

Parmeet Gill

Design & Drafting Engineer | 3D CAD Modelling | GD&T

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Summary

Mechanical engineering graduate (University of Manitoba, Co-op) with hands-on experience building production-ready 3D models and fabrication and installation drawings in Autodesk Inventor and SolidWorks, with drawings sealed by a Professional Engineer and released for fabrication and field installation.

Technical Skills

3D CAD & Modelling: SolidWorks, Autodesk Inventor, Assemblies & Weldments, Surfacing, Sheet Metal

2D Drafting: AutoCAD, Fabrication Drawings, Installation Drawings, GD&T (ASME Y14.5)

Analysis & Validation: ANSYS (Static FEA, Modal Analysis), SolidWorks FEA, Tolerance Stack-Up

Design for Manufacturing: Design for Manufacturability, FMEA, Material & Process Selection, Bolt & Joint Analysis

Documentation & PDM: Autodesk Vault PDM, Engineering Change Orders, BOM Management, Revision Control

Manufacturing Processes: CNC Machining, Sheet Metal Fabrication, Steel Weldments (CSA W59/W47.1)

Experience

Mechanical Engineering Intern

May 2024 – Aug. 2025

Manitoba Hydro, Generation Design Department

Winnipeg, MB

- Built detailed 3D CAD models and assemblies in Autodesk Inventor for generating-station components, applying GD&T (ASME Y14.5) and Design for Manufacturability, including selecting sheet metal fabrication over machined or cast alternatives for mounting brackets to reduce cost and lead time
- Designed the Long Spruce Generating Station proximity probe bracket, producing fabrication and installation drawings specifying A36 steel weldments, CSA W59/W47.1 welding, fastener torques, and protective coatings; sealed by a P.Eng and released for fabrication and construction
- Performed tolerance stack-up analysis across mating components and ran static FEA and modal analysis in ANSYS on structural mounts to validate stress distribution and identify natural frequencies against resonance
- Managed drawing and model revisions through Autodesk Vault PDM; reverse-engineered a surface air cooler into a full 3D CAD model from site photographs; and supported field commissioning, resolving design-to-field discrepancies with technicians

Quality Engineering Intern

May 2023 – Dec. 2023

Manitoba Hydro, Construction Services Department

Winnipeg, MB

- Reviewed engineering drawings and field conditions to execute ITPs and QC documentation; built an AI-assisted Power Automate workflow to extract structured data from PDF drawings, reducing manual entry across 3+ active projects

Selected Project Work

Automated Cone Inspection System

2025

MECH 4860, Engineering Design Capstone | Client: Northern Blower Inc.

Winnipeg, MB

- Designed an automated inspection cell in SolidWorks, including a custom end effector and adjustable 76 in centering table, holding a $\pm 1/16$ in profile tolerance across roughly 40 cone geometries
- Validated mechanical designs with FEA and machined the end effector from Al 6061-T6, integrating a Fairino FR10 cobot and Mitutoyo digital dial gauge within a \$30,000 budget

Education

Bachelor of Science in Mechanical Engineering, Co-op/IIP Option

Graduated May 2026

University of Manitoba

Dean's Honour List

Certifications, Languages & Interests

Certifications: WHMIS, Class 5 License

Languages: English, Hindi, Punjabi

Interests: Literature, Philosophy, Film