Anson Sun

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Skills

- **Programming:** Python, C, C++, Java, JavaScript, TypeScript, SQL, Assembly, Verilog, MATLAB.
- **Technical:** Object-Oriented Programming, Machine Learning Frameworks & Libraries, Optimization Algorithms, FPGAs, Debugging.
- **Non-technical:** Bilingual in English and Mandarin, Team Leadership, Communications, Teamwork, Problem Solving, Attention to Detail.

Education

Bachelor of Applied Science in Computer Engineering | *University of Toronto* **Sep. 2022 – Jun. 2026**

- Relevant courses: ECE243 Computer Organization, ECE297 Software Design and Communication, ECE344 Operating Systems, ECE345 Algorithms and Data Structures, APS360 Applied Fundamentals of Deep Learning, ECE361 Computer Networks I.

Project Experience

Machine Learning Engineer | *University of Toronto* | *Toronto, ON* **May 2024 – Feb. 2025**

- Coordinated a team of four through **Google Colab** and **Git** to design and develop an Automated License Plate Recognition (ALPR) system using **Python** with **PyTorch** that produced recognition results from still images and videos.
- Designed video and image **model pipelines** for **data processing** and result generation that produced accurate results in under five seconds.
- Developed, implemented and trained custom-curated **object recognition** and **OCR** models based on **YOLOv10** and **EasyOCR**, using **CUDA**.
- Wrote custom scripts for **NumPy** data conversion and **OCR** data augmentation, enabling pre-processing of image data before model training.

Software Developer | *University of Toronto* | *Toronto, ON* **Jan. 2024 – May 2024**

- Directed a team of three to develop a large-scale responsive map application in **C++** using **VSCode** that includes personalized recommendations and navigation, using the **Agile** development approach and **Git** for version control.
- Utilized the **GTK GUI** library to build a responsive and modern user interface including search bars, auto-zoom, and customized GUI components.
- Implemented **Dijkstra's** and **A* algorithms** to facilitate speedy pathfinding and accurate navigation.
- Developed a custom algorithm based on **A***, **two-opt**, **simulated annealing**, and **ant-colony optimization (ACO)** to solve the travelling courier problem, achieving a 98% optimal route.

FPGA Applications Developer | *University of Toronto* | *Toronto, ON* **Jan. 2024 – Apr. 2024**

- Led a team of two to create a clarinet simulator application using **C** on the **DE1-SoC** FPGA that processes and stores audio.
- Designed an **audio processing pipeline** to process audio data received from built-in audio channels on the FPGA.
- Created a **data processing pipeline** that stores and modifies audio data, utilizing the FPGA's **on-board memory**.
- Contributed to the development of a **graphics processing program** that renders the **GUI** of the simulator through **VGA**.

Assistant Web Developer | *Faculty of Medicine, University of Toronto* | *Toronto, ON* **Dec. 2021 – Jun. 2023**

- Created a customized internal **content management system (CMS)** for the Department of Corneal Surgeries using **WordPress**, with customizations done using **CSS** and **HTML**, leading to more than 50 professional users a month.
- Consulted weekly with a team of software engineers and medical professionals for **technical and content updates**.
- **Handled technical inquiries** from website users, with each inquiry successfully resolved in under 30 minutes.

Personal Projects

NextPersona **Dec. 2023 – Ongoing**

- Independently designed an interactive AI-based customizable chat platform developed in **Python** using **PyCharm**, with **Streamlit** for **front-end GUI design** and **LangChain** for **language processing**, utilizing OpenAI's **GPT-4 API**.
- Polished the UI of the application using **Streamlit** and attracted more than 100 users monthly since launch.
- Provided **continuous technical improvements** to the platform based on analytics of usage and user satisfaction.