

# Robert Vigneron

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## Skills

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

## Experience

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### Mechanical Team Lead

June 2022 – May 2025

Spark Youth Robotics (FRC 8729)

Kanata, ON

- Taught and engaged fifty mechanical team members as the mechanical team lead for two years, attending eight competitions
- Directed the brainstorming, designing, and fabrication of three multi-mechanism robots which competed in FIRST Robotics competitions
- Led the technical development and troubleshooting of drivetrain, elevator, and intake systems
- Created a full CAD design in Onshape and bill of materials for the team's 2025 robot

### Network Infrastructure Intern

July 2024 – August 2024

Nokia

Ottawa, ON

- Researched, compared, and selectively implemented methods of analyzing packet sequences
- Dimensionality reduction methods: PCA, LDA, T-SNE
- Statistical distance metrics: KLD, JSD, EMD, TVD
- Automated the selection of a distance metric by comparing runtime data
- Collected, stored, and accessed experimental data in databases using SQLite in Python
- Engineered and demonstrated a complete and robust solution within required timelines

## Projects

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### 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 self-research 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 self-teach new hardware and software skills very quickly

## Education

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**Bell High School – French Immersion Congregated Gifted Program (Sept 2021 – June 2025)** Leadership

Experience: Relay For Life Head, Student Council Leader

**University of Waterloo – BAsC in Mechatronics Engineering (Sept 2025 – Present)**

## Awards

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- University of Waterloo President's Scholarship
- Ontario Silver Medal
- FIRST Robotics Provincial Finalists (Team award 2023, 2024)