

Aiden Sirotkine

Champaign, Illinois — aidensiro@gmail.com — (720) 568-9582

EDUCATION

University of Illinois at Urbana-Champaign — B.S. Physics Expected May 2026
Concentration: Semiconductor Tech **Minors:** Computer Science, Music GPA: 3.96

Relevant Coursework:

MEMS and NEMS Fabrication — Simulations — Embedded DSP — Machine Learning in Physics

SKILLS

General: Cleanroom Procedure (Deposition, Etching, Lithography, Sputtering), Metrology, Artificial Intelligence, Embedded Systems, Android Development, Data Analysis, System Modeling

Programming: Python, Arduino, MATLAB, Java, JavaScript, C++, C#, C, HTML, CSS, Julia

Software: CAD, SPICE, Git, GitHub, AWS, OxDNA, Unity

EXPERIENCE

Micro and Nanotechnology Lab - Optoelectronics Researcher Champaign, Illinois
Dallesasse Group August 2025 - Present

- Characterized a high-wavelength VCSEL (Vertical Cavity Surface-Emitting Laser) for industry use.
- Deposited a piezoelectric film via PVD to enable voltage-dependent phase adjustment.
- Measured the refractive index and thickness of the VCSEL with both an ellipsometer and a Metricon.

Beckman Institute - Simulations Researcher Champaign, Illinois
Aksimentiev Group January 2025 - August 2025

- Simulated nanoscale mechanics of DNA lattices using OxDNA to compute positional fluctuations.
- Built mathematical models to extract 2D elastic moduli (bending, torsion) from time-sequenced data.
- Developed Python tools for high-throughput MD analysis and property extraction.

PROJECTS

MEMS Pressure Sensor Champaign, Illinois
Nanofabrication Project August 2025 - Present

- Removed debris from silicon wafer with both plasma and ultrasonic descumming.
- Utilized spin-coating deposition to apply photoresist to the wafer.
- Fabricated a chrome pressure sensor using UV mask proximity photolithography.
- Added a silicon nitride top layer to protect the sensor from decay.

IoT Climate Control System Fort Collins, Colorado
Personal Project May 2024 - August 2024

- Designed a closed-loop atmospheric controller to regulate temperature and humidity (for my pet snake).
- Achieved sub-10ms latency and 99% accuracy across sensor, controller, and AWS cloud backend.
- Established remote access protocols for full environmental control and monitoring from anywhere.

OTHER EXPERIENCE

POINT VR - Unity/Sound Designer Champaign, Illinois
<https://icasu.illinois.edu/outreach/point-vr> August 2024 - Present

- Enhanced a VR general relativity simulation for science education using Unity.
- Composed and implemented original music and sound design for immersive learning.
- Integrated audio assets via Unity scripts in C# for dynamic in-environment playback.