Victor Yu

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EDUCATION

University of Waterloo   Waterloo, ON
Bachelor of Applied Science in Computer Engineering   *Sep. 2025 – May 2030*

EXPERIENCE

Backend Software Developer   May. 2025 – Aug. 2025
JTMCode (Client: Mississauga Piano Studios)   *Toronto, ON*
- Upgraded a live enterprise platform for Mississauga Piano Studios, serving 150+ active users and hosting 60+ business functions.
- Improved maintainability and performance in a Docker + Redis production environment by using Java + SQL.
- Contributed to backend uptime of 3.5+ years by debugging queries and strengthening system resilience.

Lead Engineering Instructor   Apr. 2024 – Jul. 2025
MechEd Robotics   *Mississauga, ON*
- Led week-long robotics camps, overseeing logistics, teaching content, and team coordination.
- Developed and delivered curriculum that introduced kids to real-world engineering principles in an engaging way.
- Directed a team of 8 to successfully launch and run 5 separate educational sessions across the GTA.

Computer Service Technician   Sep. 2023 – Jan. 2024
New Tech Navi Wireless   *Mississauga, ON*
- Provided tech repair and support services for phones and computers; diagnosed issues, completed repairs, and restored customer confidence.
- Handled front-of-house operations including sales, customer service, and support.

PROJECTS

BattleFit | *Gemini API, JavaScript, HTML/CSS, Voice Input, TTS, Canvas*
- Built a browser-based fitness game for TerraHacks 2025 that gamifies workouts for kids with voice commands and gives AI-powered feedback.
- Developed the Gemini-powered voice input module for navigating menus and selecting workouts.
- Implemented real-time exercise form feedback with text-to-speech coaching cues using pose detection data.

Pong Bot | *C++, ESP32, Wireless comms, IR Sensors, CAD*
- Built a semi-autonomous ping pong robot that can switch between manual and auto fire modes.
- Designed control loop using ESP-NOW for wireless communication; used IR sensors for ball detection and safety.

MartialVision | *OpenCV, Microcontrollers, Sensors, GitHub*
- Created a computer vision-based martial arts trainer using OpenCV for pose analysis and sensor-equipped gloves for punch detection.
- Engineered custom MicroBit gloves to visualize punch force data and stream it live into a Python-based GUI.
- Awarded *Most Technical Hack* at FraserHacks 2024.

Custom Video Game Console | *C++, ESP32, CAD, Embedded Systems*
- Developed a handheld retro-style gaming console running custom games like Pong and Galaga.
- Optimized graphics and input handling on low-resource hardware using efficient C++ code.

TECHNICAL SKILLS

Languages: C++, Java, JavaScript, SQL, HTML/CSS
Developer Tools: GitHub, Docker, Redis, Eclipse, WinSCP, PuTTY, VS Code, Google Cloud, TinkerCAD
Hardware: ESP32, Arduino, Circuit Design, PCBs, Soldering

AWARDS

Sir Isaac Newton Physics Contest | *Top 500 in Canada*   Jun. 2025
FraserHacks | *Most Technical Hack*   Nov. 2024
Avogadro Chemistry Contest | *Top 250 in Canada*   May. 2024
CETA Team Robotics Competition | *Second Place*   Apr. 2024
Peel Skills Electronics Challenge | *Third Place*   Mar. 2024