

Aaron Huang

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EDUCATION

University of Toronto - St. George Campus

BASc. in Engineering Science — Robotics Engineering (Specialization)

Toronto, ON

Sep 2026 — June 2031

SKILLS

- Programming: Java, TypeScript, Git, Python, Kotlin, SQL
- Frameworks and Cloud: React, Next.js, Vercel
- Robotics: Computer vision, image processing, robot programming in Java
- Design: Onshape, Fusion 360 CAM, SolidWorks

EXPERIENCE

Chief Engineer and Advisor, FRC 7520

Jan 2021 — June 2026

FIRST Robotics Competition

Toronto, ON

- Built and tuned closed-loop control systems for drivetrain and manipulation subsystems using encoders, IMUs, and motor controllers.
- Iterated on gains, sensor placement, and actuator selection to reduce drift, latency, and instability during real-world operation.
- Worked across mechanical, electrical, and software teams to translate performance goals into robust, field-ready motion.
- Diagnosed hardware issues through bench validation and system integration to improve repeatability in autonomous and teleoperated tasks.
- Led a 60+ member organization across 8 subteams and drove execution that resulted in the team's first two consecutive World Championship appearances.
- Robots: [2024](#) [2025](#) [2026](#) [Offseason](#)

Captain and Founder, VRC 95500A

Sep 2024 — June 2026

VEX Robotics, York Mills CI

Toronto, ON

- Founded the school's VEX team and built its design, build, outreach, and event-operations workflow from scratch
- Grew the team to 30 members and managed over \$6,000 in funding from the school and sponsors

PROJECTS

Inverted Pendulum

[GitHub](#), [Video](#)

- Implemented a control system for a cart inverted pendulum in real life
- Capable of staying upright for 3+ hours using a LQR controller running on a Raspberry Pi Pico

erLay

[GitHub](#), [Video](#)

- Developed an ultra-portable CoreXY 3D printer that fits in a suitcase, enabling rapid on-site part fabrication during competitions
- Engineered a rigid, rod-based frame to speed teardown and setup in competition environments

AstralCNC

[GitHub](#)

- Designed a Raspberry Pi Pico + GRBL-HAL CNC controller board to refurbish a 25+ year-old school router into a usable machine
- Implemented hardware-level emergency stop/reset and configurable 3.3V/5V I/O to support up to 8 stepper drivers

UTRA Hacks 2025

[GitHub](#)

- Developed "Baylee", a mobile health assistant robot that won Best Use of Generative AI at UTRA Hacks 2025
- Implemented emotion recognition and practical health assistance by combining facial recognition, product dispensing, and tool-calling workflows connected to an LLM backend
- Engineered an autonomous robot with self-moving cabinets for medicine, tissues, and sanitation