

DANIEL YI

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EDUCATION

University of Maryland

BS, Computer Science; Pure Mathematics

College Park, Maryland

09/2025 - 05/2029

HopHacks 2025 Hackathon Data Visualization Track 2nd Place

BigRed//Hacks 2025 Hackathon Winner (UI/UX, MLH Top Choice)

Columbia DivHacks 2025 Hackathon Best Use of Auth0

Smith Investment Fund Quantitative Team Member

Richard Montgomery High School

IB Diploma Awarded (41/45), SAT 1600, GPA 4.94/4.00

Rockville, Maryland

09/2021 - 06/2025

USA Physics Olympiad Honorable Mention (Top 300) 2024; Moonshot Pirates Start-Up Competition Runner-Up

2024; Sir Isaac Newton Physics Examination Distinction 2024; Lockheed Martin CYBERQUEST Top 3 2024

PROFESSIONAL EXPERIENCE

National Institute of Standards and Technology

Gaithersburg, Maryland

Research Associate Intern

09/2023 - Present

- Used Tensorflow and Jax to build a pipeline for fusion of different agent data in automated materials science
- Tested packages on different modes of multi-agent collaboration architecture using GPFlow
- Collaboration with UMD to use on a novel materials system, high impact paper expected 2026 (2nd author)
- Building autonomous LEGO kits on the LEGOLAS foundation to teach machine learning basics and science discovery to middle and high schoolers

Algoverse Summer Research Program

Virtual

Student

06/2025 - present

- Wrote pipelines for testing LLM response to ethical and moral dilemmas through different prompting strategies
- Paper expected by mid-October in preparation for submission to ICLR and AACL

PROJECTS

- **Multiview, Mall:** Python, cv2, Scikit-learn, deepsort. Full pipeline for tracking pedestrians through both a single camera view and multiple camera view, with deep embeddings and physics-informed homogeneity correction. Multiview portion only completed experimental review, modular build still in progress, around 8% error rate of losing tracks in multiview case.
- **Bear Escape:** OpenCV (Python), React.js (Vite, Tailwindcss), Three.js, Rust (SpacetimeDB). Browser rhythm game fully built in React, integrating singleplayer with AI-powered custom chart generation and multiplayer mode with multiple instruments using Socket.IO and Spacetime for realtime communication.
- **Daily Indigest:** Python (Flask), React.js (Vite, Tailwindcss), Rust (SpacetimeDB), Node.js (API, backend integration). Interactive visualization platform that maps tweets with location data and provides AI-powered sentiment analysis/trend explanation with Gemini API. Real-time tweet mapping with geographic visualization, topic-based tweet filtering and exploration; location-based tweet clustering with different granularity and location autocomplete.
- **Vision Forge:** Python (Flask), Typescript/Javascript (React.js, WASM, Tailwindcss, Node.js), Oculus viewport, OpenSCAD. Web app to make vibe-CAD possible. Text/Image to CAD generation through OpenSCAD/Tencent Hunyuan pipelines. Freely editable parametrics and re-prompting refinement possible. Script-free SCAD editor in both web interface and AR integration with Oculus headset.

SKILLS

- **Languages:** Python, Java, C++ (limited), HTML/CSS, Javascript, Typescript, C# (Unity), Rust (limited)
- **Frameworks:** Torch, Tensorflow, Jax, Flask, React, React Native, Node.js
- **Tools:** Git, Docker, Jupyter, Visual Studio, Visual Studio Code, Unity, Blender, Supabase, SpacetimeDB