Aiden Sirotkine

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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 — Data Mining

SKILLS

General: Nanofabrication, Cleanroom Procedure, Deposition, Etching, Lithography, Sputtering, Metrology, FEA, Artificial Intelligence, Embedded Systems, Data Analysis, System Modeling
Programming: Python, MATLAB, C++, C#, Arduino, Java, JavaScript, HTML/CSS, Julia
Software: Git, GitHub, AWS, oxDNA, Unity, CAD, SPICE

EXPERIENCE

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

- Characterized a high-wavelength Vertical Cavity Surface-Emitting Laser (VCSEL) for industry use
- Deposited a 400nm piezoelectric film via sputtering to enable voltage-dependent phase adjustment
- Measured the refractive index and thickness of the VCSEL with both an ellipsometer and a Metricon

Beckman Institute for Advanced Science and Technology Champaign, Illinois
2D Materials Researcher 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 simulation 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 a 5μm photoresist layer to the wafer
- Fabricated a 50nm chromium sensor plate using UV mask proximity photolithography

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 98% accuracy across sensor, controller, and AWS cloud backend
- Established remote access protocols for full environmental control and monitoring from anywhere

OTHER EXPERIENCE

Physics Outreach and Instruction Through New Technologies Champaign, Illinois
Unity Audio Engineer August 2024 - May 2025

- 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