Daniel Yi

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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

Education

University of Maryland College Park, Maryland
BS, Computer Science 09/2025 - 05/2029

HopHacks 2025 Hackathon Data Visualization Track 2nd Place

Richard Montgomery High School Rockville, Maryland
IB Diploma Awarded (41/45), SAT 1600, GPA 4.94/4.00 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; American Invitational Mathematics Examination Qualifier 2022; DECA ICDC Qualifier 2023; Lockheed Martin CYBERQUEST Top 3 2024

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.
- **Labeler**: Javascript, Python (Flask, KalmanFilter). Application for annotating sequences of images which was used to create the datasets used for validating data from multiview projects. Connected to a private local project that uses Kalman filters to ensure that data is continuous and track multiple instances. Used by multiple other students for school-based projects.
- **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 trend explanations including sentiment analysis through Gemini API. Real-time tweet mapping with geographic visualization, topic-based tweet filtering and exploration (Top 25 trends are shown, top 50 can be obtained via API access), AI-powered topic explanations using Google Gemini 2.0 flash, location-based tweet clustering as well as location autocomplete
- **Hide**: Node.js, Docker, React Native. Mobile app support for a hide-and-seek game. Support for multiple users on the same server sharing location to ensure fair gameplay. Includes gameplay loop and finished UI construction. Currently unfinished, planned to release as an app for iOS.

Skills

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