# Julian Calder

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## EDUCATION

**Middlebury College**                                                September 2020 - May 2024
*Bachelor of Arts in Computer Science and Physics*                    *Middlebury, VT*
- GPA: 3.80
- Relevant Coursework: Systems Programming, Software Development, Programming Languages, Quantum Computing, Data Structures, Computer Architecture, Multivariable Calculus, Linear Algebra, Topics in Linear Algebra and Differential Equations, Intermediate Electromagnetism, Electromagnetic Theory
- Upcoming: Advanced Operating Systems, Theory of Computation, Algorithms and Complexity

## EXPERIENCE

**Computer Science Teaching Assistant**                               September 2023 - Present
*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 - Present
*Middlebury College Men's Club Crew Team*                             *Middlebury, VT*
- Work with coach to lead daily practices and help foster supportive and inclusive team culture for over 40 athletes.

**Treasurer**                                                        January 2023 - Present
*Middlebury College Club Nordic Ski Team*                             *Middlebury, VT*
- Responsible for team finances, coordinating equipment purchases and ensuring timely payment of race registration fees.

**Lead Computer Consultant**                                         September 2021 - Present
*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, Mathematica, Labview; Full-time Linux user

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