

Daniel Schantz

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EDUCATION

University of Florida (UF)

Master of Science in Nuclear Engineering Sciences (Thesis Track) | GPA: 4.0

Research: Runaway electron generation in spherical tokamak plasmas under Dr. McDevitt.

Gainesville, Florida

August 2025 – May 2027

Calvin University

Bachelor of Science in Engineering (BSE), Chemical Engineering Concentration | GPA: 3.5

Grand Rapids, Michigan

August 2021 – May 2025

PROFESSIONAL EXPERIENCE

UF Materials Science and Engineering Department, Plasma and Fusion Group

Graduate Research Assistant

Gainesville, Florida

August 2025 – Present

- Developing machine learning models, specifically Physics-Informed Neural Networks, to solve fundamental plasma physics partial differential equations, utilizing UF HiPerGator high-performance computing resources for model training.
- Designing deep learning workflows in Python and PyTorch to accurately model plasma dynamics in a fusion device (tokamak), with a current focus on relativistic electron formation and electron distribution evolution.
- Creating scripts using Matplotlib for data visualization and validation of the neural network output.

University of Florida Training Reactor (UFTR)

Student Assistant – Reactor Operations

Gainesville, Florida

September 2025 – Present

- Completing NRC-certified training curriculum in preparation for Reactor Operator licensure.
- Acquiring comprehensive knowledge of reactor systems, including radiation detection, thermal-hydraulics, instrumentation and controls, reactor design, and standard/emergency operating procedures.
- Assisting with daily reactor operations as a qualified second person, executing experimental data collection, and performing instrumentation maintenance and repair.

Mackinac Technology Company

Materials Science R&D Intern

Grand Rapids, Michigan

January 2024 – August 2025

- Led experimental design and process optimization for a DOE-funded Liquid Silicone Rubber window add-on project, focused on enhancing tensile strength while maintaining high optical clarity.
- Successfully eliminated 99.6% of bubble formation while also increasing surface uniformity by 92%.
- Conducted in-depth literature reviews on Liquid Silicone Rubber surface and structural modification techniques while contributing to Small Business Innovation Research (SBIR) grant writing efforts to support ongoing research funding.

Calvin University

Engineering Grader

Grand Rapids, Michigan

January 2023 – May 2025

- Evaluated coursework and provided academic support for three engineering courses, delivering structured feedback to strengthen student understanding.
- Guided students in identifying and correcting errors, fostering skill development and improving academic performance.

ADDITIONAL EXPERIENCE

Open Avenues Build Project – Quantum Physics Simulation

Student Researcher

Remote

February 2025 – May 2025

- Modeled atomic behavior using Python, simulating wave functions and energy states to explore fundamental quantum mechanical principles.

Open Avenues Build Project – Sustainable Ferrovandium Production

Student Researcher

Remote

July 2024 – September 2024

- Worked with a mentor on process optimization and environmental impact of ferrovanadium production, which culminated in a 30-minute presentation to company executives at Phoenix Tailings, Inc.

Next Academy Web Development Coding Bootcamp

Full-Stack Web Development Student

Kuala Lumpur, Malaysia

May 2023 – July 2023

- Completed an intensive 10-week, 40-hour per week bootcamp using tools like Svelte and Prisma to allow the use of JavaScript throughout application development.
- Created a full-stack web application integrating front-end UI/UX principles and back-end database management.

SKILLS

- **Programming:** Python (PyTorch, NumPy, SciPy, Matplotlib, JAX), JavaScript, HTML/CSS
- **HPC & Tools:** Linux (Bash), Slurm, Git/GitHub, Cursor, LaTeX
- **Engineering Software:** AutoCAD, Inventor, UNISIM