Micah Woodard

mlwoodard99@gmail.com
https://github.com/micahwoodard

Professional Summary

Software Engineer with expertise in instrumentation control and user interfaces. Skilled in Python, Typescript, and MATLAB, with experience designing and implementing scalable data acquisition systems and accompanying frontends. Adept at cross-functional collaboration and delivering impactful engineering solutions in research settings.

EDUCATION

Columbia University — New York, NY
Bachelor of Science, Biomedical Engineering, 3.8/4.0 GPA — May 2022
Honor and Certifications: Dean's List: 2020, 2021, 2022

College of Idaho — Caldwell, Idaho
Bachelor of Science, Mathematics-Physics, 3.9/4.0 GPA — May 2020
- Music and Health/Psychology minors

Honor and Certifications: Gipson Fellows Honors Program, Dean's List: 2018, 2019, 2020, Multivariable Calculus Award, and College of Idaho Presidential Merit Scholarship

EXPERIENCE

Software Engineer I - *Scientific Inst. & Process Eng., Allen Institute* — January 2025-Present

- Supported an acquisition platform used for large-scale behavioral experiments, enabling data collection across hundreds of mice; currently refactoring the system to improve modularity, robustness, and long-term maintainability.
- Designed and implemented BSKI, a modular barcode-scanning and tissue ID management tool, reducing manual data entry errors and improving sample tracking reliability.
- Developed a web-based UI for a custom microtome, increasing operational visibility and enabling real-time monitoring for the research team.
- Built control software and a web UI for a fluidics system used in washing and processing stained tissue samples.

Optical Engineer I - *Molecular Anatomy, Allen Institute* — August 2022—January 2025

- Designed and implemented modular hardware control software and GUIs for Exa-SPIM light-sheet system, supporting acquisitions generating ~200 TB per imaging session.
- Optimized multi-camera streaming and data ingestion pipelines in collaboration with the Chan Zuckerberg Institute, enabling high-throughput Zarr-based acquisitions.
- Worked directly with internal and external labs (Allen Institute, UW, and international partners) to configure and adapt software deployments used by 5+ light-sheet microscopes across 3 institutions.

SKILLS

Programming & Development: Python, C++, MATLAB, React, Qt, Arduino, Ansible, Figma, draw.io
Instrumentation & Tools: Lightsheet Microscopy, System Control Software, Device Driver Development, SolidWorks