# Jaehah Shin

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Jaehah Shin JahahShin

## Education

**BASc:** University of Toronto, Engineering Science — Sep 2022 - 2026 + PEY

- **Major**: Robotics Engineering
- **Minor**: Bioengineering

**Dogwood Diploma**: Yale Secondary School — Sep 2018 - June 2022

## Experience

**Ted Rogers Centre for Heart Research – Franklin Research Lab**,
Undergraduate Researcher — Toronto, Ontario, Canada, May 2023 - Present

- Project 1: Assisted in designing flexible printed circuit boards (fPCBs) with Maxim components for a wearable device focused on heat regulation. Supported a graduate student's research on "Induced Local Thermal Hyperemia Coupled with Laser Doppler Flowmetry to Assess Endothelial Function."
- 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.

**Raum Hangul**,
Founding Member / Co-Founder — Sep 2020 – Present

- 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

**UTKESA (University of Toronto Korean Engineering Students' Association)** ,
Executive of Marketing (2022) & Academic (2023) | Director of Academic (2024) — Toronto, Ontario, Canada, Sep 2022 – Present

- Provided guidance and advice to first-year students on academic matters, including study strategies, and university resources.
- Organized and facilitated PEY (Co-op) Seminar: Coordinated seminars to prepare students for PEY opportunities, offering insights into industry expectations and application processes.
- Organized and facilitated Tutorial Sessions: Conducted tutorial sessions before midterms to assist first-year students in understanding course material and preparing for exams effectively.

**UTwind**,
Aerodynamics Subsystem Member — Toronto, Ontario, Canada, Feb 2023 – May 2023

- Using qBlade software to optimize the shape of the blade.
- Making part of the turbine based on the programming and calculations.
- Worked for the International Small Wind Turbine Contest.

**UTQC (University of Toronto Quantum Computing)**,
Q - News Contributor — Toronto, Ontario, Canada
Jan 2023 – May 2023

- Writing each week's q-news segment, as editors on LaTeX.
- Find a research paper that is related to quantum computing that I found interesting to share with people

## Projects

**CIV 102 Bridge Projects** — Nov 2022

- Built a bridge using matboard and have done multiple iterations of testing and calculation using *MATLAB* and *Python* to improve maximum load.

**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.
- Focused on enhancing recycling efficiency, improving segregation accuracy, and fostering community involvement
- Used *C++*, *python*, Arduino.

**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. Hug Bot
- Used *tensorflow*, *Python*, *Arduino*

## Scholarships

**Youth Leadership Scholarship:** Issued by Milal Church in 2022

**Joseph Chung Scholarship:** Issued by Coram Deo Foundation in 2022

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## Skills

**Programming Languages:** C++, C, Python, Assembly, System Verilog, LaTeX, MATLAB

**Language:** Korean, English, Chinese

- Certification in Korean Proficiency Test (Highest Level)
- Chinese Character Certificate (Pre-level 4) [A lower level is better]
- HSK (Chinese Proficiency Test)

**Software:** LabVIEW, Fusion 360, Eagle, Alitum Designer, ROS2