Maddie Burroughs

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Education

Carnegie Mellon University Pittsburgh, PA — May 2025
Bachelor's of Science in Electrical and Computer Engineering
Minors in Media Design and Soft Technologies

Relevant Coursework: Computer Architecture, Artificial Intelligence, Digital Accessibility, System Verilog and Hardware Design, Soft Robotics

Relevant Experience

Carnegie Mellon University - School of Computer Science — Aug 2022 - Present
Fundamentals of Programming (Python) Head of Content and Teaching Assistant — Pittsburgh, PA
- Coordinate and review weekly content breakdowns, as well as develop practice assessments and supplementary instruction content
- Organize and host course events for over 200 students including a 24-hour hackathon
- Mentor 12+ students through month-long, self-developed term projects
- Lead weekly recitations and office hours

Shirley Ryan AbilityLab - Center for Bionic Medicine — May 2023 - Aug 2023
Mechatronics Engineering Intern — Chicago, IL
- Developed a prosthetic sensor signal visualization GUI in Python for real-time data analysis during physical therapy sessions
- Built and tested electrical components for ankle and knee prosthetics
- Updated and maintained upper limb prosthetic development kit

Lunar Gala Fashion Show — Aug 2023 - Present
Head of Stage Design — Pittsburgh, PA
- Design, render, and 3D model the physical runway for Pittsburgh's largest annual fashion show
- Present design concepts and iterations to production department heads
- Coordinate with vendors and venue management to communicate needs, organize equipment rentals, and ensure accessibility and safety requirements are met
- Interview, hire, and manage a team of implementers to develop background projections and environmental decorations to support an immersive, end-to-end audience experience

Scotch'n'Soda Theatre Company — Aug 2021 - Present
Technical Director, Designer — Pittsburgh, PA
- Schedule and facilitate 7 rounds of deliverable meetings between designers, implementers, and technical leads for scenic, lighting, sound, costuming, hair & makeup, and publicity.
- Coordinating overall production budget of up to $25,000.
- Maintain constructive lines of communication between technical, creative, and production staff, as well as with the university personnel through 5 month show processes
- Host full production events of up to 125 people including a design preview, load-in, strike, and multiple safety inspections

Zenblen — May 2022 - Aug 2022
Mechatronics Engineering Intern — Chicago, IL
- Developed motor control system for autonomous smoothie kiosk in C++
- Electrical hardware design, assembly, and programming for kiosk freezer vending system
- Designed and programmed "jog mode" to reduce time needed for position teaching by 90%
- Refactored codebase to reduce technical debt

Projects

Computer Vision Interactive Rubik's Cube — December 2021
Created an interactive program which uses Python and OpenCV to track user's hand gestures to manipulate a virtual Rubik's Cube and implement a DFS cube-solving algorithm

Computer Vision Just Dance Hackathon Project — November 2021
Created a customizable Just Dance application using Python and OpenCV that scores live user performances against analyzed movements from user-uploaded video choreography

Skills

Soft Skills: Project management, documentation, organization, communication, public speaking, design

Professional Skills: Python, C++, C, Java, MATLAB, AutoCAD, SolidWorks, Figma, Photoshop, Illustrator, Graphic design, Circuit and PCB design, soldering, FDM/SLA 3D printing, machine shop equipment