WAQUAR ALAM

Aligarh, UP
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EDUCATION

Aligarh Muslim University **2022 – Present**
B.Tech - Mechanical Engineering - ***CGPA - 8.75*** *Aligarh, India*

Aligarh Muslim University (University Polytechnic) **May 2019 – Mar 2022**
Diploma in Mechanical Engineering - ***88.7%(2nd Rank Holder)*** *Aligarh, India*

Cambridge Public School (CBSE) **May 2017 – Mar 2018**
Class X - ***77%*** *Patna, India*

EXPERIENCE

Research Intern, RISE-UP **May 2024 – July 2024**
Indian Institute of Technology (IIT) Jammu *India*

- Conducted simulation-based energy analysis on **Net Zero Energy Buildings (NZEBs)** with a focus on passive solar design strategies for Army Shelters.
- Modeled and evaluated **Trombe Wall**-integrated shelters using **eQUEST** and **SketchUp** to assess thermal performance and CO emission reductions.
- Optimized energy efficiency by integrating solar PV systems and air-to-water heat pumps, achieving up to **27%** annual energy savings.
- Generated detailed reports, load calculations, and visual analyses to support sustainable design for remote army shelters in the **Leh-Ladakh region**.

ONGC MBA Basin, Kolkata & ONGC Academy,Dehradun **June 2023 – Aug 2023**
Mechanical Engineering Intern *India*

- Hands-on experience in drilling processes and equipment, including mud systems and well casing.
- Studied real-time data collection and interpretation during well operations.
- Worked on well simulation and mechanical systems under expert supervision.
- Explored sustainable technologies in energy extraction and mechanical design.

PROJECTS

3D Printing Advances **Nov 2021 – Sep 2022**
Team Lead, Polytechnic AMU *Aligarh, India*

- Led a team researching advances in 3D printing technologies, materials, and sustainable manufacturing.
- Explored the role of 3D printing in addressing supply chain challenges during the COVID-19 pandemic.
- Utilized tools like **AutoCAD** and **SolidWorks** for designing and modeling prototypes.

Solar Bottle Bulb with Brightness Controller **Jan 2024 – Mar 2024**
Individual Project *Aligarh*

- Developed an innovative lighting solution using solar energy to provide eco-friendly illumination for off-grid and underdeveloped areas.
- Integrated a brightness control mechanism to regulate light intensity based on ambient conditions and user needs, optimizing energy usage.
- Demonstrated potential for improving the quality of life in underserved communities through sustainable and affordable technology.

Chapter Contributions (Under Publication)

Book Title: Digital Manufacturing: Processes & Application

Book Series: Advances in Production Engineering

Chapter Title: *The Emerging Frontiers in Materials for Functional Three-Dimensional Printing*

This chapter presents an in-depth study on material innovations and their role in advancing additive manufacturing technologies.

Book Title: SMART & SUSTAINABLE MANUFACTURING

Book Series: Advances in Production Engineering, Scrivener–Wiley Publishing

Chapter Title: *Enhancing Sustainability in Machining Using Cryogenic Cooling Strategies*

This work emphasizes sustainable machining practices through cryogenic techniques to minimize environmental impact while maintaining manufacturing efficiency.

Leadership & Activities

ASHRAE AMU Student Branch **Sept 2024 – Present**
Social Media Coordinator *Aligarh, India*

- Led social outreach, branding, and online engagement initiatives for the ASHRAE AMU Chapter.
- Coordinated chapter meetings, technical seminars, and university-wide outreach events.

Swimming Captain – AMU **Dec 2024 – Present**
Team Lead *Aligarh, India*

- Led the university swimming team during practice sessions and represented AMU in inter-college competitions.

Aspire Leaders Program **2024 – 2025**
Harvard Business School Online – Leadership and Soft Skills Training *Remote*

Certifications

Mahindra Pride Classroom – Employability Skills Program, 2021

Excel Mastery: Basic to Advanced – Centre for Career Guidance & Development (CEC), AMU, 2023

Skills

Tools: AutoCAD, SolidWorks, ANSYS, MS Office

Languages: English, Hindi, Urdu, Arabic

Soft Skills: Communication, Teamwork, Research, Adaptability