

# Andrew Ngo

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## Education

### University of Delaware

Newark, DE

B.S. IN COMPUTER SCIENCE, B.S. IN APPLIED MATHEMATICS | GPA: 3.86/4.0 (CUM LAUDE)

Sept. 2021 - May 2025

Graduate-Level Coursework: Machine Learning, AI, Mathematical Data Science, Linear Algebra, Random Processes

## Skills

<b>Programming</b>	Python, TypeScript, JavaScript, Java, C/C++, MATLAB, ARM Assembly
<b>Web &amp; Database</b>	HTML, CSS, SQL, MySQL, PostgreSQL, Firebase
<b>Frameworks</b>	ReactJS, Node.js, Tailwind CSS, Express.js, FastAPI, Jest, Pandas, PyTorch, Tensorflow, OpenCV, NumPy
<b>Tech</b>	Git, Docker, VSCode, LaTeX, MS Office, Ubuntu, Linux

## Experience

### University of Delaware

Newark, DE

ARTIFICIAL INTELLIGENCE RESEARCHER

Sept. 2024 - May 2025

- Designed and implemented a PyTorch-based reinforcement learning system with custom graph embeddings, enabling 10x faster counterexample search for low-dimensional problems in graph theory.
- Authored a technical paper detailing architecture and performance benchmarks, building the foundation for ongoing research.

### NASA

Mountain View, CA

SOFTWARE ENGINEER INTERN - AUTOMATION

June 2024 - Aug. 2024

- Built a production-grade ETL pipeline in Python to merge overlapping solar images into a full-scale image dataset for large-scale analysis.
- Developed a 3D solar visualization tool using OpenCV and AstroPy, containerized with Docker for deployment to 3,000+ researchers.
- Improved processing speed 3x by training TensorFlow models to automate alignment for 1,000+ images, ensuring measurement accuracy.

### Sensify Lab

Newark, DE

SOFTWARE ENGINEER INTERN - MACHINE LEARNING

Sept. 2023 - May 2024

- Optimized random forests and SVMs using Pandas feature engineering, improving depression/anxiety prediction accuracy from 70% to 75%.
- Engineered scalable neural network pipelines in PyTorch for sentiment and rating classification on 250K+ app reviews, increasing sentiment classification accuracy to 80% by bootstrapping from 3K manually labeled samples.
- Built Python tools and Amazon Mechanical Turk surveys for a large-scale human vs. LLM rating classification study, contributing to an ICWSM '25 publication.

### NASA

Mountain View, CA

SOFTWARE ENGINEER INTERN - MACHINE LEARNING

June 2023 - Aug. 2023

- Developed a full-stack data portal and data ingestion pipeline with visualization tools in JavaScript/Python for solar research, integrated with a MySQL backend to improve query speed 30% by optimizing filters for category and time-based retrieval.
- Automated solar feature detection using image segmentation in OpenCV/TensorFlow, achieving 75% accuracy on 4,680+ satellite images.
- Reduced detection processing time by 150% using multithreaded data loading and batch processing.

## Projects

### Cora, Your Anatomy Assistant

JAVASCRIPT, FASTAPI, THREE.JS, OPENAI WHISPER, IBM WATSON API, FIGMA, GIT

- Built a full-stack web app with a JavaScript/HTML frontend and FastAPI backend serving RESTful API endpoints.
- Integrated Whisper AI and IBM Watson APIs to enable speech-to-text functionalities.

### Restaurant Menu

REACT BOOTSTRAP, TYPESCRIPT, HTML, CSS, JEST, GIT

- Built a React/TypeScript website with session-based role access and state management, integrating CI/CD using GitHub Actions.
- Ensured unit test coverage of at least 90% using Jest by leading code reviews with Git for Agile team of 5 developers.

### Radiosurgery Optimizer

JULIA, PYTHON, OPENCV

- Balanced 87% tumor coverage while preserving healthy brain tissue for radiosurgery by developing an optimized simulation.