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Madeleine Weaver

Electrical Engineer

Portfolio Website

maddyweaver.github.io

Lab Skills

Software
SolidWorks AutoCAD Eagle
PADS Blender Unity
Programming
C/C++ MATLAB LabVIEW
Fabrication
Micro-Soldering 3D Printing
Laser Cutting MIG Welding

Awards

American Society of Engineering NE
Nominated by Professor and Accepted for Presentation
Smart Ukulele
2020
IEEE VR Osaka
Best Poster Honorable Mention
Advancing Ethical Decision Making in Virtual Reality
2019
National Science Foundation
S-POWER Scholarship
2016 to Present

Coursework

Embedded Design
Linear Systems
Networks
Linear Algebra
Differential Equations
Circuit Analysis

Volunteer Experience

Artisans Asylum
Maintenance Volunteer
New England Aquarium
Penguin Colony Volunteer
Walsh Middle School
STEM Tutor and Mentor

Education

Northeastern University, Boston, MA — May 2022
Bachelor of Science in Electrical and Computer Engineering
Students for the Exploration and Development of Space (SEDS)
NASA Big Idea Challenge Electrical Team Lead
GPA: 3.56/4.0

Massachusetts Bay Community College, Wellesley, MA — May 2019
Associate of Science in Electrical and Computer Engineering
Assistant to the Chair of the Engineering Department,
Engineering Club President, iCREAT Course Teachers Assistant

Research

Silicone Synapse
Northeastern University, Boston, MA — Sept 2019-Present
Research Assistant

- Designed and fabricated electrical and mechanical components for bio-mimetic bat robot
- Programmed and debugged STM-32 processor chips
- Soldered surface mounted components to a flexible PCB under a microscope
- Innovated methods for mounting PCB traces onto carbon fiber chassis and silicone wings

COVID-19 Directed Research
Northeastern University, Boston, MA — May-July 2020
Medical Device Design

- Worked with a group to design a medical device informed by the COVID-19 related needs of the healthcare system
- Performed interviews with healthcare professionals, including hospital administrators and respiratory therapists
- Conducted research on the effects of COVID-19 on the respiratory system
- Designed the electrical system and helped design the mechanical system for a medium-fidelity prototype

Mixed Reality Lab
University of Southern California, Los Angeles, CA — May-Aug 2018
REU Research Assistant

- Worked on a team of 3 to create an augmented reality environment to measure the effect of virtual immersion on user response when confronted with an ethical dilemma
- Designed virtual objects and built corresponding physical objects with integrated sensors

Professional Experience

FGC Plasma Solutions, Cambridge, MA July 2021–Present
Electrical Engineering Co-Op

- Designed and executed high voltage plasma experiments, analyzed data
- Assisted in the design and assembly of the electromechanical system in a TDLAT (Tunable Diode Laser Absorption Tomography) project
- Designed and assembled controls system for part of larger aerospace project, programmed operation using LabView
- Handled purchasing and accounting procedures independently
- Used industrial equipment to complete facility buildout tasks

Hasbro, Providence, RI July 2020–Jan 2021
Animatronics Engineer Co-Op

- Aided in the design and fabrication of animatronic and electronic toy prototypes
- Worked on projects involving wireless power transfer, analog signal processing, Arduino programming and servo models
- Presented roughly 10 product pitches individually and 2 in a group, including graphics edited in Adobe Photoshop and Premiere

Diversified Technologies, Bedford, MA May–Sept 2019
Electrical Engineering Intern

- Updated 15-year-old piece of equipment used to test control boards for high voltage custom electronics
- Programmed PLDs, replaced archaic PCB hardware, drafted a wiring schematic and 3D modeled the containing box
- Wired and assembled the final product

Dassault Systemes, Waltham, MA Jan–May 2018
Fab Lab Intern

- Trained to use and maintain digital fabrication equipment in a Fab Foundation designed digital fabrication lab
- Assisted Dassault Systemes employees in using fabrication tools to complete projects