Abhay Chhabra

Calgary, AB T3P 1J8

587-703-0016 | chhabraabhay140@gmail.com

**Summary**

Highly motivated and detail-oriented **Mechanical Engineer with a proven track record in construction project coordination and technical project execution**, seeking to leverage expertise in mechanical, electrical, and data analysis to manage complex construction projects at Tesla. Proven ability to thrive in a fast-paced, dynamic environment, leading cross-functional teams and accelerating project timelines while maintaining strict regulatory and quality standards. Recognized for leveraging data analytics to drive efficiency and optimize project outcomes.

# EDUCATION

**University of Calgary,** Calgary, Alberta

*Bachelor of Mechanical Engineering, Minor in Digital Engineering 2019-2024*

* Graduated with **Distinction** (GPA: 3.7/4.0).
* **Relevant coursework:** Mechatronics, Circuits, Materials, Heat Transfer, Control Systems, and Machine Component Designs.
* Selected to represent the Digital Engineering cohort in a week-long trip to South Korea to gain knowledge of machine learning algorithms, AI, and Computer Vision.

# RELEVANT PROJECTS AND EXPERIENCE

 **Airframe Team Member – Student Organization for Aerospace Research** *2022-2024*

* **Fabricated and assembled** a hybrid rocket airframe, performing **fiberglass layups** for body tubes, fins, and nose cones to create a reinforced structure that met stringent design constraints.
* **Engineered a testing assembly** from raw materials to assess bond strength of epoxy and fiberglass layups through load testing, demonstrating hands-on construction and fabrication skills.
* Modeled and conducted **CFD analysis** using ANSYS to determine temperature profiles for the rocket's nosecone, informing material selection for effective heat dissipation—a direct application of thermal and fluid dynamics principles.
* Prototyped and refined rocket fin designs using **SOLIDWORKS** and carbon-fiber plates, **collaborating with multidisciplinary teams** (propulsion, avionics, payload) to ensure seamless subsystem integration into the airframe.

**Research and Data Lead – Mechanical Capstone Project** *2023-2024*

* Led the development of a **Modular Lab-Scale Wind Turbine Prototype**, taking ownership of electrical and mechanical analysis.
* Conducted comprehensive **electrical analysis** to determine power consumption and battery requirements, designing a **Wheatstone bridge** for data amplification and real-time sensor feedback.
* Performed detailed **mechanical force analysis** (bending moment, strain, stress) and **fluid dynamic analysis** (drag, tip deflection) to optimize the turbine's structural integrity and performance.

# RELEVANT WORK EXPERIENCE

**TC Energy**, Calgary, Alberta

*Project Coordinator August 2024 – Present*

*Project Execution Intern – Pipeline Reliability Projects May 2022 – September 2023*

* Currently manage and facilitate multiple **pipeline construction and repair projects** in Southern Alberta, overseeing a portfolio of 15+ Project Managers and external construction contractors.
* Review project scopes, prepare and monitor purchases, and draft **Stage Gate presentations**, demonstrating end-to-end involvement in the project lifecycle from planning to execution.
* **Directed Value Engineering initiatives** by drafting and submitting Engineering Variances, Construction RFIs, and Change Directives using **Bluebeam**, resulting in **$200K in cost savings**.
* Assisted in the planning and execution of **30+ Integrity Projects valued at over $100M**, demonstrating experience with large-scale industrial projects.
* Developed and implemented an automated **Power BI data visualization tool** to track the progress of all Canada Gas Pipeline Integrity Projects, **streamlining communication** and providing a single source of truth for all stakeholders.
* **Led a preliminary valve replacement project**, coordinating cross-functional teams and resources with pipeline technicians to ensure successful project completion on a tight timeline

**Multifunctional Engineering, Dynamics, and Automation Lab (MEDAL)**, Calgary, Alberta

*Mechanical Engineering Intern May 2021-August 2021*

* Retrofitted a pellet extruder onto a 3D printer, capable of printing conductive material for the construction of sensors and printed electronics.
* Researched, drafted models, and 3D printed auxetic material lattices to validate and characterize physical properties.

Constructed an amplifier voltage drop circuit to capture real-time changes in resistance of

**SKILLS**

**Technical Skills**

* **Project Management & Design:** SolidWorks, Bluebeam, AutoCAD, Microsoft Project,
* **Programming & Analysis:** Python, MATLAB, LabView, Arduino, Power BI, ANSYS.
* **Fabrication & Prototyping:** 3D Printing, Fiberglass Layups, Epoxy Bonding, Prototyping, Circuit Construction.
* **Tools & Systems:** IFC Drawings, Microsoft Office 365 Suite (Word, Excel, OneDrive, SharePoint).

**Professional & Soft Skills**

* Highly organized and detail-oriented with a proactive approach to problem-solving.
* Proven ability to thrive in fast-paced, dynamic environments while managing multiple tasks.
* Exceptional collaboration and communication skills, with experience leading project meetings and coordinating with diverse stakeholders.