Sean Kim

Computer Engineering Student at University of Toronto
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Education

University of Toronto **Toronto, ON**
Bachelor of Applied Science in Computer Engineering, Software and Artificial Intelligence *Sep 2021 – Present*

- **cGPA: 3.85** / 4.0 | **Awards:** NSERC Undergraduate Student Research Award, Dean's Honour List in All Semesters
- **Relevant Coursework:** Data Structures and Algorithms in **C** and **C++** (OOP), Digital Systems (FPGA, **SystemVerilog**), Computer Organization (**ARM Assembly**, Processor), Software Design and Communication (Designing a GIS using **C++**), Signals and Systems (**MATLAB**), Linear Algebra

Experience

Machine Learning Research Intern **May 2023 - Present**
University of Toronto - iQua Group *Toronto, ON*

- Working at iQua Group

Web Developer & Organizer **Jul 2022 – Jan 2023**
UofTHacks *Toronto, ON (Remote)*

- Contributed to the website and dashboard for the **Canada's first student-run** hackathon, UofTHacks X, serving over **600+** hackathon participants accessing the site
- Implemented an Atomic Design approach utilizing **React.js**, **Next.js**, and **stitches.dev**, resulting in a **20%** reduction in file size and improved organization of unnecessary components
- Collaborated with the design team to translate User Interface designs from **Figma** into functional, responsive components, ensuring a seamless experience for hackathon participants

Projects

Aazami | *Qualcomm Tiny ML Kit, Arduino Nano 33 BLE Sense, Edge Impulse, Neo Pixels*

- **MakeUofT 2023 (Largest Hardware Hackathon in Canada) Winner of Most Innovative Power Efficient Hack using Qualcomm Tiny ML Kit**
- Created an innovative voice recording device, utilizing **Qualcomm Tiny ML Kit**, **Arduino Nano 33 BLE Sense**, and **Neo Pixels**, to aid individuals with dementia, which captures and replays the last 10 seconds of audio upon recognizing the voice command, "I forgot," using a Machine Learning voice recognition system
- Conducted extensive Machine Learning training with **Edge Impulse** on the voice recognition system, totaling over **1 hour** and **27 minutes** of voice data, resulting in a **98.7%** accuracy rate

OTFMap | *C++, GTK, Glade, EZGL, OpenStreetMap API*

- Designed and developed a functional map (GIS) application with **C++** and **OSM API**, accompanying a customized database with **STL** structures, such as Vectors, Priority Queues, Sets, and Maps
- Refactored **4000+** lines of code to improve maintainability and readability of the repository
- Created a user-friendly interface using **GTK**, **Glade**, and **EZGL** library including night, subway, and bike modes
- Implemented **Djikstra**, **Parallel Djikstra**, and **A*** algorithms for fully optimized path-finding in **20** different cities and Travelling Courier Problem, achieving lower travel time than all TA algorithms and achieved **top 10%** of class

TrackTC | *React.js, styled-components, Node.js, Express.js, MongoDB, TTC API*

- Created a responsive and user-friendly web app that alerts commuters of potential TTC and bus delays via email reminders and real–time transit information to users
- Utilized **React.js** and **Express.js** to implement GET and POST requests for retrieving and displaying **TTC API** data

Technical Skills

Languages: C, C++, Python, HTML5, CSS3, JavaScript (ES6+), ARM Assembly, PHP, MATLAB
Fullstack: React.js, Next.js, Redux, SASS/SCSS, styled-components, stitches.dev, Node.js, Express.js, MongoDB
Hardware and Electrical: SystemVerilog, ModelSim, MultiSim, Intel Quartus Prime, Breadboards, DE1-SoC Boards
Misc Tools: Git, GTK, Glade, Edge Impulse, VSCode, GitHub, Figma

Leadership

DEEP Summer Program Counsellor **Jun 2022 – Jul 2022**
University of Toronto Engineering Outreach Office *Toronto, ON*

- Cooperated with graduate and upper-year students to mentor **20+** high school students in STEM fields such as **Python** Programming, Python Data Analytics, and Solar Cell Physics in a total of **106 hours** of class