KHUSHEEL BANKIM GANDHI
MECHANICAL ENGINEER
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Innovative and detail-oriented Mechanical Engineer with strong expertise in mechanical design, CAD modeling, and process optimization across automotive, nuclear, and manufacturing sectors. Proficient in thermal and structural analysis, including finite element analysis (FEA), with hands-on experience in developing sustainable and high-performance engineering solutions. Demonstrated ability to work effectively in multidisciplinary teams, contributing to advanced mechanical systems, clean energy initiatives, and net-zero goals. Passionate about solving complex engineering problems through data-driven design, continuous improvement, and cutting-edge technology.

EDUCATION

***Bachelor of Engineering (B.Eng.) in Mechanical Engineering (Co-op)*: Ontario Tech University**
Duration: *January 2021 – April 2025*

SKILLS

Mechanical Design & CAD: Siemens NX, SolidWorks, PTC Creo, AutoCAD, Fusion 360; 3D modeling, assembly design, tolerance stack-up analysis
FEA & Thermal Analysis: ANSYS, Abaqus, Siemens NX, MATLAB, Simulink; static/dynamic simulations, thermal profiling, fatigue and stress analysis
Manufacturing & Production: Sheet metal design, plastic injection molding, die casting, GD&T, Design for Manufacturability and Assembly (DFMA)
Nuclear Systems & Standards: Pressurized Water Reactor (PWR) systems, CANDU reactor familiarity, Telcordia and ETSI compliance
Process & Project Management: SAP ERP, Microsoft Power BI, Excel, Lean Six Sigma, World Class Manufacturing (WCM), workflow optimization
Testing & Validation: Prototyping, first article inspections (FAI), failure mode and effects analysis (FMEA), root cause analysis (RCA)

AWARDS & CERTIFICATIONS

President's List*:* Recognized for academic excellence (GPA 3.8+ on a full course load)
AutoCAD Fusion 360: Seize the moment opportunity certification by brilliant catalyst
Python Programming for Everybody: Coursera certification by University of Michigan
Excel Skills: Coursera certification by Macquarie University

EXPERIENCE

Mathematics Expert for AI Training: *Outlier Inc. (Online, Canada)*
Duration: *September 2024 – March 2025*

- Evaluated AI-generated mathematical content for accuracy, relevance, and clarity across topics like calculus, linear algebra, and probability.
- Created and solved domain-specific math problems to train and fine-tune generative AI models.
- Assessed and ranked AI responses to mathematical prompts based on correctness and instructional quality.
- Provided subject matter feedback to improve model reasoning and guide algorithmic enhancements.

Process Engineer Co-op: *CertainTeed Inc. - Saint-Gobain North America (Ottawa, ON)*
Duration: *June 2023 – August 2024*

- Optimized Preventive Maintenance Operations and Lockout Tagout procedures to enhance equipment reliability.
- Utilized SAP enterprise software to streamline information sourcing and business operations.
- Assisted in troubleshooting and solving issues related to process efficiency, product quality, throughput, and yield.
- Conducted root cause analysis through data compilation and statistical techniques to address atypical events.
- Applied World Class Manufacturing (WCM) tools and Lean Six Sigma methodologies across multiple projects.
- Collaborated with cross-functional teams to implement design improvements and process optimizations.

Peer Tutor (Physics Study Hall): *Ontario Tech University (Oshawa, ON)*
Duration: *September 2022 – April 2023*

- Provided individualized tutoring sessions, enhancing students' understanding of complex physics concepts.
- Conducted assessments to identify academic challenges and tailored strategies for student success.
- Facilitated group discussions to promote critical thinking and collaborative learning.

Merchandising Store Associate: *Walmart Inc. (Oshawa, ON)*
Duration: *January 2022 – April 2023*

- Assisted customers with product selection, pricing inquiries, and processing returns to ensure satisfaction.
- Received, verified, and restocked inventory to maintain accurate stock levels and product availability.
- Organized shelves and executed planograms to support effective visual merchandising strategies.
- Performed regular inventory counts and reported stock discrepancies to minimize shrinkage.

PROJECTS

Capstone Design Project: ***Autonomous Telescope Mount System*** *with Mobile application Integration (**ASTRONOVA**)*
Duration: *September 2024 – April 2025*

- Engineered a modular, motorized equatorial telescope mount with high-precision Right Ascension and Declination axis.
- Designed and analyzed critical components in SolidWorks and ANSYS, including custom Arca Swiss mounts, helical gears, and more.
- Developed a mobile application using Kivy and Flutter, integrating real-time astronomical data for automated celestial tracking.
- Implemented hardware-software integration with Raspberry Pi, TB6600 drivers, and limit switches for autonomous homing, safety, and remote-control operations.
- Conducted structural, thermal, and FEA testing payload, optimizing for manufacturability, environmental resilience, and battery-powered portability.

Academic Project 1: *Design and Development of an **Autonomous Mechanical Walking Rickshaw***
Ontario Tech University

- Designed a mobile mechanical system capable of autonomous obstacle detection and directional control using Arduino.
- Integrated ultrasonic sensors and IR modules for real-time collision avoidance and reactive navigation.
- Modeled chassis and legged mechanism in SolidWorks with emphasis on stability and terrain adaptability.
- Documented the system with engineering reports including design rationale, testing, and control logic.

Academic Project 2: *Design of an **Aircraft Main Landing Gear***
Ontario Tech University

- Engineered landing gear components using SolidWorks, applying Design for X and aerospace design constraints.
- Conducted FEA simulations for static and dynamic loading to validate impact resistance and shock absorption.
- Utilized House of Quality and Pugh matrix for requirement prioritization and design optimization.
- Analyzed cost, weight, and manufacturability trade-offs to support large-scale production feasibility.

Academic Project 3: *Design of a **Race Car Driver Seat***
Ontario Tech University

- Engineered an ergonomic driver seat optimized for biomechanics and safety through detailed patent and market analysis.
- Designed and assembled the seat using Siemens NX, incorporating anthropometric data and comfort constraints.
- Validated the assembly using Design for Assembly (DFA) principles to ensure manufacturability and ease of installation.
- Conducted economic feasibility analysis to demonstrate cost-effectiveness over existing commercial alternatives.