Jaehah Shin

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EDUCATION

University of Toronto   **Sep. 2022 – 2026 + PEY (co-op)**
*BASc, Engineering Science (**Major:** Robotics Engineering, **Minor:** Bioengineering)*   *Toronto, Ontario*

EXPERIENCES

Ted Rogers Centre for Heart Research – [Franklin Research Lab](#)   **May. 2023 – Present**
Undergraduate Researcher   *Toronto, Ontario*
• Project 1: Designed flexible PCBs with Maxim components for a wearable heat regulation device. Supported research on thermal hyperemia and endothelial function for a graduate student.
• Project 2: Optimized System in Package (SiP) / System on Chip (SoC) technology for wearable devices. Selected and evaluated SiPs for integration with accelerometers and optical sensors. Assessed firmware and software tools for usability. Quantified and optimized battery consumption using power profiling kits. Designed 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   **June. 2024 – Present**
Co-Founder, Co-President   *Toronto, Ontario*
• 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
• Co-founded a Korean volunteer foundation during the pandemic with peers
• 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 TensorFlow, Python and Arduino

CERTIFICATIONS, SKILLS & INTERESTS

- **Programming Languages**: C++, C, Python, Assembly, System Verilog, LaTeX, MATLAB
- **Design & Development Software:** LabVIEW, Fusion 360, Eagle, Alitum Designer, ROS2, Zephyr
- **Language:** Korean, English, Chinese