

Michael Ho

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Education

Vanderbilt University

May 2027

B.A. in Mathematics and Computer Science, Minor in Piano Performance

Nashville, TN

Relevant Coursework: Data Structures, Algorithms, Web-based System Architecture, Intermediate Software Design, Probability and Statistics, Linear Algebra, Numerical Mathematics, Differential Equations, Discrete Mathematics

Experience

Intuitive Machines (NASA Contractor)

Jun 2026 – Aug 2026

Software Engineer Intern

Houston, TX

- Built a full-stack sensor list web app used by **20+ engineers** that replaces Excel tracking for multiple lunar lander programs, designed to scale to **10,000+ devices**
- Engineered a tree-structured device hierarchy rendered as a dynamic table with two generic, self-describing data models, letting engineers add devices at any depth and define new tables and columns
- Designed and implemented a delta-based versioning system where all data mutations are written as branch deltas, stored on particular branches, and only upon approval are those changes merged and the previous version tagged
- Deployed to a server VM using Docker Compose across client, server, and mongo containers while collaborating with DevOps for a CI/CD pipeline
- Built a temporal force-directed graph visualization in D3.js so engineers could trace device relationships

CS 2201 – Data Structures Undergraduate Course

Jan 2026 – Present

Teaching Assistant

Nashville, TN

- Held **four weekly office hours** instructing students on data structures concepts and project implementation
- Graded **50+ student project assignments**, giving detailed code feedback on correctness and design

Vanderbilt Mobile Health for Global Health Lab

Mar 2025 – Dec 2025

Software Developer

Nashville, TN

- Trained and validated object detection models (Faster R-CNN, Mask R-CNN, and single-stage architectures) on a COCO dataset of **200+** annotated medical images
- Built a YAML config-driven model factory so comparing **4 architectures** was a minimal config change
- Evaluated model performance with precision, recall, and mean average precision (mAP) on multiple IoU thresholds, achieving **>95% mAP** across all classes at $\text{IoU} \leq 0.8$

Projects

Crayons to Classrooms (Change++) — *React, TypeScript, Node/Express, PostgreSQL, Supabase* Sep 2025 – Apr 2026

- Built a full-stack inventory management web app for a nonprofit supplying **\$2.6M** in school materials to **50,000+ students**, on a structured **team of 9** with a PM, EM, and designer
- Developed full-stack undo functionality for inventory movements, implementing REST API endpoints for 5 action types
- Built a mobile-responsive dashboard with Material UI, validating data with Zod at the API rather than defining data models twice, catching errors before they cause problems downstream

Roster (YC S26) — *React, TypeScript, Tailwind CSS*

Feb 2026 – Mar 2026

- Built the founding demo: a sports-betting frontend prototype where users bet against each other instead of the house
- Users can pick from **30+ NBA players** across **3 game modes**, bet against an opponent, and the winner takes the pot
- Built just the frontend against a fake data layer so we could present a demo and get feedback from investors

Leadership

Stony Brook Concerto Competition

Feb 2024 – Nov 2024

Winner of the Undergraduate Concerto Competition

Stony Brook, NY

- Performed a **15-minute solo** of Grieg's Piano Concerto with the orchestra, traveling between Nashville and NY

Technical Skills

Programming Languages: Python, Java, TypeScript, JavaScript, C++, SQL, HTML/CSS, R, Bash

Frameworks and Libraries: React, Node.js with Express, PyTorch, Mongoose, Zod, D3.js, Jest

Databases and Tools: MongoDB, PostgreSQL, Docker, Supabase, Vercel, Jira, Confluence, CI/CD, Git/GitHub

AI Tools: Claude Code, Cursor