August Zhang

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Education

University of Ottawa Sep 2022 - Expected Dec 2027
Bachelor of Computer Engineering *Ottawa, ON*

Experience

Software Developer Intern May 2026 - Aug 2026
Sinai Foundation *Toronto, ON*

- Cut deployment time by **84%**, from ~25 min to ~4 min, across 3 production websites serving **5,000+** monthly visitors with a GitHub Actions CI/CD pipeline that automates builds, Jest tests, and releases.
- Modernized 3 legacy websites in Agile sprints by rebuilding their UIs in React and TypeScript on a shared library of 25+ components, cutting duplicated code by 30%.
- Moved the organization's full donation pipeline online by integrating Stripe end to end across all 3 sites (checkout, webhook validation, failure handling), processing **$5K+** from 300+ donors in its first 2 months.
- Deployed a GPT-4o RAG chatbot answering 400+ visitor questions a month, cutting email inquiries by ~25%.

Software Developer Intern Sep 2025 - Apr 2026
SenseWay *Ottawa, ON*

- Reduced average PostgreSQL query latency by **87%**, from 150 ms to 20 ms, by adding composite indexes for user and timestamp lookups and restructuring high-frequency telemetry queries.
- Built a Go (Echo) REST API and PostgreSQL backend on AWS EC2 ingesting ~800K heart rate, GPS, and battery readings a day from 50+ devices on unreliable mobile networks, cutting dropped readings from ~5% to under 0.5%.
- Shipped a Vue.js dashboard streaming live GPS, biometrics, and alerts over WebSockets with automatic reconnection, holding p95 latency under 150 ms at **10,000+** concurrent connections in load tests on Docker services on AWS EC2.
- Engineered a native Kotlin Android app giving mobility aid users real-time crosswalk voice alerts, pairing live WebSocket telemetry with a Roboflow object detection model (90% confidence threshold, 93% test precision).

Projects

League of Legends Win Probability Model Project Site ↗
Python, LightGBM, scikit-learn, FastAPI, React

- Developed a chess.com-style game review that charts each team's win probability every 15 s, re-scores key moments under alternative decisions, flags missed plays worth 3+ points of win chance, and ranks which option helped most.
- Calibrated win chances to within 1.1 points in every probability bin on 12,036 held-out games by preventing data leakage from future events and test games; accuracy rises from 73% at minutes 10–15 to **84%** at minutes 25–30.
- Collected **200,000+** matches, since no public dataset had full match timelines, with a 24/7 crawler on GCP across 4 regions, raising throughput from ~1,100 to ~2,700 games/hr per region by cutting API calls to one per game.

LLM Minecraft Build Agent Project ↗
Python, Claude, Gemini, OpenSCAD, trimesh, SciPy, Hunyuan3D

- Raised prompt-matching builds from 40% to 62% on 50 test prompts with a render-and-critique loop: an LLM (Claude or Gemini) writes OpenSCAD code, reviews the build from 5 camera angles, and fixes spatial errors.
- Voxelized OpenSCAD meshes by ray-testing block centers in trimesh and placed them as merged /fill commands over RCON with no mods, finishing builds in under 5 min.
- Turned a single photo into builds of up to 1.4M blocks via Hunyuan3D; a KD-tree finds each block's 8 nearest surface samples 500x faster than checking every sample, and each block takes the closest color in CIELAB space.

AudiobookFree: PDF-to-Audiobook Converter Project ↗
Python, Kokoro TTS, FFmpeg, pytest, uv

- Created a local app, backed by 542 automated tests, that converts PDFs into chaptered M4B audiobooks with Kokoro TTS, checkpointing each audio chunk with a SHA-256 hash so crashed runs resume where they stopped.

Technical Skills

Languages: Python, Go, TypeScript, JavaScript, Kotlin, SQL, Java, C/C++
Frameworks & APIs: React, Vue.js, Node.js, FastAPI, Echo, Android SDK, Stripe API, WebSockets, Jest, pytest
AI & Machine Learning: PyTorch, LightGBM, scikit-learn, pandas, NumPy, LLMs, OpenAI API, RAG, Roboflow
Data & Infrastructure: PostgreSQL, Docker, AWS EC2, GCP, GitHub Actions (CI/CD), Linux, Git