

BELLA HUANG

+1 (647) 639-3625 | bella.huang@mail.utoronto.ca | github.io | in/bella-huang3715/ | github.com/Bellahuang3715

EDUCATION

University of Toronto

Toronto, ON

BASc. in Computer Engineering

Sep. 2020 – May 2025

Coursework: Algorithms & Data Structures, Software Communications & Design, Operating Systems, Databases, Computer Networks, Computer Organization, Digital Systems, Applied Fundamentals of Deep Learning

EXPERIENCE

Technical Co-Founder/Software Lead

Dec 2023 – Present

Aiko Translations

Toronto, ON

- Led the software development of a **streaming speech-to-speech translation device** for senior homes, building a server hosting **OpenAI Whisper** on NVIDIA Jetson, integrating **FastAPI** & **Google Cloud Translation API**
- Developed a **dynamic transcription display** leveraging **Flask**, **Websockets**, and **React**, with real-time updates and multilingual support, providing dynamic language detection, translation, and seamless user interaction
- Worked closely with a **cross-functional team** in a **high-paced setting**, conducting **ongoing user testing sessions** at **2 senior homes**, refining the software based feedback collected from caregivers and residents

Display Systems Engineering Intern (Performance Team)

Jun 2023 – Aug 2024

Qualcomm

Markham, ON

- Developed an **automated testing framework** using GoogleTest to ensure the accuracy of the LibScale library, used in the **Display Processing Unit** for handling image resizing requirements across various devices, replacing manual testing with a parameterized testing system capable of running **1000+ tests within 10 seconds**
- Implemented buffering using STL libraries and **GDB** to address memory leaks, enhancing visual data processing for image pixel data, achieving an **11% increase in time efficiency** and a **40% increase in CPU efficiency**
- Designed and implemented a **guard system** for ClearCase **version control software** from scratch, streamlining the **CI/CD pipeline** by enabling automated blocking of delivery requests that fail system tests
- Cleaned up namespace pollution across **500+ files** and standardized custom types across **3000+ files**, enhancing **code maintainability** and **cross-platform compatibility**

Software Developer

Apr 2022 – May 2024

You're Next Career Network (YNCN)

Toronto, ON

- Built and enhanced the search & filter system of an interactive **mobile mapping application** which assisted **2000+ students** in navigating to **65+ company booths** at the University of Toronto career fair
- Implemented the **database** and user authentication for an alumni portal utilizing **AWS RDS** and **Firebase**
- Revamped and maintained YNCN's website, resulting in a **28% increase** in annual visits, reaching **3500+ users**

Software Development Intern

May 2022 – Sep 2022

Xanadu Quantum Technologies

Toronto, ON

- Worked on the Cloud team in **fullstack** development across multiple platforms, including PennyLane Cloud, Xanadu Cloud, and the Quantum Codebook, using **GraphQL** for data querying and manipulation
- Focused on **front-end** development and **end-to-end testing**, utilizing **Cypress** and **Jest** for test coverage

PROJECTS

Sorting Algorithms Visualizer

Jan 2022 – Jul 2023

- Created a dynamic web application to visually represent **sorting algorithms**, including **insertion sort**, **selection sort**, **bubble sort**, **quick sort**, and **merge sort**, implementing **real-time animations** to show the step-by-step execution of each algorithm, including details on **space & time complexities**

Geographic Information System

Jan 2021 – May 2021

- Built an **interactive mapping software** in a group of 3, featuring 10+ cities utilizing OpenStreetMap and Geocaching API, leveraging path-finding algorithms like **Dijkstra**, **A-Star**, **Breadth & Depth-first search**
- Employed STL data structures to **optimize performance**, speeding up the initial map loading time by **35%**

TECHNICAL SKILLS

Languages: C, C++, Python, Perl, JavaScript, TypeScript, SQL, MATLAB, Verilog, ARM Assembly

Web Technologies: HTML, CSS, React.js, Node.js, Flask, Express.js, Next.js, Bootstrap, Tailwind, jQuery, Material-UI

Developer Tools: Git, GitHub, Visual Studio, Docker, Google Cloud Platform, Amazon Web Services, Cypress, Jest