

Sobhan Zare

647-836-5458 | sobhanz.com | mr.sobhan.z@gmail.com | sobhan-zr

Education

University of Waterloo – Honors Mechatronics Engineering, (BASc)

Expected June 2030

- Courses: Algorithms and Data Structures, Circuits, Engineering Graphics and Design

Projects & Activities

Card Analysis and Robotic Dispensing System – Design Project

Sep 2025 - Dec 2025

- Designed and built an autonomous mechatronic system to shuffle, dispense, and sort cards
- Developed **C++** control logic to coordinate sensors and motors across multiple subsystems
- Implemented and tuned a **PID controller** to achieve accurate motor positioning and prevent overshoot
- Built modular software separating hardware control from high-level system logic
- Integrated optical sensors and motors into a coordinated control pipeline
- Tested and refined system behavior through iterative experimentation and debugging

Robotics Club – Vice President, Builder

Sep 2024 - Jun 2025

- Achieved **1st place** at the McMaster SUMO Bot competition
- Designed competitive robots using **SolidWorks** and **Fusion 360** for mechanical components, and **C++** for control logic
- Balanced performance trade-offs under competition constraints such as weight, torque, and reliability
- Led build sessions, mentored junior members, and coordinated competition preparation

Wordle, Flappy Bird – Game Development

- Designed and programmed three interactive games using **Java** and **C++**
- Implemented game logic such as collision detection, word guess validation, user input handling, and debugging
- Optimized code structure and algorithms to strengthen problem-solving skills and enhance runtime efficiency

Experience

University of Waterloo Formula Electric Team – Driveline Team Member

Sep 2025 – Present

- Assisted in integrating motor, transmission, and control systems to meet dynamic vehicle performance targets
- Performed system testing and data analysis to validate driveline efficiency under competitive conditions
- Participated in iterative design reviews, applying feedback to refine mechanical layouts and component selection
- Supported manufacturing and assembly of driveline components, ensuring compliance with safety and competition regulations

BAASS Business Solutions Inc. – Junior Software Developer

Oct 2023 – Jan 2024

- Improved data quality and usability by cleaning and restructuring client records in Sage CRM
- Designed and prototyped an AI agent for Sage accounting software to streamline common user workflows
- Worked closely with senior developers to debug issues and ship incremental improvements in a production environment
- Took ownership of assigned features from initial design through testing and refinement

Private Math Tutor – Self-Employed

Oct 2022 – Aug 2023

- Taught Grade 8 mathematics through customized lesson plans tailored to individual learning styles
- Diagnosed knowledge gaps and adapted explanations based on student feedback
- Tracked student progress over time and adjusted instruction based on observed outcomes

Skills

Programming	Java, C++, VEXIQ, Arduino C
Tools & Platforms	Git, Sage CRM, SolidWorks, Fusion 360, AutoCAD, Microsoft Excel, Word, PowerPoint
Engineering Concepts	Control systems, sensor integration, system testing, Engineering Drawings, GD&T
Certifications	Certified SolidWorks Associate (CSWA), WHMIS 2015, CPR

Technical Interests

Software	Game engines, and robotics control software, Software systems, System integration
Mechanical	Using CAD tools for design and prototyping, integrating sensors and actuator in mechanical systems
Personal Interests	Automotive systems, EVs, control systems, and hands-on experimentation with hardware/software