Neelay Jain

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SUMMARY

Mechanical Engineering undergraduate with a Minor in Computational Data Science, skilled in CAD, FEA, and DFM with aerospace and defense applications. Experienced in applying ML to engineering projects (F1 race prediction, airfoil noise modeling, condition monitoring). Served as President of I-MECH, PDEU, leading technical initiatives and outreach. Passionate about integrating mechanical engineering with computational methods to develop practical, data-driven solutions.

EDUCATION

2023 – Present	**Pandit Deendayal Energy University (PDEU)**, Gandhinagar
	B.Tech in Mechanical Engineering
	Minor in Computational Data Science (CGPA: 9.53/10)

RESEARCH & WORK EXPERIENCE

Research Paper: Condition Monitoring of Ball Bearings using AI   ICRAM 2025, IITRAM

Developed an AI-based condition monitoring model for ball bearings using thermal imaging, applying Convolutional Neural Networks (CNNs) for fault detection and classification, and achieving 99.83% accuracy in a real-world case study.

Production Engineering Intern — Larsen & Toubro – Precision Engineering & Systems IC, Hazira
May – Jul 2025

Validated a 450 MT lifting fixture and Designed and Validate a 24 MT deck fixture with a safety factor greater than 1.5 using Siemens NX FEA and Siemens Solid Edge. Applied Design for Manufacturability (DFM) principles to enhance weld accessibility, modularity, and shop-floor integration. Additionally, prepared CAD models, GD&T-compliant drawings, and bills of materials (BOMs), while collaborating with engineers to ensure successful real-world implementation.

PROJECTS

GSLV MkIII Launch Vehicle Simulation (MATLAB)   GitHub
Modeled trajectory of 3-stage launch vehicle (S200, L110, CE-20), analyzing thrust, drag, and gravity effects.

Formula 1 Driver Position Predictor (Python, Streamlit)   GitHub
Built ML model to predict finishing positions in F1 races using historical data; deployed via Streamlit.

Airfoil Noise Prediction (Python, ML)   GitHub
Applied regression models on aerodynamic datasets to predict noise levels for different airfoil profiles.

Bracket FEA (ANSYS Workbench)   GitHub
Designed and analyzed a bracket under static loading conditions to evaluate stress distribution and deformation.

LEADERSHIP & EXTRACURRICULARS

President — I-MECH, PDEU   Aug 2023 – Present
Led a team to organize technical events and workshops, revamping initiatives to boost student participation. Coordinated with faculty and industry experts to enhance learning opportunities.

Executive Director — Mech-A-Tech Newsletter, PDEU   Jan 2023 – Present
Managed newsletter content creation and publication, ensuring technical accuracy and timely dissemination.

SKILLS

Software/Tools	SolidWorks, Siemens NX, Solid Edge, ANSYS Workbench, MATLAB, Python, Simulink, Canva
Core Competencies	CAD Modelling, FEA, DFM, GD&T, ML Applications in Engineering, Condition Monitoring
Soft Skills	Leadership, Problem-Solving, Teamwork, Communication