanics for VR-based tactile simulation.

2014 – 2017

SELECTED PUBLICATIONS & PATENTS

Rebecca Li, et al. “Development of a bolometry diagnostic for SPARC,” *Review of Scientific Instruments*. 2024.

Walker Gosrich, Siddharth Mayya, **Rebecca Li**, et al. “Coverage Control in Multi-Robot Systems via Graph Neural Networks,” *IEEE International Conference on Robotics and Automation (ICRA)*. 2022.

Rebecca Li*, et al, “Robust, Perception Based Control with Quadrotors,” *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. 2020.

Dinesh Thakur, Yuezhan Tao, **Rebecca Li**, Alex Zhou, Vijay Kumar and Aleksandr Kushleyev, “Swarm of Inexpensive Heterogeneous Micro Aerial Vehicles,” *International Symposium on Experimental Robotics (ISER)*. 2020.

Damon Vander Lind and **Rebecca Li**, “Attached rocket parachute deployment system.” *U.S. Patent 10,507,929*, 2019.

SKILLS

Programming Languages: Python, C++, Haskell, MATLAB, L^AT_EX

Software: Siemens NX, Solidworks, git, docker, CI (Jenkins, Github Actions), Linux, ROS, TensorFlow/PyTorch, Adobe Photoshop/Lightroom, Microsoft Word/Excel/Powerpoint, Google Suite, WordPress, GCP.

LEADERSHIP

- Founder - MAR Designs. Developed robotic orthotic for treatment of pediatric cerebral palsy, won Wharton Startup Challenge Innovation Award, the Rothberg Catalyzer Hackathon, and Penn I-Corps. *2020*.
- Seminar and knowledge Lead for Nuclear Energy group in Work On Climate *2020*
- President of the Mechanical Engineering Graduate Association (MEGA), UPenn. *2029-2020*
- President of the MIT Eleectronic Research Society (MITERS). *2016*
- Founder of MIT Combat Robotics Club, Co-Captain of BattleBots team for *The Dentist*. *2016*
- Teaching Assistant: Advanced Robotics (Graduate), Electronics for Mechanical Systems (Undergraduate), Introduction to Robotics (Undergraduate).
- Mentoring: Undergraduate Researcher Fangzhou Yu (now at RAI), Make Learning Labs, MIT Educational Studies Program