

Zhao Yang Kuah

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EDUCATION

Georgia Institute of Technology

Expected May 2028

Bachelor of Science in Computer Science, Honors Program, GPA: 3.91/4.00

Atlanta, GA

Relevant Coursework: Data Structures & Algorithms, Object-Oriented Programming, Intro to Artificial Intelligence, System Organization & Programming, Design & Analysis of Algorithms, Linear Algebra, Multivariable Calculus

PROJECTS

MonaListen | *WebAR, PostGIS, Three.js, React, ElevenLabs, PostgreSQL*

Oct 2026

- Won 1st place for Best Use of ElevenLabs and Best Use of Replit at Hacklanta '26 by building a WebAR tool that lets blind users explore paintings by ear, mixing sounds by camera location relative to artwork coordinates.

UpStart | *Google Veo 3.1, Vertex AI, Gemini, React + Vite, Flask*

Nov. 2025

- Engineered an LLM creative suite for founders by fine-tuning Gemini 2.5 Flash on Vertex AI, applying tool use to populate pitch decks with Slides API and generate video adverts with Google Veo 3.1, coupled with a chatbot business advisor.

Real-Time Collaborative Text Editor | *WebSocket, Yjs (CRDTs), Node.js*

July 2026

- Architected concurrency support over WebSocket protocol for a text editor, streaming plaintext changes as CRDTs for conflict resolution and optimizing for low latency while sharing live cursor positions using Yjs Awareness API.

PathoLogic | *Matplotlib, SciPy, NumPy, Pandas, Google Colab, Sphinx AI*

Feb. 2026

- Engineered an interactive 23-year measles transmission heatmap, mining WHO datasets to extract early signals of infection spread: implemented through a Python SEIR model simulating up to 5,000 individuals in contact.

EXPERIENCE

Vice President, Machine Learning Engineer

Sep. 2025 – Current

Big Data Big Impact @ Georgia Tech

Atlanta, GA

- Implemented a 91.0%-accurate 2+1D convolutional neural network in PyTorch and MediaPipe, classifying punch form from live video feed for PerfectPunch, a full-stack collaborative team of 27 members building an open webcam boxing trainer.
- Scaled the training dataset to 208% of its original size by automating OpenCV Python scripts for video data processing, extracting and structuring .npy pose landmark data for downstream time-series analysis.
- Led tri-weekly React Native + TypeScript learning workshops within a full-stack web project series on campus landmark identification, teaching data visualization and persistent state management to a club of 190+ members

Software Development Intern

June 2024 – July 2024

AEM Energy Solutions

Kuala Lumpur, Malaysia

- Saved DROID engineers 30+ minutes daily by architecting a NoSQL data persistence system (Angular PWA, PouchDB) to safeguard operational log streams, eliminating data loss during offshore disconnection.
- Won 2nd place at AEM's internal hackathon by designing a data pipeline that serializes equipment NPT graphs into a cacheable format, iterating through 3+ Agile sprints with a cross-functional development team.

Scholar, AI Scholars Program

June 2023

Inspirat AI

Kuala Lumpur, Malaysia

- Fine-tuned a VGG-16 CNN to 87.2% accuracy in distracted driver detection, problem-solving the issue of false-positive misclassifications by analyzing quantitative data including Matplotlib loss curves and Seaborn confusion matrices.
- Designed a 93.8%-accurate decision-tree classifier to detect malignant tumors on a 569-sample breast cancer biopsy dataset.
- Built an NLP sentiment classification pipeline achieving 71.5% accuracy, learning through curious questions on Word2Vec embeddings to vectorize text and distinguish tone polarity for comment filtering across 5,000+ Yelp reviews.

User Interaction Developer

Dec. 2022 – Oct. 2023

University of Hong Kong

Remote

- Developed a Unity 3D virtual classroom for distance learning with a graduate research team, mapping real-time movement to IK physics-based animation and designing accessibility-friendly GUI displays for colorblind students.
- Improved average peer-to-peer interaction time by 51.6% across classroom test groups by implementing real-time reaction streaming over a C# backend API, routed through an Apache Kafka network.

TECHNICAL SKILLS

Languages: Python, Java, C/C++, C#, JavaScript, TypeScript, HTML5, CSS, Swift, Bash

Web, Mobile & 3D: React, React Native, Angular, Node.js, Three.js, WebAR

Data Science & ML: PyTorch, TensorFlow, OpenCV, NumPy, Pandas, Matplotlib, MediaPipe, scikit-learn, Node.js

Generative AI & LLMs: LoRA Fine-tuning (Unsloth, LMStudio, Vertex AI), Ollama, Qwen, Claude, Gemini AI Studio

Backend & DevOps: PostgreSQL, WebSocket, Apache Kafka, Docker, Git, GitHub, Azure DevOps, CI/CD, Agile/Scrum