

JESSIE FEHRENBACH

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EDUCATION

Colorado School of Mines

B.S Degree

Engineering Physics

2019-2024

Overall GPA: 3.6

PREVIOUS EXPERIENCE

Protogenesis LLC Co-Founder (Summer 2022 - Present) Founded and led a profitable prototyping business, directly managed the founding team, and oversaw the 8 contractors we hired. Directly communicated and worked for clients developing complex mechanical/electrical/software products

FAEX Technologies Inc., Co-founder/Chief Product Officer (Apr 2024 - Aug 2024) developed 3 hardware products that determined stool health while managing relations with foreign freight forwarders, manufacturers, etc. Communicated and grew a community of beta testers and iterated the product hardware according to customer feedback.

Evolve Entrepreneurship Club President (Fall 2022 - Spring 2023) Led a team of 3 and organized state-wide events such as the Colorado School of Mines pitching competitions, and the Entrepreneurship showcase”

Colorado School of Mines Nuclear Physics Undergraduate Research (February 2021 - August 2021) Simulated millions of instances of beta decay electron recoil in the sub 1KeV range and Compressed, managed, visualized, and communicated terabytes of data

Engineering Physics Field Session (Summer 2021)

1. Conducted hands-on projects in circuits, optics, and vacuum system design.
2. Achieved a measurement precision of 10^{-5} m in thermal expansion experiments using an interferometer.
3. Designed and built a robotic arm and vacuum systems, gaining proficiency in machining tools like lathes and mills.

ESSmetron, Controls Engineer Intern (Feb 2024 - May 2024) I was responsible for designing and testing control systems for small-scale power distribution center simulations with Siemens PLCs

HackBright University Python Teaching assistance (Spring 2022 - Present) Used an online platform to build a technical coding skill using my 4+ years of programming experience.

PROJECTS

- **Optimization of Heat Pumps** Collaborated with Physicists to design the first reversible transcritical CO2 heat exchanger with a COP of 3.
- **Hacking for defense** Worked with the operations group at the Peterson Space Force base and successfully designed a portable, modular SCIF for military use.
- **Facial Recognition Automatic Sentry Gun** Developed a 95 percent accurate facial recognition Nerf sentry gun in 2 weeks using Arduino and TensorFlow.
- **Server Based Methane and CO2 Sensor** Developed a functional sensor network system that was implemented for laboratory worker’s safety in low ventilation environments.
- **Python Stock Trading Bot** Created a Python stock bot that underperformed the stock market with data scrapped off financial websites and pushed into a PostgreSQL database
- **C++ Signal Modulator** In one week, successfully created took a string input, encoded it, then convolved it with a root-raised cosine signal and successfully transmitted and received the message through a software-defined radio