

SURAJ THOKAL

+1(438) 401-1134 ◇ Montreal, QC

thokalsuraj007@gmail.com ◇ [linkedin.com/thokalsuraj007](https://www.linkedin.com/in/thokalsuraj007) ◇ www.surajthokal.site

OBJECTIVE

Mechanical Engineering professional with over 4 years of experience in designing, developing, and managing complex electromechanical systems from concept to production. Proficient in 3D CAD, prototyping, testing, and design optimization for cost, performance, and regulatory compliance. Skilled in cross-functional collaboration and end-to-end project execution. Seeking to leverage technical and leadership skills to drive innovative product development.

SOFTWARE/SKILLS

CAD Software	PTC Creo, CATIA, SolidWorks (CSWP), AutoCAD, Siemens NX, Ansys (FEA/CFD)
PLM/BOM/ERP	Windchill PLM, SolidWorks PDM, ENOVIA PLM, SAP ERP, KBM ERP
Domain Expertise	Die Casting, Sheet Metal Fabrication, Injection Molding, CNC Machining, 3D Printing
Engineering	NPD, DFMA, DFMEA, Continuous improvement (Kaizen), Project Management

EXPERIENCE

Mechanical Engineer, Research and Development	Nov 2024 - Current
Mechanical Designer, Research and Development	Feb 2023 - Nov 2024
ABB Electrification	<i>Montreal, QC</i>

- Designing and developing new Emergency Lighting products (NPD) by conducting feasibility research, evaluating mechanical concepts, creating 3D models, prototyping, performing DFMA and FMEA analyses, followed by rigorous testing and commissioning.
- Managing multiple projects simultaneously, including preparing project plans, material, cost, and time estimates; acting as Project Manager for Nexus Wave-3 project, leading cross-functional coordination to ensure timely completion.
- Developing detailed design specifications, 3D models, and 2D drawings in compliance with GD&T standards for manufacturing components such as sheet metal, castings, and plastic injection-molded parts, while working closely with the purchasing team.
- Defining test objectives, developing procedures, executing tests, and compiling detailed reports to ensure compliance with CSA, UL, and ASTM regulations.
- Conducting component inspections and generating inspection reports (F24) to verify fit, tolerance, and installation, ensuring adherence to design specifications, DFMA guidelines, and regulatory compliance.
- Coordinating product launches in collaboration with production teams, overseeing pilot runs, installation testing, and quality control inspections to ensure smooth production and product integrity.
- Leading mechanical redesign and standardization of customer-special and Buy & Sell projects, as well as implementing cost-saving initiatives for continuous improvement projects.
- Collaborating with cross-functional teams, including Quality, Marketing, Production, and R&D project managers, to ensure design feasibility, resolve mechanical issues, and develop optimal solutions balancing performance, cost, and manufacturability.
- As a PLM Admin, manage and maintain all engineering data within the Windchill PLM (Product Life-cycle Management) system, utilizing 3D parametric modeling software (PTC Creo) to support design and development processes.
- *These duties align with NOC 21301 - Mechanical Engineers, as defined by the Government of Canada*

Mechanical Intern, Research and Development

May 2022 - Feb 2023

ABB Electrification

Montreal, QC

- Designed and developed the cold-weather Edge-Lite Pictogram from concept through to production release, enhancing design efficiency with iterative 3D printing and DFMEA-driven validation.
- Optimized manufacturability of sheet metal, machined, cast, and injection-molded parts, achieving cost reductions through Design for Manufacturability and Assembly (DFMA) practices.
- Defined test objectives, executed validation procedures, and compiled compliance reports, ensuring a high first-pass success rate in CSA/UL testing.
- Performed component inspections (F24 reports), enhancing assembly efficiency through improved fit and tolerance analysis.
- Delivered cost-effective solutions in Continuous Improvement projects, ensuring significant cost savings while maintaining compliance and performance standards.
- Managed engineering change notices (ECNs) and change requests (CRs), streamlining design iteration cycles through efficient PLM documentation.
- Oversaw 3D print iterations, reducing design cycles for faster product development.
- *These duties align with NOC 21301 - Mechanical Engineers, as defined by the Government of Canada*

Mechanical Technician, Service Centre

Mar 2021 - Apr 2022

Chameleon Innovations

Montreal, QC

- Repaired, maintained, and assembled rolling tarp systems and machinery components to ensure optimal performance and safety.
- Fabricated, assembled, and inspected mechanical products and sub-assemblies in compliance with technical specifications and production plans.
- Prepared, cut, drilled, ground, and shaped metal components using mechanical tools and equipment.
- Designed and fabricated jigs, tools, and fixtures to support welding, drilling, and cutting processes, improving efficiency and safety.
- Ensured compliance with workplace safety standards, including CSST regulations, by maintaining work areas, tools, and equipment.
- Performed additional mechanical assembly, installation, and maintenance tasks as required.

Mechanical Team Member

Jan 2021 - Aug 2022

Space Concordia Robotics Division

Montreal, QC

- Involvement in developing the Rover for the university rover competition, in particular contributing to modifying the Rover wheel assembly's design. (Solidwork)
- The motor entirely protected and simple to take apart without removing the entire wheel assembly.

Mechanical Design Trainee

Oct 2019 - Dec 2020

Cad Cam Guru

Pune, India

- Trained in mechanical software including ZW CAD+, AutoCAD, CATIA, PTC Creo, SolidWorks, and Ansys, with a focus on industry-specific domain expertise.
- Hands-on involvement in real-time projects, including 3D modeling, drafting, and GDandT for Automotive components, Die and cope, Compressor casing, Jig and fixtures, and plastic components.
- CAD projects- Swing Casting, 'Saniring- The ring Sanitizer' and 'Multifunctional School Bag'

EDUCATION

Master of Mechanical Engineering, Concordia University, Montreal, QC 2021 - 2023
Relevant Coursework: Industrial Design, Aerodynamics, Turbo-Propulsion, Aircraft Hydro-Mech Systems, HVAC.

- CAMD Project: Modeled, assembled, and simulated the "Helicopter Rotor System". (CATIA V5)
- Tribology Project: Designed shark skin-inspired coating to reduce drag on maritime vessels.
- Graduate Seminar: Designed and analyzed a whale fin-inspired turbine blade. (Solidworks, Ansys CFD)

Bachelor of Mechanical Engineering, SPPU, Pune University, India 2013 - 2017
Relevant Coursework: Mechanical System Design, Hydraulics-Pneumatics, Fluid Mechanics, Manufacturing processes, Mechatronics, Industrial Automation, Thermodynamics, FEA.

- Top student in a class of 400
- Bachelor's Project: Development of a Multipurpose Agricultural Equipment for small-field farmers, involving design, analysis, fabrication and Publication in IJSER, Vol8, Issue4, Apr2017, ISSN 2229-5518.

CERTIFICATIONS

Dassault Systèmes Certified SOLIDWORKS Professional (CSWP)- Mechanical Design, Issued May 20, 2024

ABB Creo Windchill PLM Certified **P-Admin**, Issued April 2025

Udemy 1. Mechanical design and product development process, Issued Jan 2024, 2. Design failure mode effect analysis, Issued Oct 2023, 3. 3D Printing fundamentals, Issued May 2023

EXTRA CURRICULAR ACTIVITIES

- Passionate about Nature-inspired (biomimicry) innovations and exploring their application in real-world engineering problems.
- Write technical blogs published on LinkedIn and personal website.