Dorothy Zheng

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Education

University of Toronto, St. George — Toronto, ON

Honours Bachelor of Science in Computer Science — ***GPA: 4.0/4.0*** — *Sept 2025 - Apr 2028 (Expected)*

- **Arbor & C. David Naylor Scholar ($24,500)** — Selected as one of 8 University of Toronto National Scholarship finalists, awarded on the basis of academic merit and demonstrated leadership excellence.
- **Don Walker Scholarship Recipient ($12,000)** — One of 80 global recipients selected by Magna Inc.
- **Awards** — **National First Place** (Canadian Computing Competition), **Global Nominee** (NASA Space Apps)
- **Extracurriculars** — Hack the 6ix Partnership Director, Computer Science Student Union Executive

Technical Skills

Languages: Python, C++, JavaScript, TypeScript, SQL, Java, R, Ruby, Swift, HTML/CSS
Technologies: React.js, Next.js, Node.js, Express.js, FastAPI, Tailwind CSS, MongoDB, Docker, Git, REST APIs
Programs: Linux/Unix, Postman, GitHub, Claude Code, Codex, Prompt Engineering, AI Agents, Microsoft Office

Experience

Cerebras Systems — Toronto, ON

Software Engineering Intern — *Incoming Sept 2026*

- Joining the runtime team responsible for developing tools for the world's largest AI accelerator.

Brunel Momentum — Remote

Software Engineering Intern — *Mar 2026 – May 2026*

- Developed a **customer-facing package tracking platform** for an AI-driven middle-mile logistics start-up.
- Built a **full-stack app**, including a responsive **Next.js** frontend for live shipment visibility and customer interaction flows, with backend services to manage customer-package linking, tracking, and support actions.
- Designed and implemented **20+ RESTful API endpoints** for customer and package data, optimizing data retrieval and backend integration; validated endpoints with Postman and unit tests.

Projects

Distributed Parallel Top-K Processing Engine | *Python, Distributed Systems, Parallel Computing*

- Implemented and optimized **distributed Top-K nearest neighbors** solution for **parallel compute architecture/accelerator**, sharding data and coordinating reductions through on-chip communication fabric.
- Distributed **specialized root and merge programs** across processing elements with a custom mapping.
- Designed a **phased row/column merge algorithm** supporting up to **2048 vectors and 32 dimensions** with **deterministic tie-breaking** passing baseline and edge test cases in optimized cycle counts.

sEMG Bionic Arm Control System | *Python, MicroPython, Signal + Data Processing, Embedded Systems*

- Engineered a **real-time surface electromyography (sEMG) control system** with signal retrieval, feature extraction, and servo activation to achieve smooth, accurate mobility for a **custom-engineered bionic arm**.
- Implemented the **signal-processing algorithm** using **ML-adjacent concepts** including RMS extraction and noise-reduction techniques. Used **20,000+ sEMG signals** as samples to achieve fine-tuned control.
- Awarded Gold, Best Engineering, Sanofi BioGenius; received $2,000 scholarship at Windsor Science Fair.

SimplyAuthentic – UofTHacks 2026 | *Next.js, TypeScript, FastAPI, Python, MongoDB, Gemini API*

- Developed a **full-stack job-match platform** with a **Next.js/TypeScript frontend** and **FastAPI backend**, deploying containerized services across **Vercel** and **Railway** with support for real-time proctored interviews.
- Built a **combined behavioural inference procedure** combining historical context, spoken communication transcription, browser interaction events, and LLM-assisted analysis to classify applicants into archetypes.

ASLingo | *React.js, MongoDB, PyTorch, MediaPipe, Auth0, Vercel, Docker*

- Built a **React.js frontend** integrated with **Auth0 authentication** and a **Node/Express.js backend**, connected to **MongoDB** for an AI-powered web platform teaching ASL through real-time gesture feedback
- Trained a **custom PyTorch sequence model** using **MediaPipe and OpenCV** to classify ASL gestures and generate human-readable coaching tips (e.g., "move right hand higher") through low-latency inference endpoints.