



# Muhammad Rayyan Usmani

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## SUMMARY

Dedicated Mechanical Engineering student with a passion for innovation and problem-solving, possessing a strong academic background and hands-on experience in engineering projects. Eager to contribute knowledge and skills to dynamic environments, with a focus on continuous learning and professional growth. I have demonstrated ability in executing engineering projects, including Green Electricity for University Campus, and possess strong analytical skills and a collaborative mindset to contribute effectively to team-based initiatives.

## KEY SKILLS

HVAC Systems

Power Generation

Beverage Manufacturing

Analytical skills

Critical thinking

Creativity & Innovation

Strong interpersonal skills

Project Management

Excellent communication skills

## PROFESSIONAL EXPERIENCE



**Attock Petroleum Limited**

**July 2024 - Aug 2024 (6 Weeks)**

**Intern**

As an intern I gained hands-on experience in site surveys, engineering drawings, and regulatory compliance. I assisted in preparing CAD layouts for fuel stations, reviewed technical documentation, and collaborated with senior engineers to understand the infrastructure and technical requirements. I also contributed to ensuring adherence to safety and regulatory standards, including equipment specifications.



**Artistic Milliners**

**June 2024 - June 2024 (4 Weeks)**

**Intern**

As an intern at Artistic Milliners in the Mechanical System & Maintenance Department, I gained hands-on experience with power generation, boiler operations, and HVAC systems. I analyzed energy sources, maintained boiler systems, and ensured optimal temperature and air quality, contributing to efficient factory operations.



**Pakistan Beverage Limited (Pepsi Co)**

**June 2023 - June 2023 (4 Weeks)**

**Intern**

As an intern at PBL my responsibilities included assisting in maintenance, troubleshooting, and optimization of production equipment and contributing to improving efficiency and reliability of machinery. I developed valuable skills and knowledge in operations, specifically within the beverage industry.

## EDUCATION



**National University of Sciences and Technology (NUST)**

Bachelor of Engineering - BE, Mechanical Engineering

2021 - 2025

CGPA: 3.39 / 4.00



**Highbrow College**

A levels, Engineering

2019 - 2021

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## PROJECTS

- **Green Campus: Biogas Digester and SOFC Integration for Sustainable Energy Solutions**

Led Simulink modeling project for a system utilizing cow dung in a biogas digester. Extracted methane powered a Solid Oxide Fuel Cell (SOFC). Incorporated heat recovery system from SOFC exhaust to air in a Brayton cycle, enhancing energy efficiency and electricity generation.

- **Line Following Robot with Integrated Fire Extinguishing Mechanism**

Designed and built a line-following robot equipped with a fire extinguishing mechanism. The robot autonomously followed a predetermined path using sensor technology and activated an integrated fan to extinguish fires detected along the route. The project involved programming microcontrollers and integrating sensors to ensure reliable operation.