Mingkuan Yan

U.S. Citizen | 408-718-0810 | mingkuan.yan@gatech.edu
mingkuan.dev | linkedin.com/in/mingkuan-yan | github.com/MingkuanY

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

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, TensorFlow, Flask, Firebase, Git, Figma

EXPERIENCE

Xemelgo | Software Engineer Intern — Bellevue, WA   *September 2025 – Present*

- Sped up lexical search (10x, AWS Elasticsearch) for 75+ manufacturing companies in real-time RFID inventory management.
- Building React/TS task center for large-scale async job orchestration (30K+ items) and system-wide task monitoring.
- Integrating RAG-based LLM assistant using vector search and SQL/Elasticsearch-backed indexing for NL query generation.

Amazon | Software Development Engineer Intern — Bellevue, WA   *May 2025 – July 2025*

- 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.
- Replaced 8-hour batch script with 3-sec validation; Surfaced 15K+ discrepancies and $150K+ billing mischarges per month.
- 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) **| Co-Founder** — Atlanta, GA   *January 2024 – May 2024*

- AI video search platform for sports; Demoed to 17 colleges; Received 3M+ views online; Backed by former NBA leadership.
- Engineered gameplay vector search with LangChain/Pinecone VectorDB, 1K+ college outreach with Selenium/Python.

Ensemble | Founding Engineer (UI/UX Lead) — Remote   *September 2023 – May 2024*

- Developed digital audio workstation of a social music platform with 1K+ users for creating and remixing music.
- Designed and built first website (13+ pages, 40K+ lines of code) including feed, profile page in Figma/Angular/TS.

Research

Entertainment Intelligence Lab @ Georgia Tech | Machine Learning Research Assistant   *February 2025 – Present*

- Developed surprise-based adaptive representation learning to improve OOD robustness in DreamerV3 using JAX.
- Implemented KL divergence dropout and rejection sampling for distractions; improved agent performance by up to 65%.
- Benchmarked agent generalization across Crafter, CARLA, Safety Gymnasium via OpenAI Gym API and Embodied.
- Engineered 4 novelty scenarios and 12 representation variants to evaluate robustness; Submitted to CVPR 2026.

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 (CalHacks) **| Python, Playwright, Claude AI, Bright Data API**   *October 2025*

- Intelligent offline caching system based on user search patterns; Fine-tuned Playwright interception to recreate websites.

Awards

Stanford TreeHacks 2025 "Best Agentic Workflow" (Motherly): AI-driven biometric assistant for comprehensive health monitoring.
HackMIT 2024 "Best Hardware Hack" (Telepathy): $12 non-invasive, private silent speech communication with AI assistants.
HackMIT 2023 "1st Place TerraAPI Award" (Bite): CV-powered wearable that scans meal content for real-time nutrition feedback.