

Mingkuan Yan

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EDUCATION

Georgia Institute of Technology

Atlanta, GA

Bachelor of Science in Computer Science, GPA 4.00

Expected Graduation, May 2026

- **Concentrations:** Intelligence (AI/ML), Computer Graphics
- **Coursework:** Data Structures, Algorithms, Machine Learning, Computer Vision, Computer Architecture, Object-Oriented Programming, Computer Graphics, Animation, Probability and Statistics, Linear Algebra
- **Organizations:** Georgia Tech Varsity Rowing (20 hours and 90km per week), Symphonic Band, Chick fil-A Team Member

SKILLS

Languages: Python, TypeScript, JavaScript, HTML, CSS, Java, PostgreSQL, GraphQL, C/C++, GLSL, Scheme

Tools/Frameworks: Next.js, React.js, Angular, React Native, Node.js, AWS, Prisma, Flask, Firebase, Git, Figma

EXPERIENCE

Amazon | Software Development Engineer Intern — Bellevue, WA

May 2025 – Present

- Developed and deployed a real-time watchdog system monitoring 100K+ subscriptions/day, ensuring in-app subscriptions across Audible, Kindle, and Prime Video stay in-sync between internal and external providers.
- Surfaces 15K+ discrepancies and \$150K+ billing mischarges per month; Replaces 8-hour batch script with 3-sec validation.
- Integrated seamlessly with existing CI/CD pipeline via Kotlin, TypeScript, and AWS CDK (Lambda, SQS, SNS, DynamoDB).
- Exposed actionable metrics on CloudWatch Dashboards for partner teams to monitor sync accuracy and latency.

Sideline (RippleX Finalist) | Founding Engineer — Atlanta, GA

January 2024 – May 2024

- Created an end-to-end multimodal vector search and automated player analysis platform for sports recruiting.
- Engineered scalable React.js/TypeScript front-end; Built Selenium and Python automation to reach 1K+ college programs.
- Demoed to 17 colleges: 7 D1, 3 D2, 5 D3, and 2 NAIA; Received 5M+ views online; Backed by former NBA leadership.

Ensemble | Founding Engineer (UI/UX Lead) — Remote

September 2023 – May 2024

- Co-developed a social music platform with 1K+ users for musicians to effortlessly collaborate and remix music.
- Refactored 40K+ line codebase; Spearheaded Ensemble Studio: Digital audio workstation with Figma, Angular, TypeScript.

Research

Entertainment Intelligence Lab @ Georgia Tech | Machine Learning Research Assistant

February 2025 – Present

- Researching adaptive representation learning to improve RL agents' response to novelty with PhD student Geigh Zollicoffer.
- Leveraging KL divergence dropout in discrete world models (DreamerV3) to ignore surprising environment signals.
- Training and evaluating on diverse benchmarks including Crafter, Carla, Safety Gymnasium; Targeting ICLR '26 submission.

PROJECTS

Gravl (gravl.org) | Next.js, TypeScript, Python, scikit-learn, GeoPandas, PostgreSQL, Google Maps API

January 2024 – Present

- AI-powered travel tracker with Next.js/TypeScript, letting 300+ users instantly generate and share animated travel histories.
- Built DBSCAN photo-based trip inference by clustering Apple/Google photo metadata, resolving ambiguities with GPT-4.
- Mapped photo locations to routes using Google Maps API and GeoPandas for geocoding and spatial joins on county data.
- Engineered PostgreSQL database via Prisma; Implemented serverless business logic with AWS Lambda via API Gateway.

Cache-22 (Berkeley AI Hackathon) | Python, OpenAI API, FAISS, SentenceTransformers

June 2025

- Created an o3-mini-backed ChatGPT clone with a caching system powered by vector embeddings and cosine similarity.
- Reduced API calls by 75%, token usage by 80% by leveraging a lightweight LLM for semantic decomposition and synthesis.

Motherly.ai (Stanford TreeHacks – Best Agentic Workflow) | Python, AppleScript, LangChain, OpenAI API

February 2025

- AI-driven biometric assistant for wellness, integrating EMG signals and Fitbit data for comprehensive health monitoring.
- Enabled intelligent system responses by triggering AppleScripts and TENS activation based on stress and user prompts.

Telepathy (HackMIT – Best Hardware Hack) | React.js, TypeScript, Python, Flask, ElevenLabs

September 2024

- \$12 non-invasive, private silent speech interface using nasal air pressure to decode tongue movements with real-time NLP.
- Streamed microcontroller data to Flask and React.js, using APIs to trigger actions like messaging or weather checks silently.

Bite (HackMIT – 1st Place TerraAPI Award) | React.js, JavaScript, HTML, CSS, Fetch API, LogMeal API

September 2023

- CV-powered wearable that reads real-time health data from Flask on RPI and delivers GPT-3.5-based nutrition feedback.