

DANIEL YI

daniel.yi166@gmail.com | github.com/eggoil166 | linkedin.com/in/daniel-s-yi

EDUCATION

University of Maryland

College Park, Maryland

BS, Computer Science, Mathematics | GPA: 4.00/4.00

Expected May 2029

Relevant Coursework: *Multivariable Calculus (Proof-based), Linear Algebra (Proof-based), Differential Equations (Proof-based), Honors Discrete Structures, Data Structures, Low-level*

Awards: 2x AIME | USAPhO Honorable Mention | Jaan Kalda's Physics Cup Honorable Mention | 6x Hackathon wins (5 software, 1 hardware) | IMC Prosperity 4 Round 3 Qualifier | 8VC Fellowship Finalist | Lockheed Martin CYBERQUEST Top 3

PROFESSIONAL EXPERIENCE

National Institute of Standards and Technology

Gaithersburg, Maryland

Research Associate Intern (Part-time)

05/2024

- Built multi-agent active-learning pipelines ([NIST Hermes](#)) fusing structure and functional-property measurements to choose next phase-sampling experiment, optimizing acquisition reward over prior observations to cut lab sampling
- Co-author on ongoing joint UMD-NIST research on a novel materials system (manuscript in preparation)
- Developing autonomous, modular LEGO-based robotic kits with sensors and actuators ([LEGOLAS](#)) to teach machine learning fundamentals and scientific discovery to middle and high school students (co-author on manuscript)

Oklahoma City Thunder

Oklahoma City, Oklahoma (Remote)

Data Solutions Software Engineer Intern

06/2026-Present

- Implemented query + serialization layer for live in-game stats on Daphne (ASGI) backend, served to scouting staff
- Computed batched rolling aggregates for snapshot-to-timeframe metrics including expected field goal (xFG), added Redis cache key + WebSocket handler to extend real-time serving path during games

STUDENT ORGANIZATIONS

Smith Investment Fund - Quantitative Analyst

09/2025

- Building a live low-latency cryptocurrency alpha-testing platform processing real-time Coinbase data in C++/Python
- Ranked 1st in both returns and Sharpe ratio in the annual internal alpha competition

BitCamp - Tech Organizer

10/2025

- Independently implemented a retrieval-augmented generation (RAG) chatbot deployed on AWS Lambda and Bedrock for the hackathon app and website, serving 1k+ users with <500ms query latency

PROJECTS

- [Mall](#): Python, OpenCV, scikit-learn, DeepSORT. Applied multi-camera pedestrian tracking (DeepSORT), Gaussian-process foot localization, and density-based heatmap generation to a novel piezoelectric floor-tile placement problem; implemented Pareto-frontier tile optimization over traffic-density heatmaps.
- [ttr / rsstacker](#): Python, Rust, search algorithms, simulation. Reverse-engineered TETR.IO physics, timing, scoring, and replay semantics from gameplay traces and .ttr replays; built a deterministic simulator with SRS+ movement, DAS/ARR input timing, replay verification, BFS legal-lock generation, A*/beam-search agents, and a Rust/Cargo rewrite with playable terminal UI, replay tooling, and simulation tests.
- [camcontrol](#) + [driftwm integration](#): Python, Rust, OpenCV, MediaPipe, Wayland. Built a real-time head-tracking input pipeline that estimates yaw/pitch from webcam frames, filters jitter, calibrates to normalized screen coordinates, streams newline-delimited JSON over TCP, and connects into a Rust Wayland compositor via reconnecting reader thread and calloop event-channel integration.
- [rtlquery](#): C++23, SystemVerilog, Verilator, Yosys. Deterministic C++ trading arena for 2-8 synthesizable SystemVerilog agents, simulating order matching, cancellations, inventory across configurable regimes. Parallel execution and qualification pipeline with isolated workspaces, resource gates. Hosting as club competition.

SKILLS

- **Languages:** Python, C++, C, Rust, Java, TypeScript/JavaScript, SQL, Bash, x86 Assembly, SystemVerilog
- **Systems/Backend:** TCP, WebSockets, Redis, SQLite, PostgreSQL, Wayland, Linux, NixOS/Nix flakes
- **Libraries:** NumPy, pandas, Polars, scikit-learn, Torch, TensorFlow, JAX, GPflow, OpenCV, MediaPipe, Flask, React
- **Tools:** Git, Docker, AWS, pytest, Cargo, CMake, Make, gdb, uv, Verilator, Yosys
- **Interests:** Go (board game), violin (12 yrs; all-state), home fermentation, NixOS customization