Elliott Donlon

From Honolulu, HI
Lives & works in the San Francisco North Bay
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Education

Massachusetts Institute of Technology
2018 - 2020 S.M. in Mechanical Engineering

Olin College
2010 - 2014 B.S. in Engineering: Systems
Cumulative 3.68 GPA
Recipient of 4-year, 50% Olin Merit Scholarship

Punahou School
Graduated: June 2010
Honors Diploma, 3.8 GPA

Skills

Software: SolidWorks, Onshape, DipTrace, GitHub.

Fabrication: 3-D Printers, mill, lathe, drills, saws, MIG welding, sheet metal tools, water jet, laser cutter, metal and polymer casting.

Laboratory: FTIR, TGA, DSC, DMA, Various Mechanical Testers, various programmable furnaces, optical and SE microscopy, recrystallization, vacuum filtration, chromatography, photolithography.

Selected Experiences

2022 - Current | Fyto - Senior Mechanical Engineer
- •Designed the world's largest mobile autonomous aquatic plant harvester with a team of 5 members.
- •Designed and built the family of harvesting end effectors that have harvested an estimated 1.5 million pounds of duckweed over 3 years.
- •Conducted Techno-Economic Analyses that drove a farm Capex reduction of ~50% (2023-2024) and then a further ~65% (2024-2025).
- •Designed and executed experiments to validate critical aspects of new designs to enable farm Capex and Opex reductions
- •Led Fyto's downstream processing design including solar drying, mechanical drying, dewatering, transportation, milling, and storage.

2020 - 2022 | Giner, Inc. - Project Engineer
- •Led the manufacture, testing, and acceptance of the Electrolysis Cell Stack to use in the Oxygen Generating Assembly on the International Space Station.
- •Supported project management of Giner's aerospace class electrolyzers and fuel cells for oxygen and power generation to support crew life.

2018 - 2020 | Domestic Water Usage and Sanitation Systems in Indian Villages
- •Worked with Professor Amos Winter in the GEAR Lab at MIT to identify areas of opportunity for technological innovation in Indian sanitation.
- •Developed a framework to assess fitness of current solutions against adequate service requirements through technoeconomic and multi-criteria analyses.

2016 - 2018 | Reactive Gripper Development
- •Designed and built robot fingers with integrated sensing and reactive actuation.
- •Created a high-fidelity tactile sensor building on prior work of collaborators.
- •Co-authored successful 75k seed funding proposal with Lab PI Alberto Rodriguez.

2015 - 2018 | Design and Fabrication for MIT's Manipulations and Mechanisms Lab
- •Designed and built robotic manipulation research platforms for data collection.
- •Led the design, fabrication and system integration of the Team MIT robot for the Amazon Picking Challenge where we placed 2nd out of ~30 teams in 2015, 3rd and 4th in 2016, and 1st in the 2017 Stowing task.

Activities and Outreach

Mar 2018 - Oct 2022	MIT Glass Lab Technical Instructor •Teach fundamentals of glass blowing to beginner students via demonstration, assistance feedback, troubleshooting and safety instruction. Assisted in maintenance of shop resources.
Fall 2017 - 2020	MIT MakerWorkshop Mentor •Trained shop users and run the shop as volunteer staff; *Advanced Hand Tools* Machine Master: Organized trainings, maintained machines and established use protocol.
Dec 2014 - Mar 2015	Glass Workshop Volunteer Work at Entre Amigos – San Pancho, Nayarit, Mexico •Designed a glass kiln utilizing only toasters and other available scrap materials. •Empowered Mexican artists to supplement their income with new glass-making skills, a newly-acquired hot process and new products utilizing recycled material.
2013 - 2014	3-D Printing Czar – Creating a 3-D Printing Lab at Olin College •Led a team in the creation of a free-for-student-use 3-D print space at Olin College. •Modified budget desktop 3-D printing technologies to experiment with new materials, material recycling and print optimization.

Awards and Honors

2021	Giner, Inc. President's Award for outstanding service to the comapny
2018	MIT Tata Center Research Fellow
2018	NSF Graduate Research Fellow
2016	Most Potential for Impact" award at MIT ESI's Annual Hackathon for Climate Change

Selected Publications

1. Donlon, E., Dong, S., Liu, M., Li, J., Adelson, E., & Rodriguez, A. (2018). GelSlim: A High-Resolution, Compact, Robust, and Calibrated Tactile-sensing Finger. In International Conference on Intelligent Robots and Systems. article. (Amazon Research Awards Best Manipulation Paper Finalist)

2. Zeng, A., Song, S., Yu, K., Donlon, E., Hogan, F. R., Bauza, M., ... Rodriguez, A. (2018). Robotic Pick-and-Place of Novel Objects in Clutter with Multi-Affordance Grasping and Cross-Domain Image Matching. *In The International Conference on Robotics and Automation*. (Amazon Research Awards Best Systems Paper)

3. Fazeli, N., Donlon, E., Drumwright, E., & Rodriguez, A. (2017). Empirical Evaluation of Common Contact Models for Planar Impact. *In The International Conference on Robotics and Automation* (pp. 3418–3425).

4. Ross, C., Donlon, E., Kessler, A., Lee, C., Xiang, H., Jaffe, C. C., & Bloch, B. N. (2015). Patient and Structure Specific Quality Assurance Phantom Insert for Radiation Therapy of Prostate Cancer. *Journal of Medical Devices*, 9(2), 20938. http://doi.org/10.1115/1.4030146