Mia Kiesman

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Generac Clean Energy, Firmware Engineer   **May 2024 – Present**
- Wrote automated UL1998 HiL testing suites for TI C2000 based control modules
- Maintained CI/CD pipeline which performed Linux and embedded target compilation, static analysis, unit tests, and HiL/SiL verification using PyTest and PLECS, enabling better code quality across team
- Implemented bare-metal C isoSPI BMS driver, including safety critical controls, and integrated it into pre-existing codebase, enabling robust hotswap of heterogeneous battery chemistries into field units

MIT Lincoln Labs, Energy Systems Group, Research Intern   **June 2023 – August 2023**
- Developed automated IP network infrastructure analysis tools for use in power grid settings
- Integrated industrial internet protocols into Hardware in the Loop (HiL) testing infrastructure to enable faster deployment of new devices and richer data collection for device testing
- Evaluated Software Defined Networking solutions for their suitability in industrial applications

Generac Clean Energy, EE Integration Engineering Intern   **May 2022 – August 2022**
- Wrote and deployed real-time production code for residential solar/battery microgrid installations
- Worked on an agile development team maintaining a large multi-core embedded C codebase
- Designed, ran, and documented tests characterizing prototype power electronic systems

Spin Analytical, Electrical Engineer   **June 2017 – August 2021**
- Designed, built and delivered an automated, microfluidics platform to incubate, measure and purify radioactive solutions for a top pharmaceutical manufacturer's pilot program to automate drug synthesis.
- Integrated hardware including a sensor array, robotic gantry and pipet system.
- Planned and wrote user interface, component drivers, analysis protocol and bench test modules.
- Created hardware and software for optical centrifuge rotor calibration deployed in over 50 research labs. This enabled faster and more accurate charge measurement of protein solutions.

Permit Log, Developer   **February 2017 – 2019**
- Won first place in the Maine Apps Challenge and was awarded a $6000 scholarship
- Supported over 3000 active Android users over multiple app versions

!!Con, Speaker   **May 2021**
- Presented talk on the use of the Teensy Microcontroller to play real instruments in rhythm games.

Small File Film Festival, Filmmaker   **August 2020**
- Won *Best Cross-Platform Work* for entry "New Beginnings", created for the Gameboy Advance

2600, Writer   **April 2020**
- Wrote an article on Internet preservation and archival for hacking/technology magazine *2600*

Education

Columbia University, Electrical Engineering, 3.64 GPA   **Class of 2024**
Embedded AI/ML, FPGA SoC design, Power Electronics, Vision in Robotics, Communication Circuits
Marshwood High School, South Berwick, ME   **Class of 2019**

Skills

KiCAD, LTSPICE, EAGLE, RP2040, Arduino, ESP32, STM32, C2000, RP2040, C, C++/Qt, Java, Python, Rust, TensorFlow, Pascal, Mathematica, Linux/Windows/MacOS development, Analog/Digital PCB design, Final Cut Pro, Adobe Premiere

Independent and University Projects

ModMatic - Senior Design Capstone   **September 2023 – May 2024**
      Worked on a team of 3 to create an RP2040 based musical instrument which enables the player to create and play arbitrary microtonal scales. My area of responsibility was hardware design and layout of the two interconnected PCBs, and writing the ARM C++ firmware for each board

XTrip   **September 2020 – August 2021**
      Created a realtime internet audio bridge and serial interface to restore service to a defunct 90s multiplayer modem-based gaming network

CondWand - Embedded AI Final Project   **March 2023 - May 2023**
      Created a prototype wearable bracelet to assist in training of band conductors. Used a 6 axis IMU to collect training data and provide realtime feedback to the user.

MOP3   **January 2023 - April 2023**
      Open source, Rust based email daemon created to allow retro computers to browse the Mastodon social network. Supports POP3, IMAP, images, and embedded images/HTML.