Owen O'Donnell

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EDUCATION

Western University Expected 2027

Bachelor of Engineering Science (B.E.Sc.), Mechatronic Systems Engineering & Artificial Intelligence Systems Engineering (Dual Program)

- Associate Mechanical Design Certificate | Ivey Case Competition Participant

TECHNICAL SKILLS

Languages: C#, TypeScript, Python, Java, SQL, MATLAB

Frameworks & Tools: .NET, Angular, Git/GitHub, Azure DevOps (CI/CD), Jasmine/Karma, TypeMoq, Arduino

Engineering & Design: SolidWorks, Onshape, Mechanical-Electrical Systems Integration, Prototyping & Iterative Testing

WORK EXPERIENCE

Software Engineer Intern May 2026 – Aug 2026

Wandrian (ItaliaRail)

- Developed features and fixes for ItaliaRail, a rail booking platform offering 80,000+ routes, across a .NET/C# backend and Angular frontend.
- Built a trip summary card featuring a mobile swipe-up interaction and conditional logic based on train type.
- Made the class comparison popup configuration-driven so content updates no longer require a deployment; designed it with a C4 diagram and gained developer sign-off before implementation.
- Fixed fare validation bugs in the journey engine that allowed duplicate trips to be added to the cart.
- Resolved failing unit tests and Azure DevOps CI pipeline failures; worked through code reviews and sprint meetings in an Agile team.

Water, Fuel, and Environmental (W.F.E.) Technician Jun 2024 – Aug 2024

Canadian Forces Base Trenton | Trenton, ON

- Operated and maintained industrial water purification and fuel distribution systems.
- Conducted preventive maintenance, diagnostics, and troubleshooting to ensure system readiness.
- Documented maintenance procedures and system performance to military technical standards.
- Ensured strict compliance with safety protocols when handling hazardous materials.
- Collaborated with multidisciplinary teams in a regulated, high-responsibility environment.

Framing Specialist Summers 2023 & 2025

Fast Track Construction | Trenton, ON

- Interpreted engineering drawings and blueprints to execute precise framing work.
- Used hand and power tools to fabricate and assemble structural components.
- Worked efficiently in a fast-paced team environment to meet project deadlines.
- Developed strong attention to detail, time management, and on-site problem-solving skills.

ENGINEERING PROJECTS

GeoCell – Subsurface Battery Energy Storage (Capstone) Sept 2026 – Present

Mechatronic & AI Systems Design | Team of 4 | Western University

- Developing a renewable energy storage system that houses batteries in drilled U-shaped boreholes beneath wind and solar farms.
- Designing the battery storage system, including battery selection, cartridge design, well interface, structure, and thermal analysis.
- Designing a mechatronic servicing system to extract and replace faulty batteries.
- Developing an AI-based monitoring interface that tracks battery health and performance.
- Evaluating existing oilfield equipment for drilling, casing, and battery extraction.

Autonomous Solar-Powered Blimp – LiftLabs Sept 2024 – Present

Mechanical Team Lead | Thompson Engineering Fund-Supported | liftlabs.ca

- Leading mechanical system design for an autonomous, solar-powered aerial platform.
- Designing and modelling structural components and system layout using SolidWorks.
- Performing component sizing, feasibility analysis, and mass distribution planning to support autonomous flight.
- Coordinating closely with electrical and controls teams to ensure full system integration.

- Managing design reviews, prototyping iterations, and implementation planning to meet performance constraints.

Rock-Paper-Scissors Robotic Hands Jan 2026 – Apr 2026

Team Project | MSEduino, 3D Printing

- 3D printed and assembled two robotic hands, each actuated by two motors and controlled with an MSEduino microcontroller.
- Programmed the motor control that moves each hand into rock, paper, or scissors gestures.
- Programmed a start-up routine that selects the strongest pair of gestures for the two hands, avoiding weak pairs such as paper and paper.
- Developed decision logic that takes the opposing team's two hands as input and chooses which hand to keep and which to withdraw to win.
- Integrated motor control and game logic into a single working system.

Robotic Arm – Western Engineering Competition (2nd Place) Jan 2024

Senior Design Team Member | London, ON

- Designed and implemented a servo-driven robotic arm for precise object manipulation.
- Led material optimization efforts to balance performance, cost, and manufacturability.
- Validated design feasibility through testing, iteration, and performance evaluation.
- Created a SolidWorks model before testing to further validate the design.

LEADERSHIP & INVOLVEMENT

Assistant Coach, Men's Engineering Basketball Oct 2026 – Present

Western University

- Help run practices and game-day coaching for the Western Engineering men's basketball team.
- Work with players on skill development, team strategy, and in-game adjustments.

Executive Member, Western Ski & Snowboard Club Sept 2025 – Present

Western University

- Executive member of a student organization serving ~1,700 active members.
- Help plan and execute ~6 large-scale events per month, managing logistics, budgeting, and coordination.
- Organized major ski trips to Tremblant and Banff, including vendor coordination and risk planning.
- Developed leadership, organizational, and communication skills while managing high-responsibility events.

AWARDS & HONOURS

- 2nd Place, Western Engineering Competition (Senior Design), January 2024
- Thompson Engineering Fund Recipient, 2024
- Ontario Scholar