Amelia Zhang

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EDUCATION

University of Toronto (St. George Campus), Toronto, ON — Sept 2023 – May 2028

Bachelor of Applied Science in Computer Engineering + PEY Co-op
Minor: Artificial Intelligence
Relevant Courses: Deep Learning, Machine Learning, Data Structures & Algorithms, Software Engineering

TECHNICAL SKILLS

Languages: Python(PyTorch, HuggingFace), C/C++, JavaScript/TypeScript, SQL, Verilog

GenAI/ML: LLMs, Modular RAG, prompt engineering, lightweight post training alignment (RLAIF-style), LangChain, Vector DBs

Frontend & Backend: FastAPI, CSS, React, Next.js, Supabase, Linux, Vercel, Cloudflare, Docker, Git, CI/CD

Hardware: FPGA, LTSpice, Quartus, ModelSim

EXPERIENCE

ML Project Lead - AURA (Multimodal GenAI Agent for Mental Health Support) — Oct 2025 - Present
University of Toronto Machine Intelligence Team

- **Leading a faculty-supervised team of 22** to build a **multimodal agentic system** for mental health support, presented at **MIT IEEE URTC**; full research submission in preparation.
- Built a multimodal emotion & personality **perception** pipeline (RoBERTa for text; HuBERT for prosody) with **80%** accuracy and fused signals with calibration/confidence weighting to produce a structured user state.
- Designed a modular **RAG+orchestration layer** over three stores (user memory, therapeutic content, safety protocols) to translate user needs into actionable system goals each turn.
- Designed an **RLAIF-style** alignment loop: a policy LLM generates multiple candidates; a critic LLM scores; reranking selects the best responses and log interaction data for **future LoRA training**.

Software Developer - Ask-TapeB (Full-Stack Wellness Assistant) — Jun 2025 – Present
Personal Project

- Designed a **full-stack AI wellness application** featuring an interactive **React/Next.js** UI, including a real-time chatbot and an emotional analytics dashboard.
- Engineered a robust **FastAPI backend** connected to Supabase to manage user sessions and persist mood tracking data.
- Implemented an end-to-end GenAI workflow that captures user input via the frontend, processes it with LLM inference, and renders visualized feedback instantly to the user.

Project Manager, The Traveller (Interactive City Map & Routing) — Jan 2025 – Apr 2025
University of Toronto

- Built an interactive C++ mapping application with real-time rendering using EZGL and GTK, integrating a responsive GUI with search functionality.
- Implemented **A* algorithm and Ant Colony Optimization** to solve the traveling courier problem.
- Placed 6th in the contest, finding optimal routes in under 50 seconds.

PUBLICATION

Monkeypox Case Prediction with Machine Learning, San Francisco, USA — Jun 2022 - Nov 2022
2023 International Conference on Computer, Machine Learning and Artificial Intelligence
Authors: Xianghan Zhang(My legal name), Anqi Wang, Dongxiao Li, Wei Shen

- Built a time-series forecasting model using Python and Facebook Prophet to predict Monkeypox infection trends.
- Co-authored and published a paper indexed by Google Scholar, CPC, and Crossref databases.