

Madee Haworth

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EDUCATION

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

BS IN MECHANICAL ENGINEERING
CONCENTRATION IN ROBOTICS
June 2019

EXPERIENCE

Design:

Magnets • 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 • C++ (limited)
Spanish (limited)

COURSEWORK

Design for Six Sigma Green Belt Course
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
MIT Phi Sigma Rho, founding member
Society of Women Engineers
MIT Undergraduate Research Journal
Dormitory Government
Dramashop

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; two patents 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 Member)
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 patent-pending 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.