Madee Haworth

madeehaworth.github.io | 414.828.6998 | mhaworth@alum.mit.edu

EDUCATION

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
BS in Mechanical Engineering
Concentration in Robotics
June 2019

EXPERIENCE

Design:
Magnets • CNC Enclosures
Stamped metal • FPCs
Micro Screws • Threaded Inserts
Tolerance analysis • FAI • Six Sigma
DFM • Design of Experiments
Prototyping • Sustainability
Software:
Creo Parametric • SolidWorks
PDMLink • ANSYS • MasterCAM
MagicDraw • Microsoft Office
Fabrication:
CNC & Manual Milling • Turning
Injection molding • Laser cutting
3D printing • Thermoforming
Soldering • Woodworking
Languages:
MATLAB • Python • Spanish (limited)

COURSEWORK

Design for Six Sigma: Green Belt Course
Dale Carnegie: Effective Communications
Microsoft: Accessibility in Action
Product Design Engineering
Design & Manufacturing I, II
Electronics for Mechanical Systems
Mechanics & Materials
Toy Product Design
Dynamics, Feedback Control Systems
Thermodynamics, Fluid Dynamics
Numerical Computation
Measurement & Instrumentation
Introduction to Robotics
Artificial Intelligence

ACTIVITIES

Pub Trivia
Phi Sigma Rho, Alpha Chi chapter founder
Society of Women Engineers
MIT Undergraduate Research Journal
Dormitory Government

EMPLOYMENT

MICROSOFT | Mechanical Design Engineer
Aug 2019 - Present | Redmond, WA

- Design mechanical subsystems, develop specifications and measurement methods, and perform system integration for next-generation Surface devices
- Interface with multidisciplinary teams including industrial designers, electrical engineers, human factors researchers, reliability engineers, and suppliers
- Owned and designed all magnets, fasteners, and hall effect sensing architecture for Surface Laptop Studio, as well as magnets and hall effect sensing for Surface Laptop 3; one patent and one patent pending for magnet systems design

MICROSOFT | Mechanical Engineering Intern
Summer 2018 | Redmond, WA

- Executed redesign of a mechanical subsystem to control opening force of Surface Laptop 3 within strict tolerance specifications
- Performed simulation using ANSYS and Creo to determine optimal geometry

RIGHTHAND ROBOTICS | Mechanical Engineering Co-op
Spring 2018 | Somerville, MA

- Optimized mold designs for 6 ReFlex robotic hands in SolidWorks, enabling faster, easier fabrication of adaptive fingers
- Performed independent robotic hand testing and assembly for customers

ATLAS DEVICES | Engineering Intern
Jan 2018 | Boston, MA

- Designed mechanical assembly for land-based tactical robot in SolidWorks, in collaboration with team of 4 externs
- Led fabrication and verification of prototype within tight 4-week timeline

NORTHROP GRUMMAN | Systems Engineering Intern
Summer 2017 | San Diego, CA

- Supported development of functional architecture for an unmanned aircraft
- Created & implemented closure plan for system architecture traceability gaps
- Updated systems architecture artifacts using object-oriented modeling (SysML)

LEADERSHIP

MIT PROJX | Director
Mar 2017 – Mar 2018 (Director), Sep 2016 - June 2019 (Committee)
Director of group that funds and supports MIT students' side projects. Spearheaded creation of successful new expo event and managed $40,000 budget.

PROJECTS

TALON | Fall 2018
Developed mechanism and structure for automatic-retracting utility knife with team of 24 classmates. Talon received the 2019 Martin Prince Innovation Award.

TEA-LICIOUS | Feb 2018
Designed structure, integrated actuators, and wrote software for automatic tea-making machine during MakeHarvard and MakeMIT hackathons.