




Bradley Kenneth Hutchings

(707)-302-9750 • bradleyhutchings@mines.edu

 [linkedin.com/in/bradley-k-hutchings](https://www.linkedin.com/in/bradley-k-hutchings)
 github.com/breadleaf
 breadleaf.github.io

EDUCATION

Colorado School of Mines - Golden, CO
Bachelor of Science, Computer Science

July 2021 - May 2025
CSCI GPA: 3.04

TECHNICAL SKILLS

Languages | Python3, C/C++, Go, Java, JavaScript, Lua, Postgres SQL
Developer Tools | Linux, Docker, Git, PlatformIO, Makefile, PKI

WORK EXPERIENCE

Contractor Work: Tech Lead & Manager - SwingLens LLC May 2025 - Present

- 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**, streamlining data science workflows.

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.
- Collaborated closely with graduate student Su Wang and Prof. Dong Chen, providing daily progress reports and weekly updates.

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

Distributed Custom ISA Execution Environment - Author April 2025 - Present

Designed and am working towards implementing a complete, custom computing ecosystem, including an **Instruction Set Architecture** (ISA), **Assembler**, **Virtual Machine** (VM), and a **TCP** machine state transmission networking protocol. The system enables distributed execution of custom machine code across a client-router-server architecture.

- The custom **8-bit ISA** is executed by a corresponding **VM** developed in **Go**, featuring 256-bytes of RAM.
- The custom **TCP** networking protocol implemented in **Go**, enables distributed execution by transmitting machine state packets between client, router, and server.
- The **assembler** translates human-readable assembly into the custom ISA's machine code using a **LL(1) Tabular Parser** dynamically generated applying **Formal Language Theory** algorithms.

Zine App - Author March 2025 - Present

- Architecting the backend in **Go**, featuring microservices for authentication and **MinIO/S3 storage integration**, alongside **Redis** with a **custom Go wrapper** for session management.
- Developing the **frontend with TypeScript and React (using Vite)**, with **NGINX** for reverse proxying backend services and **Docker Compose** for containerized deployment.

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 13, 2025