Aaron Ghosh

📞 647-675-3762 ✉ aaronghosh9@gmail.com in linkedin.com/in/aaron-ghosh ⌨ github.com/aaronghsh

Education

McMaster University — **Expected Graduation April 2027**
Bachelor of Engineering in Electrical Engineering (B.Eng.) — *Hamilton, Ontario*

Relevant Coursework:

- Logic Design
- Circuits and Systems
- Principles of Programming
- Microprocessors Systems
- Data Structures and Algorithms
- Electronic Circuits and Devices

Experience

City of Brampton — **February 2023 – November 2023**
STEM Instructor — *Brampton, Ontario*

- Mentored 25 students weekly about engineering principles and values through interactive learning modules
- Facilitated critical thinking skills through hands-on activities such as robotics, coding, and circuit design
- Coordinated closely with 5 other instructors to ensure students with a welcoming environment that helps foster innovation, teamwork, and creativity

March 2023 – August 2023
Camp Counsellor — *Brampton, Ontario*

- Supervised 30 campers daily while promoting a positive and inclusive environment, ensuring safety and well-being
- Streamlined camp schedules in collaboration with fellow staff to include 10 unique daily activities for an engaging camp experience
- Directed 10 weekly workshops with interactive elements to foster curiosity and problem-solving skills among campers

Kumon — **September 2022 – February 2023**
Center Assistant / Tutor — *Brampton, Ontario*

- Tutored 100 different students 1 on 1, in person and virtually about subjects such as Math and English
- Developed a welcoming and supportive environment where students feel comfortable and encouraged to ask questions and actively participate
- Optimized staff and tutoring schedules, increasing efficiency and accommodating 3 extra students daily without any compromise
- Analyzed progress for 20 students bi-weekly to provide detailed feedback to parents, resulting in a score increase of 30%

Projects

Snake Game | *C, C++, OOD GitHub, Visual Studio* — **December 2024**

- Designed and implemented a modular snake game in **C++** using **object-oriented design principles**, including encapsulation, inheritance, and polymorphism, to create reusable and maintainable code
- Developed advanced gameplay mechanics with multiple special food spawning and generation, border wrap-around and collision detection
- Applied **dynamic memory allocation** management and structured programming to ensure efficient and reliable functionality with **no memory leakage**

Automated Sterilization System | *Python, Raspberry Pi, Autodesk Inventor, Granta EduPack* — **November 2023**

- Developed a **Python**-based **Quanser** virtual environment program to control an autonomous robot designed to simulate a sorting and sterilization disposal system for medical grade equipment
- Operated a **Linux**-based software utilizing **Raspberry Pi** to control a **Quanser QArm** for physical demonstrations
- Engineered special housing for surgical tools with **Autodesk Inventor**, ran simulation stress tests to ensure strength
- Researched high-temperature-resistant materials using **Granta EduPack** to enhance the sterilization process

Dynamic Solar Panel | *Autodesk Inventor, Arduino, C++, PCBs, Breadboards* — **January 2023**

- Programmed an **Arduino**-based control system using **C++** to interface with 2 servo motors and 4 photoresistors, dynamically optimizing the orientation of the solar panel to maximize the amount of sunlight captured
- Designed and 3D modelled housing components in **Autodesk Inventor**, optimizing for fabrication and assembly

Technical Skills & Certificates

Languages: Python, C, C++, Assembly, HTML/CSS, Java, JavaScript, Verilog, MATLAB/Simulink
Developer Tools: Visual Studio, PSpice, GitHub, Quartus II, Microsoft Office, Autodesk Inventor, Granta EduPack
Equipment: Arduino, Raspberry Pi, PCB, Wave Generator, Oscilloscope, Analog Discovery 3 (AD3)
Certificates: Standard First Aid/CPR-C/AED, Worker Health and Safety Certification, WHMIS, High Five PHCD