

Yongkang Cheng

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EDUCATION

University of Toronto (St. George), Toronto, ON

Sep 2023 – May 2028 (expected)

BASc in Computer Engineering + PEY Co-op (cGPA: 3.87/4.0, Score: 88.6/100)

Relevant: Applied Deep Learning Fundamentals, Software Design & Communication

TECHNICAL SKILLS

- **Languages:** Python, C/C++, JavaScript, Node.js, Java
 - **Backend/Web:** FastAPI, Flask, React, REST, Docker, Nginx, SQL/NoSQL
 - **ML/Data:** PyTorch, NumPy, Pandas; basic LangChain
 - **Tools:** Linux, Git, SSH, Firebase, Raspberry Pi
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EXPERIENCE

Frontend Manager, Voluntrack.org

May 2024 – Present

Volunteer, Non-profit | React, Firebase

Toronto, ON

- Led a 4-person team to redesign the React frontend; improved task completion and engagement by 20%.
- Built fuzzy search and filtering over Firebase data; streamlined workflows and simplified onboarding.

Research Software Intern, X-Lab

Jun 2025 – Jul 2025

Research Intern, X-Lab @ UofT | Python, Simulink

Toronto, ON

- Verified a pre-tape-out hybrid PPM+PSK chip; built Python/Simulink pipelines for 2ns symbol sync and carrier recovery under discontinuous 4GHz signals.
 - Implemented K-means clustering calibration to mitigate 100ps timing shifts from cross-modulation.
 - Presented an interactive demo site at the Undergraduate Engineering Research Day (UnERD).
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PROJECTS

Handwritten Text Recognition (CRNN)

Jun 2024 – Aug 2024

Course Project | PyTorch, Python

- Trained a CRNN achieving **87%** word- and **95%** char-level accuracy on **10k+** samples.
- Implemented connected-component word segmentation; **1024 x 1024** inference in **<4s** on CPU.

City Mapify – Interactive Mapping Engine

Jan 2025 – Apr 2025

Course Project | C++, OpenStreetMap

- Built C++ mapping engine parsing **2GB** OpenStreetMap data with QuadTree indexing at 60 FPS.
- Implemented A*/Dijkstra pathfinding and delivery optimization (Simulated Annealing, ACO) for **250+** packages.

Wildfire Disaster Communication Platform

Jan 2025

Hackathon | Python, Streamlit, Flask

- Built real-time incident map (Folium) and two-way messaging with photo uploads and roles.
- **Top-8 finalist** at UTEK; automated severity scoring for resource allocation.

Self-Hosted Chatbot with Diary DB

Oct 2024

Personal Project | React, FastAPI, Nginx, NoSQL

- Deployed full-stack chatbot replicating personal style; TLS, DDNS, and reverse proxy for secure access.
 - Integrated OpenAI API and vector search for context-aware Q&A over personal diaries.
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AWARDS & HONORS

University of Toronto Excellence Award (UTEA)

Apr 2025

- \$7,500 scholarship for 6 students among 2nd to 4th ECE for research potential.

ECE Awards & Dean's List Scholar (UofT)

Sep 2024 – Apr 2025

- Awarded for top academic standing (average >80%) for 4 consecutive semesters.