Julian Calder

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Education

Middlebury College September 2020 - May 2024

Bachelor of Arts in Computer Science and Physics, Summa Cum Laude *Middlebury, VT*

- GPA: 3.80
- Relevant Coursework: Advanced Operating Systems, Systems Programming, Algorithms and Complexity, Software Development, Programming Languages, Quantum Computing, Data Structures, Computer Architecture, Theory of Computation, Multivariable Calculus, Topics in Linear Algebra and Differential Equations, Intermediate Electromagnetism, Electromagnetic Theory, Experimental Physics, Electronics for Scientists

Experience

Computer Science Teaching Assistant September 2023 - May 2024

Middlebury College *Middlebury, VT*

- Host biweekly tutoring sessions for Python-based introductory computer science course (Fall 2023) and computer architecture course (Spring 2024).

Power Electronics Research Intern June – August 2023

National Renewable Energy Laboratory *Golden, CO*

- Developed a comprehensive GUI application with Tkinter in Python to control and automate a custom-made hot press for the fabrication of a novel power inverter module for electric vehicles.
- Constructed working desktop-scale model of press to simplify program testing and optimization prior to scaling up to full-sized apparatus.
- Assisted in the development and testing of a general-purpose data acquisition program in Python built around the Phidget platform of programmable sensors and controllers.
- Supported researchers across multiple groups by developing individually-tailored equipment monitoring, control and data acquisition programs to streamline experimental workflow and improve safety.

Materials Science Research Intern May – August 2022

National Renewable Energy Laboratory *Golden, CO*

- Synthesized more than 30 growths of various layered thin-film nitride materials using a high-vacuum magnetron sputter deposition chamber.
- Implemented automated shutter program in Labview to demonstrate the possibility of in-situ layered film production.
- Characterized film thickness, structure and composition with X-ray diffraction, X-ray fluorescence and X-ray reflectometry techniques.

Leadership

Men's Team Co-Captain September 2023 - May 2024

Middlebury College Men's Club Crew Team *Middlebury, VT*

- Organized daily team practices, trailer loading and other general operations for team of over 60 athletes.

Treasurer January 2023 - May 2024

Middlebury College Club Nordic Ski Team *Middlebury, VT*

- Managed $8000 budget for team finances, coordinating equipment purchases, race entry fees and other miscellaneous expenses.

Lead Computer Consultant September 2021 - May 2024

Middlebury College Information and Technology Services *Middlebury, VT*

- Manage schedules and supervise team of 14 student consultants providing IT support to students, staff and alumni in broader college community.

Technical Skills

Languages and Systems: C, Python, OCaml, Prolog, Javascript, React, HTML, CSS, ARM Assembly, TensorFlow, Mathematica, Labview; FreeBSD, Full-time Linux user

Laboratory: Instrument control and automation, material characterization techniques (XRD, XRF, XRR, profilometry)