

MOSES SWAI

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WORK EXPERIENCE

Google & X, the moonshot factory, Mountain View, CA

Mechanical Engineer (Everyday Robots, Google X)

01/2021 - present

- Owned the arm design for the next generation robot, from early explorations to creating concept models and prototypes of joint actuators, structural designs and associated electrical components.
- Designed custom actuators including evaluating technologies, assessing architecture tradeoffs, developing analytical models and exploring multiple form factors.
- Collaborated with cross functional teams to deliver fleet upgrades to injection molded parts, PCBs, actuation and compute components.
- Informed mechanical design and selection of robot components through FEA, load and dynamic analyses.
- Developed and tested electromechanical prototypes and associated test code for tools to enhance robot capabilities.

Robotics Intern (Everyday Robots Project, Google X)

06/2020 - 09/2020

- Explored concepts to extend robot load-carrying capability through cross functional collaboration.
- Evaluated the impact of safety sensor coverage and functionality on concept designs.
- Performed dynamic analysis to understand actuator limitation on project technical requirements.
- Designed and built prototypes for early testing of multiple solution paths.

Mechanical Engineering Intern (Google)

01/2019 - 06/2019

- Designed and built a thermal test vehicle to investigate the thermal performance of a laptop architecture and validate CFD and thermal simulation results.

Tesla, Inc., Palo Alto, CA

07/2019 - 09/2019

Mechanical Design Engineering Intern

- Redesigned electrical busbar variants to carry more power within thermal and spatial compliance.
- Performed stress analysis and FEA simulation on a connector socket design to determine failure zones and improve the safety factor.
- Prototyped an injection moldable dock for initial docking tests of a charging handle variant.

iRobot Corporation, Bedford, MA

09/2018 - 12/2018

Mechanical Engineering Intern

- Designed and fabricated test fixtures for various robot subassemblies and prototypes.
- Validated design proposals for a new product using additive manufacturing and plastic molding prototypes.

EDUCATION

Stanford University, CA

- M.S. in **Mechanical Engineering**, January 2021.
- B.S. in **Mechanical Engineering**, June 2018.

LEADERSHIP EXPERIENCE

Technical Communication Program - Public Speaking Tutor, Stanford University, CA

09/2016 - 06/2018

- Tutored students on strategies for effective public speaking. Content covered included public speaking delivery, organization, visual aids, interviewing skills, persuasive pitches and technical speeches.

TECHNICAL SKILLS

- **Engineering:** CAD (SolidWorks, Creo, NX, CATIA), Actuation, Mechatronics, Mechanical Design, FEA, Prototyping, Manufacturing (Machined Parts, Casting, Injection Molding), Thermal Design, FMEA, Controls, Vehicle Dynamics
- **Programming:** Python, C/C++, Java, MATLAB