EMMA GRIFFITHS

CONTACT

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EDUCATION

MIT `21 – 4.6 GPA

Bachelor of Science in Materials Science and Engineering

Topics in mechanics/structural materials, synthesis/processing, electronic and magnetic materials, extreme environment materials, software/hardware engineering, presentation/performance, robotics, project design/fabrication, and human computer interaction. Undergraduate thesis completed.

Hopkinton High School

Class of 2017

LANGUAGES

English *native*

Mandarin Chinese *college level*

summer research internship 2019, NTU, Taiwan

SOFTWARE

Python - Fusion360

Unity/C# - Mathematica

Eagle - Rhino

ADDITIONAL SKILLS

AI/ML with Python

Product Design

Fabrication

Experiment Design

Technical Writing and Communication

Presentation/Public Speaking

Teaching/Instruction

Data Analysis

Research

AR/VR Unity Design

EXPERIENCE – INDUSTRY

Lockheed Martin Space *April 2022 - Now*

Materials Engineer

- Project lead for implementation of company-wide material database, working with stakeholders to incorporate feedback and planning/delegating work for a team of 10
- Lead for statistical process control implementation for polymer and metal additive manufacturing, making it easier to track machine health and predict out of control behavior before costly and time consuming failures occur, including the creation of a custom data tracking dashboard
- Led additive manufacturing tool effort to sweep part databases and identify which are potential additive manufacturing candidates, which will lead to cost, time, and weight savings for programs. Focus on increasing tool exposure throughout the company and tool ease-of-use, including the creation of a tool web-based user interface
- Worked with the Collaborative Human Immersive Lab (CHIL) to develop an augmented reality Unity application to keep track of item storage locations in a flight cabin
- Classes completed in composite materials, additive manufacturing, and artificial intelligence/machine learning including a final project implementing anomaly detection for a multi-class image dataset

Lifespans, Ltd. *2021-2022*

Simulation Engineer

- Designed and ran particle-based simulation tests for orthopedic implants that can provide accurate force results less expensive and more quickly than in-person labs to aid in the implant prototyping process
- Worked directly with top orthopedic implant design companies, including hosting a booth at the American Academy of Orthopedic Surgeons conference, to learn about industry needs and incorporate stakeholder feedback

EXPERIENCE – RESEARCH

MIT Undergraduate Thesis *2020-2021*

Undergraduate Researcher *Department of Materials Science and Engineering*

- Performed literary analysis in waterless hand cleanser field, discovering a research gap in finding water-minimal hand cleansers effective at spore bacteria removal to better protect communities lacking water for sanitation from harmful infections
- Designed and performed experiments to investigate the effectiveness of various cleanser compositions and textures at waterless spore forming bacteria removal to identify an optimal makeup

Bioelectronics Group *2019-2020*

Undergraduate Researcher *MIT Research Lab of Electronics*

- Fabricated soft/flexible and implantable bioelectronic devices to test the efficacy of light stimulation for spinal cord repair and intrinsically stretchable bioelectronic devices for interfacing with the central and peripheral nervous system to better understand the communication between the gut and brain
- Developed mechanisms for testing device performance and quality control

Human Systems Laboratory *2018-2019*

Undergraduate Researcher *MIT AeroAstro*

- Developed controls for SPHEREs satellites, making it possible to interface with and control the satellites with Microsoft HoloLens augmented reality via Unity in order to investigate how immersive technology can improve an astronaut's spatial awareness
- Designed training program to onboard users with the SPHEREs/HoloLens technology

EXPERIENCE - ADDITIONAL PERSONAL/CLASS PROJECTS

MIT - How to Make Almost Anything - 4.140 *Fall 2020*

- Digital fabrication overview, covering CAD, CNC machining, 3D printing, molding/casting, laser cutting, PCB electronic design and fabrication, sensing, embedded processing, and wired and wireless communications
- Final project: a self teaching guitar, CAD-designed and laser cut body with custom LED fretboard and wifi-connected web app, guides new guitarists through chord/songs

MIT - Robotics: Science and Systems - 6.141 *Spring 2021*

- Topics included lidar sensing, kinematics, state estimation, computer vision, perception, learning, control, and motion planning for autonomous vehicles and robots
- Final project was a team challenge to navigate an obstacle course and race track using custom algorithms for perception and autonomous, real-time navigation and control

EXPERIENCE – LEADERSHIP/OTHER

Night Lights Volunteer *2023-2024*

- Monthly role providing free respite care for children who have special needs and their siblings to give parents and caregivers the opportunity and time to take care of themselves and refresh