

# Jaehah Shin

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## EDUCATION

University of Toronto

Sep. 2022 – May. 2027

Bachelor of Applied Science in **Engineering Science + PEY Co-op**

Toronto, Ontario, Canada

**Major:** Robotics Engineering, **Minor:** Bioengineering

## Language & Tools

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

## EXPERIENCES

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

May. 2023 – Present

*Undergraduate Researcher*

Toronto, Ontario, Canada

**Project 1:** Designed flexible PCBs with Maxim Integrated components for a wearable heat regulation device.

Researched on thermal hyperemia and endothelial function with 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 and develop 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

Jun. 2024 – Present

*Co-Founder, Co-President*

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

Sep. 2020 – Present

*Co-Founder*

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

Led subsystems and coordinated team meetings in the development of a smart bin that sorts recyclable plastics into seven categories. The project aims to revolutionize plastic waste management in urban Ghana with automation and a rewards system. Contributed to the project using C, C++, Python, and Arduino.

Hug Bot

Jan. 2024 – Present

Co-developed HugBot, a robot using facial emotion recognition to comfort humans. Contributed to structural design and Arduino-based electrical components. HugBot mirrors user expressions, offers hugs during sadness or anger, and spins its propeller hat when detecting happiness.