

# Alex Echols

She/Her

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## EXPERIENCE

### Carnegie Mellon U., Pittsburgh, PA — Undergraduate Research Assistant

May 2024 - Aug 2024

- Worked with post-doctoral student to research thermal properties of semiconductor alloys using Molecular Dynamics (MD) simulations
- Implemented novel calculation methods for interatomic forces and atomic masses within the LAMMPS MD code

### Markforged, Waltham, MA — Materials Simulation and Testing Intern

May 2023 - Aug 2023

- Developed and executed plan for measuring physical properties for 3D printed parts
- Integrated physical data into existing simulation software
- Polished changes in order to prepare for a launch to existing customer base

## EDUCATION

### Carnegie Mellon University, Pittsburgh, PA *Bachelor of Science in Materials Science and Engineering*

Expected Graduation: May 2025

GPA: 3.23/4.0

## PROJECTS

### Hollow Knight TAS Assistant — *Lead Developer* (2022–Present)

- Design and programming of a standalone executable which provides helpful information while working with the video game Hollow Knight
- Integration of software with existing programs, utilizing Lua, C#, and Python

## RELEVANT COURSEWORK

- Introduction to Materials Characterization
- Introduction to Polymer Science and Engineering
- Methods of Computational Materials Science
- Additive Manufacturing and Materials
- Writing about Data
- Hacker Fab 1: Building the Fab

## SKILLS

**Software:** Python, C#, C++, MATLAB, CAD (Onshape, KiCAD), MS Office, Google Suite, ImageJ

**Hardware:** 3D Printing, Soldering, Lathe, Manual Mill, Basic Wood/Metalworking tools

**Characterization:** Tensile/Compression Testing, SEM, EDS, Impact Testing, XRD

**Professional:** Written Communication, Critical Thinking, Problem Solving

## ACTIVITIES

Scotch'n'Soda Theatre,  
2022–Present

FIRST Robotics Competition  
(FRC), 2017–2021

Cyberpatriot Cybersecurity  
Competition, 2019–2021

## LEADERSHIP

Shop Manager: Scotch'n'Soda Theatre, 2023–2024

Lead Carpenter: Scotch'n'Soda Theatre, 2022–2024 (10 shows)

Team Captain: FRC Team #117,  
2020–2021