Jonathan Tate Potter

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EDUCATION

Carnegie Mellon University — Pittsburgh, PA
Master of Science, Automated Science — Graduation Date May 2025
QPA: 4.10

University of California, Davis — Davis, CA
Bachelor of Science, Biological Systems Engineering — Graduation Date June 2023
GPA: 3.935/4.0, Magna Cum Laude

RELEVANT COURSEWORK AND PROJECTS

- Machine Learning, Active Learning, Automating Scientific Research, Automated Biology (with focus on Cybio Felix liquid handling equipment and Thermo Fisher Scientific's Momentum scheduler), Graph Representation Learning, Computational Approaches to Biological Modeling and Simulation
- Partnered with LLNL to create an experiment preparation and LIMS-updating robot with a 6 DoF Kinova arm
- Partnered with Generate Biomedicines on a Capstone project leveraging Machine Vision to identify and report clogged pipette nozzles on automated lab equipment (EL406s) to technicians
- Led a project automating the experimental classification and performance evaluation of snake antivenom genes
- Won the 2024 Nucleate Pittsburgh Biohackathon by building an LLM-powered symbolic query generator for selecting clinical trial cohorts in 48 hours
- Co-designed a 4-week "Intro to Automated Labs" course for CMU Pre-College scholars (with Dr. Josh Kangas) using lab robots for automated color-matching and autonomous pH "battleship" experiments; selected as an MVP Poster Presenter for this work at SLAS 2026 (Society for Laboratory Automation and Screening, Boston, MA)

RELEVANT EXPERIENCE

Predictive Oncology — Pittsburgh, PA
Software and Automation Engineer — August 2025 - Present

- Architected and developed a backend service that ingests patient–drug experiment definitions from the LIMS and optimizes plate layouts and liquid-handler operations (tip usage, LHOP count) across multiple instruments in parallel
- Developed a fully-portable automated script-generation pipeline enabling a smooth transition between Dynamic Devices Oasis instruments and Opentrons OT-2 liquid handlers
- Built a custom hardware and software stack for lab automation equipment, automating operational qualification and quality control using microcontrollers and cameras in a 3D-printed chassis
- Designed and fine-tuned a self-hosted, SQL-RAG powered LLM platform (exposed via MCP) that allows users to deploy agents to query proprietary clinical databases and generate traceable reports with linked ground-truth sources and visualizations
- Planned and executed clinical-grade qualification studies for introducing new software and hardware into the automated assay pipeline, including protocol design, documentation, and results reporting
- Analyzed 3D spheroid assay data to characterize tumor response to chemotherapies beyond traditional 2D microscopy metrics

Magnify Bioscience — Pittsburgh, PA
Automation Engineer — September 2024 - August 2025

- Automated 16-hour chemical processes using Opentrons OT-2 robotic liquid handlers and deck modules
- Designed and implemented custom 3D-printed hardware into the OT-2 protocol to improve efficiency, reliability, and quality of results
- Architected a platform allowing for a central computer to control a system of lab automation equipment
- Created a user-friendly GUI enabling lab members without programming experience to execute the protocol

SKILLS

Programming Languages: Arduino C++ | Go | MATLAB | Python | R | Java | TypeScript | SQL
Programming Packages: django | fastapi | fastmcp | numpy | ollama | pandas | scipy | sklearn | TensorFlow
Laboratory Techniques: Extractions | PCR | Plasmid Cloning | CRISPR/cas9 | Lentiviral Transfection | Tissue Culture