

Jaedah Shin

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EDUCATION

University of Toronto

BASc, Engineering Science

Major: Robotics Engineering, Minor: Bioengineering

Sep. 2022 – 2026

Toronto, Ontario, Canada

EXPERIENCES

Ted Rogers Centre for Heart Research – [Franklin Research Lab](#)

Undergraduate Researcher

May. 2023 – Present

Toronto, Ontario, Canada

- Project 1: Designed flexible PCBs with Maxim Integrated components for a wearable heat regulation device. Supported research on thermal hyperemia and endothelial function for a graduate student.
- Project 2 (On-Going): Optimize System in Package (SiP) / System on Chip (SoC) technology for wearable devices. Select and evaluate SiPs for integration with accelerometers and optical sensors. Assess firmware and software tools for usability within the Zephyr RTOS to communicate, configure and get data from the Maxim Integrated device. Quantify and optimize battery consumption using power profiling kits. Design a prototype board in Eagle to integrate the best SiP/SoC into a compact wearable platform, ensuring fPCB compatibility with various circuit components for Franklin Research Lab.

UofT Wearable

Co-Founder, Co-President

Jun. 2024 – Present

Toronto, Ontario, Canada

- Co-founded and led the UofT Wearable design team, focusing on innovative wearable technology at University of Toronto.
- Managed sub teams in Embedded Electronics, Wireless Communications, and Software Integration.
- Organized training sessions on Zephyr RTOS, Bluetooth Low Energy, and signal processing.
- Led project planning, resulting in the integration of subsystems into a full prototype.

Raum Hangul

Co-Founder

Sep. 2020 – Present

Vancouver, B.C., Canada

- Conducting Korean language programs for children via Zoom
- Recruiting and supervising high school volunteers for teaching roles
- Oversee all students, teachers, and programs

Projects

ESC 204 (Praxis III) - Smart Bin (PlastiSorter Bin)

Jan. 2024 – April. 2024

Create a bin that can sort recyclable plastics into seven categories. This project aims to transform plastic waste management in urban areas of Ghana by introducing automation and a rewards system. Utilized C, C++, Python, and Arduino for project development.

Hug Bot

Jan. 2024 – Present

HugBot uses facial emotion recognition to comfort humans. When sensing sadness or anger, it mirrors their expression, offering hugs until they feel better. Upon detecting happiness, HugBot celebrates by spinning its propeller hat. It maintains eye contact and blinks for a natural interaction. Used Python and Arduino

Language & Skills

- **Programming Language:** C++, C, Python, Assembly, System Verilog, LaTeX, MATLAB
- **Design & Development Software:** Zephyr RTOS, NRF Connect, LabVIEW, Fusion 360, Eagle
- **Language:** Korean, English, Chinese