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)
Relevant: Applied DL 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

EXPERIENCE

Frontend Manager, Voluntrack.org May 2024 – Present
Volunteer, Non-profit (Remote)   React, Firebase
- 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 @ UofT Jun 2025 – Jul 2025
Python, Signal Processing
- Prototyped Python pipelines (sync, carrier recovery) and an interactive demo site; presented at UERD.
- Implemented clustering-based calibration to stabilize timing under noisy high-frequency data.

PROJECTS

Handwritten Text Recognition (CRNN) Jun 2024 – Aug 2024
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
C++, OpenStreetMap
- Built a C++ engine to parse/render OSM data with quadtree indexing for smooth pan/zoom.
- Implemented pathfinding (Dijkstra, A*, heuristics) and delivery optimization.

Wildfire Disaster Communication Platform Jan 2025
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 – Present
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.

AWARDS & HONORS

University of Toronto Excellence Award (UTEA) Apr 2025
14-week faculty-supervised research;
7,500 scholarship.
ECE Dean's List Scholar (UofT) Sep 2024