

Ian Khadra

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EDUCATION

University of Toronto

Bachelor of Applied Science (Mechanical Engineering) + PEY

Toronto, Ontario

Aug 2024 - May 2028

- Relevant Courses: Sustainability Engineering, Mechanical Design, Mechanics of Solids, Thermodynamics, Engineering Analysis.
- Dean's Honour List, Winter 2026 (SGPA: 3.80/4.00).

PROFESSIONAL EXPERIENCE

PCL Constructors Westcoast Inc.

Engineering Student

Vancouver, British Columbia

May 2026 - Aug 2026

- Entrusted to lead planning and management for a three-office renovation project, defining the full project scope, producing layouts and quantity takeoffs, then soliciting quotes from 30 subcontractors to assemble the final project proposal.
- Presented a \$140K renovation proposal to department leadership, defending all project scopes and addressing system considerations to authorize funding and secure district-manager sign-off.
- Independently designed a department-wide SharePoint platform using Power Apps and Power Automate to centralize clearance records for 250+ companies, eliminating duplicate tracking across projects.
- Analyzed schedule, budget, deficiency, and Indigenous inclusion metrics across 9 projects to deliver 8 monthly reports to BC Hydro.
- Drafted as-built drawings across 3 BC Hydro sites, field-verifying layouts and redlining shop drawings for project closeout.

AMC Project Development & Management

Intern – Project Coordination Engineer

Vancouver, British Columbia

May 2025 - Aug 2025

- Reviewed multidisciplinary engineering drawings and validated installed systems against approved designs, ensuring compliance with Canadian and provincial standards across 3 active construction sites.
- Conducted Excel-based bid evaluations across scope, pricing, and exclusions to guide contractor selection and procurement.
- Coordinated with subtrades to maintain schedule progress, filing daily reports on completed work, site conditions, and deficiencies.

ENGINEERING DESIGN PROJECTS

UTSM – Mechanical Division (Urban Concept Team)

Mechanical Design Member, University of Toronto

Toronto, Ontario

Sep 2025 - Present

- Redesigning a wheel-support system for a sustainable hydrogen fuel-cell vehicle with integrated motor and brake mounts, 3D-printing custom molds using SolidWorks to fabricate forged-carbon-fibre components that reduced system mass by 12%.
- Reverse-engineered stock brake hardware into SolidWorks models, integrating parts within chassis assembly to avoid part conflicts.
- Machined a vehicle axle on a lathe from engineering drawings, gaining DFM insight into how tool access shapes part geometry.
- Partnered with the electrical team to align part mounts and dimensions, embedding wire routing constraints into vehicle CAD.

5 DOF Robotic Arm

MIE243, Prof. MacKay

Toronto, Ontario

Sep 2025 - Dec 2025

- Led the design of a 5-DOF robotic arm in SolidWorks, targeting 1 m/s tracking for miniature action filming with a 1 kg camera.
- Sized link materials and wall thicknesses through bending calculations, then used SolidWorks static FEA to assess stress concentrations and deflection, verifying a 1.5 safety factor against yielding.
- Specified BLDC motors and gear ratios for joint torques, using non-back drivable worm gears with ribbed belts for power delivery.
- Co-authored a 100+ page technical report evaluating 3 design concepts, path iteration trade-offs, and gear calculations, accompanied by a 60+ part CAD package with 2D orthographic and 3D isometric drawings.

Peer Support Program Dedicated Space

APS112, Project Manager

Toronto, Ontario

Jan 2025 - April 2025

- Designed a 9.3 m² dedicated quiet space within an active library layout by evaluating spatial constraints to maintain clear pathways, while satisfying Ontario Building Code accessibility standards.
- Simulated sound propagation in CadnaB per ISO 140-3 standards to achieve privacy from a 49.6 dBA background noise baseline.
- Managed client communications and project scoping, evaluating 80+ concepts via Pugh matrices to deliver a proposal under \$5,000.

ADDITIONAL INFORMATION

- Technical Skills: SolidWorks, AutoCAD, Microsoft Excel, Bluebeam, Power BI, CadnaB, Engineering Drawings, Construction Documentation, Site Reviews, Quantity Takeoffs, Python.
- Professional Skills: Multidisciplinary Collaboration, Stakeholder Coordination, Technical Communication, Problem-Solving, Adaptability, Initiative, Self-Directed Learning.
- Languages: English (Fluent), French (Fluent – French Immersion), Arabic (Passive Understanding).
- Team captain for 5 years at the highest U18 provincial soccer level (BCSPL), demonstrating leadership and communication skills.