Kabir Virk

(905)-598-1885 | kabirvirk1206@gmail.com | linkedin.com/in/kabir-virk | github.com/kabirvirk1206

EDUCATION

Waterloo University   Waterloo, ON
Bachelor of Applied Science in Electrical Engineering (Co-op)   *Sep 2025 – Dec 2030*

PROJECTS

Arduino Radio Controlled Car | *Arduino, C++, Soldering, Wiring*   Feb 2025 – July 2025
- Built a fully wireless RC car using two **Arduino** boards and a joystick controller. Connected using **RF** transmitter/receiver modules.
- Designed circuits to control motors, integrating power and receiver modules.
- Programmed custom Arduino firmware in **C++** to handle joystick input and translate it into car movements.

Flipper Zero Expansion Module | *ESP32, Python, Soldering, Wiring*   July 2025 – Aug 2025
- Developed a custom expansion board enabling Wi-Fi capability for the Flipper Zero using an **ESP32**.
- Implemented communication between two ESP32 boards: one acting as the Flipper's Wi-Fi interface and the other running **Python** firmware to run peripherals upon successful connection.
- Soldered and wired supporting circuitry to integrate the ESP32 boards, ensuring stable connectivity.

4-Bit Binary Adder | *Digital Logic, Wiring, Multimeter, Circuit Design*   Aug 2025
- Designed and implemented a 4-bit binary adder circuit using **XOR, AND, and OR** gates on a breadboard.
- Wired DIP switches as inputs and LEDs as outputs to demonstrate binary addition in real time.
- Debugged wiring and logic issues with a **Multimeter**, ensuring accurate outputs across all 16 input combinations.

EXPERIENCE

Hardware Team Member   Aug 2025 – Present
Midnight Sun Solar Car Design Team   *University of Waterloo*
- Completed onboarding by designing and laying out a simple battery tester circuit & **PCB** in **Altium Designer**, gaining familiarity with the team's hardware design flow.
- Learned fundamentals of solar vehicle hardware systems including battery management, high-voltage safety, and DC/DC conversion.
- Contributed to schematic review by validating design requirements in line with the team's philosophy.

Lead of Development   Sept 2023 – June 2024
Coding Club   *Brampton, ON*
- Developed and delivered lesson plans introducing 20+ high school students to **Python** programming and problem-solving.
- Prepared students for the **Canadian Computing Competition (CCC)** by teaching strategies, practice problems, and debugging techniques.
- Organized and led coding-related events such as hackathons and coding competitions to give students practical experience.

Build Team Member   Sept 2022 – June 2024
Robotics Team   *Brampton, ON*
- Collaborated with the build team to design, assemble, and test competition robots under VEX rules.
- Assisted in assembling drivetrain and manipulator subsystems using **VEX robotics** components, supporting the team's mechanical design and prototyping.

TECHNICAL SKILLS

Hardware: Arduino, ESP32, Soldering, Wiring, Multimeter, Circuit Design, Digital Logic
Languages: C/C++, Python, Java, JavaScript, HTML/CSS
Technologies: Git, Linux, VS Code, Visual Studio, JetBrains, Eclipse