Robert Vigneron

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Education

University of Waterloo – BASc in Mechatronics Engineering Sept 2025 – Present

Bell High School – French Immersion Congregated Gifted Program Sept 2021 – June 2025

- Leadership Experience: Relay For Life Head, Student Council Leader
- DELF B2 Certification

Experience

Mechanical Team Lead June 2022 – May 2025
Spark Youth Robotics (FRC 8729) Kanata, ON

- Exercised communication as a lead for 2 years, teaching 50 members technical skills to be contributing members
- Demonstrated creativity and problem solving while prototyping and fabricating 3 multi-mechanism robots which competed in 8 FIRST Robotics competitions including 3 provincial championships
- Spearheaded the 2025 design cycle and troubleshooting of all robot mechanisms to build a shooting robot
- Created a full CAD design (link here) in Onshape and bill of materials for the team's 2025 robot
- Selected appropriate motors, motor controllers, and encoders for wheels, joints, and flywheels

Network Infrastructure Intern July 2024 – August 2024
Nokia Ottawa, ON

- Displayed quick learning and initiative by researching methods of analyzing packet sequences to implement and compare them in python
  - Dimensionality reduction methods to compress complex data sets
  - Statistical distance metrics to compare sequences
- Used SQLite in Python to manage experimental data to select the most efficient distance metric given a dataset
- Engineered and professionally demonstrated a tool to compare packet sequences within required timelines

Projects

Paragon – Python Video Game github.com/qazwxp/Paragon-ICS4U-summative

- Developed an educational game using Pygame in Python, practicing object-oriented programming, organized file handling, and version control with GitHub
- Demonstrated extensive independent problem solving and goal management capabilities

Arduino Binary Counter github.com/qazwxp/arduino-binary-counter

- Engineered a binary counter with up and down buttons and a hold feature
- Showcased ability to quickly and independently learn basic breadboarding and the arduino library

Skills

- **Tools:** SolidWorks, Onshape, AutoCAD, Git, Excel
- **Languages:** Python, SQL, C++, C, Java

Awards

- FIRST Robotics Provincial Finalists (Team award 2023, 2024)
- University of Waterloo President's Scholarship (90%+, $2000)