

# SEAN KIM

Toronto, Ontario

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## Education

### University of Toronto

Toronto, ON

*Bachelor of Applied Science in Computer Engineering, Software*

*Sep 2021 – Present*

- **cGPA: 3.85 / 4.0** | **Awards:** Dean's Honour List in All Semesters, Edward S. Rogers Sr. Admission Scholarship
- **Relevant Coursework:** Data Structures and Algorithms in C and C++ (OOP), Digital Systems (FPGA, Verilog), Computer Organization (ARM Assembly), Software Design and Communication (Designing a Map using C++)

## Experience

### 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

### Webmaster Executive

Jul 2022 – Present

*Skule Commuter Students Directorship*

*Toronto, ON (Remote)*

- Developed and launched the University of Toronto Engineering Community's website using **React.js** and **Redux**, with an estimated **400+** commuter students accessing the site
- Managed the full web development process, including design and implementation using **Figma**

## Projects

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

- **MakeUofT 2023 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 application comparable to Google Maps using **C++** and **OSM API**
- Created customized database with **C++ STL** structures, such as Vectors, Queues, Sets, and Maps, to store and manage large amounts of geographic data
- 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 **Dijkstra** and **A\*** algorithms for fully optimized pathfinding in **20** different cities, passing every complex Toronto path tests under **4 seconds**

**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+), PHP, MATLAB

**Fullstack:** React.js, Next.js, Vue.js, Redux, SASS/SCSS, styled-components, stitches.dev, Node.js, Express.js, MongoDB

**Hardware:** SystemVerilog, ARM Assembly, Modelsim, 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*

- Cooperated with graduate and upper-year students to mentor **20+** high school students in STEM fields such as **Python** Programming, Data Analytics, and Solar Cell Physics in a total of **106 hours** of class
- Encouraged students to pursue interests in STEM fields and provided information about careers in these areas