



Anas Usmani

Bachelor of Technology
Mechanical Engineering
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🌐 LinkedIn Profile

🐙 GitHub Profile

EDUCATION

Degree/Certificate	Institute/Board	CGPA/Percentage	Year
B.Tech.	Indian Institute of Technology, Jodhpur	6.61	2025
Senior Secondary	ISC Board	87.6%	2020
Secondary	Jawahar Navodaya Vidyalaya Moradabad / CBSE Board	97.6%	2018

EXPERIENCE

- Data Science And Analytics, City Gas Distribution** May 2024 - Jul 2024
Summer Internship / SANMARG Projects Pvt. Ltd. Jodhpur / Github
 - Worked on a live project involving **CITY GAS DISTRIBUTION** across Jodhpur, gaining hands-on experience in pipeline inspection, instrumentation, and fault diagnostics.
 - Performed **field inspections** across multiple pipeline installations and customer sites, identifying **equipment faults** and helping reduce leak-related losses.
 - Utilized a custom mobile application for systematic data capture across **domestic, commercial, and industrial** connections, increasing data accuracy by 30%.
 - Developed insightful **data visualizations** and reported key patterns and trends to project supervisors for optimization of resource deployment.
 - Received recognition for excellent performance and proactive learning approach during training on **gas infrastructure, safety protocols**, and fault diagnostics.

PROJECTS

- Adaptive Intelligent Control Of Rigid Flexible Robotic System** Sep 2024 - Nov 2024
BTech Project - MATLAB/SIMULINK / Mentor: Dr. Barun Pratiher Github
 - Designed and implemented a Lyapunov-based adaptive control law for a 2R robotic manipulator with rigid-flexible links to ensure stability and precise trajectory tracking.
 - Derived dynamic equations using Euler-Lagrange methods and modeled the system in **MATLAB/Simulink** for performance analysis under varying payload conditions.
 - Demonstrated effective error reduction to near-zero and stability of the control system through simulation, showcasing its adaptability to real-time uncertainties.
- Hydraulic Cylinder Design and Analysis** Sep 2023 - Dec 2023
Course Project - Solidwork / Mentor: Dr. Hirshikesh Github
 - Designed and analyzed a hydraulic cylinder in **SOLIDWORKS**, focusing on material selection, stress calculations, and practical applications, to understand and optimize cylinder performance.
 - Conducted stress analysis and safety checks for various components, using performance indices to select materials that balance strength, weight, and cost effectively.
- CFD Modeling of Thermal Conductivity in Composite Materials** Jan 2024 - Apr 2024
Course Project - Ansys / Mentor: Dr. Sudipto Mukhopadhyay Github
 - Analyzed temperature profiles and effective thermal conductivity in porous media with varying porosity using **Ansys** software, adjusting model parameters for accurate results.
 - Created a robust automation solution with **IronPython** in Spaceclaim, streamlining the simulation workflow, automating meshing and Fluent processes, and delivering high-quality results.
 - Developed a deep learning model (**ANN**) to predict the effective thermal conductivity of porous media with 99% accuracy, using features like porosity, temperature difference, density, length, and specific heat capacity.

TECHNICAL SKILLS AND INTERESTS

Languages : Python, C, C++, HTML, CSS, JavaScript, MATLAB
Design Tools : AutoCAD, Solidwork, Abaqus, Ansys, Revit, CATIA
Cloud/Databases : MySQL, MongoDB
Data Visualization : NumPy, Pandas, Matplotlib, Seaborn, Power BI
Soft Skills : Problem-Solving, Team collaboration, Listening Skills, Time Management

KEY COURSES TAKEN

Tech Courses : Introduction to Computer Science, Machine Learning, Data Structure and Algorithm
Core Courses : Heat Transfer, I.C. Engines, Thermodynamic, Design of Machine Element, Thermofluid Engineering, Introduction to Robotics, Finite Element Methods, Computer-Aided Design (CAD)

ACHIEVEMENTS

- IIT-JEE 21** Qualified in Top **1.7%** among 1 million JEE aspirants 2021
- Assisted 1000+ students in grasping challenging Chemistry concept on the Chegg platform

ACTIVITIES

- Assitant Head in Varchas(sports event),IITJ
- Member of Volleyball Society, IITJ
- Participate in kridansh(sports event) Organising Team