# RYLAN PRIMA

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## EDUCATION

**Bachelor of Engineering Science in Mechanical Engineering** September 2013 - April 2028
University of Western Ontario

## SKILLS AND INTERESTS

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|---|---|
| **Interests** | Mechanical Design, Product Development, CAD/CAE, Finite Element Analysis (FEA) |
| **Design Software** | Solidworks (CSWA), AutoCAD, TinkerCAD, MATLAB |
| **Microsoft/ Lang** | Office 365, Power Query, etc/ JAVA, Python |

## PROJECTS

**Nissan GT-R R35 Structural Design and FEA - Solidworks** Dec 2025 - Present
*Personal Project*

- Designing parametric CAD models of GT-R R35 body kit, shell, and wheels using reference images and dimensions
- Performing FEA to evaluate stress, deformation, and material efficiency under realistic loads
- Aim to optimize geometry and materials for stiffness, minimal deformation, and manufacturability
- PLUS: Create a website to present CAD models, FEA results, and design insights professionally

**Structural Design, Analysis and Materials Selection - Maglin Site Furniture** Sept 2025 - Dec 2025
*Industry-Sponsored Course Group Project*

- Redesigned bench wood components via, Solidworks to replace Ipe with a sustainable North American species
- Performed and researched materials selection using ASHBY charts, PUGH matrices, and decision matrices
- Validated design with SolidWorks FEA under realistic public-use loading
- Optimized board thickness to maintain strength after thermal modification, via FEA

**Kinematic Design and Analysis of a Crank–Slider Mechanism** Sept 2025 - Dec 2025
*Course Group Project*

- Designed a crank–slider mechanism in SolidWorks to convert rotational motion into reciprocating piston motion for a pneumatic engine
- Selected linkage dimensions to achieve required piston stroke and inlet/outlet port alignment with 1 DOF
- Derived loop-closure equations to compute displacement, velocity, and acceleration
- Verified kinematic behavior using SolidWorks motion simulation, confirming with analytical results

**Tornado Simulation Design Project** Jan 2024 - Apr 2024
*Client-Informed Course Design Project*

- Collaborated in a team to design and physically build a tornado simulation prototype for demonstration
- Used a fan-driven airflow system with a fog machine and fog fluid to visualize vortex formation and flow behavior; designed air intake openings
- Guided construction using sketches, background research, GO/NO-GO decision criteria, and a concept evaluation chart during prototyping
- Prepared progress and design reports, communicating design intent, build decisions, and results

## WORK EXPERIENCE

**Toromont CAT (Summer Student – Warehouse/Parts)** May 2025 - Aug 2025
Performed hands-on warehouse and parts-handling work in a fast-paced, safety-regulated environment.

**Russel Aquatics (Swim Instructor / Lifeguard)** Aug 2022 - Aug 2024
Taught children to swim by adapting instruction to different learning styles while enforcing pool safety regulations.