# Eli Foster
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## Education

***Bucknell University, Lewisburg PA*** 2023-2027
- Electrical Engineering, 3.60 GPA
- Member and former VP of IEEE, executive board member of Bucknell Baja SAE
- Expected graduation May 2027

***Rowan College of South Jersey*** 2022-2023
Dual enrollment: SOC 103, CSC 101, CSC 111, CHM 111, MAT 108

## Projects

***PortalBox*** Summer 2025
- Completed v5.0 of an open-source makerspace project known as the Portalbox.
- Focused on embedded hardware to create an interlock system for both power and data.
- An ESP32-S3 Devkit based system checked in with a locally hosted SQL database to verify user access, using firmware written in MicroPython designed after v4.0 firmware written in Python.
- Utilized Git for version control, Embedded Linux to build and flash firmware, and software validation to ensure integrity of modules and libraries.

***Bucknell Baja*** Academic Year 24-25
- Led a team of ~10 ECE engineers in order to create all electrical systems on a racing vehicle
- Implemented a wiring harness, electronic differential controls, and an instrumentation system to monitor vehicle status and statistics.
- Utilized Agile-style development, created technical documentation, and research and development skills

## Employment

**Bucknell University – Multiple Roles** May 2024–Present
***Maker-E Project Developer*** (Summer 2024 & Summer 2025)
- Created educational technology kits to introduce students to modern engineering tools, focusing on microcontrollers, PCB design, computer architecture, and manufacturing equipment.
- Expanded and optimized the PortalBox embedded hardware platform for improved makerspace equipment access.
- Conducted firmware testing, bug identification, and feature enhancements in collaboration with faculty and technical IT staff.

***Makerspace Technician*** (Academic Year 2024–2025)
- Maintained and repaired 3D printers, laser cutters, PCB assembly machines, and lab computing equipment.
- Assisted students in embedded system prototyping, PCB assembly, and troubleshooting hardware/software integration issues.
- Certified users on manufacturing equipment and provided training on best practices for electronics fabrication and testing.

***Grader & Tutor*** **(Academic Year 2024–2025)**

- TA for ECE class teaching Mechanical engineers the use of Arduino circuits to make basic robots.
- Tutored students in Python and core ECE concepts such as Kirchoff's laws, circuit theory, and Ohm's Law.
- Provided feedback on code quality, logic errors, and hardware/software integration approaches.

## Skills

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**Embedded Systems & Software**

- Embedded Linux development, firmware design, implementation, and verification
- Python, C, Assembly, Java
- Git / Source Control Management (SCM)
- Agile methodologies
- Bug identification, debugging, and feature enhancement implementation

**Hardware & Electronics**

- PCB design (KiCAD), Arduino circuits
- Instrumentation system development and testing
- Iterative prototyping and hardware-software integration
- CAD tools: SOLIDWORKS, Fusion360
- Measurement and test tools: WaveForms, multimeters, oscilloscopes