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

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.

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