




# Bradley Kenneth Hutchings

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 [github.com/breadleaf](https://github.com/breadleaf)  
 [breadleaf.github.io](https://breadleaf.github.io)

## EDUCATION

**Colorado School of Mines** - Golden, CO

July 2021 - May 2025

Bachelor of Science, Computer Science

CSCI GPA: 3.04

Mines EE Classes: **Circuits**, **Digital Logic**, **PCB Design**, and **Elements of Computing**.

**Napa Valley College** - Napa, CA

January 2017 - January 2021

Certifications: **Autodesk Fusion360**

## TECHNICAL SKILLS

<b>Software Tools</b>	Linux, Git, PlatformIO, Fusion360, EagleCAD, FreeCAD, KiCAD
<b>Hardware Tools</b>	Quartus, Oscilloscope, Arduino, THT & SMD Soldering
<b>Languages</b>	Python3, C/C++, Verilog, Rust, Go, JavaScript, Postgres SQL
<b>Protocols</b>	I2C, SPI

## WORK EXPERIENCE

**Contractor Work: Tech Lead & Manager** - SwingLens LLC

May 2025 - June 2025

- Managed a team of 7 intern engineers whilst working closely with other advisors.
- Advised on **Python**, **Flask**, **Hardware** configuration, and industry programming practices.
- Developed and open-sourced a **Python** tool for importing **Jupyter Notebooks**.

**Research Internship** - CSM & National Science Foundation

May 2024 - September 2024

- Automated data aggregation, filtering, and processing with **Python** and **Pandas**.
- Trained **SciKitLearn** models to identify vulnerable network data.

**Product Development Internship** - Analytical Data Systems

May 2023 - August 2023

- Developed a toolchain to have LLMs to introspect and reprompt for more normalized results based on user-defined qualities.
- Implemented several interfaces to interact with the service from Discord or a custom web client in **JavaScript**.

## PROJECTS

**NovaMill Open Hardware PCB Mill** - Author

July 2025 - Present

NovaMill is a work in progress Open Hardware desktop PCB Mill with the goal of making rapid PCB prototyping easier as faster.

- Real-time motor and sensor control with **Pi Pico 2 W** running **Marlin**.
- **Pi Zero 2 W** running custom **Linux** distribution for on-device **machine learning** corrections.

**BreadLeaf-8 (BL-8) Hardware Implementation** - Author

June 2025 - Present

Working towards implementing my custom **8-bit** Computer based on **74HC** chips. The architecture is based on my **Distributed Custom ISA Execution Environment** software project.

- Designed and iterating on **custom toolchain** to edit my CPU's **microcode**.
- Implementing **FPGA** adaptaion to be implemented in **Tiny Tapeout ASIC** project.

**BreadPod (Muserve Hardware Companion)** - Author

September 2024 - Present

- **ESP32** based music player with touch control.
- Communicates with **Muserve Server** software project.

**Robotics Software Engineer** - FRC #7667

November 2018 - June 2019

- Competed in the 2019 Houston World Championship.
- Fabricated and implemented a game piece manipulation mechanism using **C++** and **WPILIB**.

*Last Updated: September 15, 2025*