



# Hasan Ahmed

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📍 Flat no. 23, Sumaira Arcade Block N, North Nazimabad, Karachi, 74600

## Personality Summary

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A young, curious well organized professional with creative, problem-solving, sustainable, and growth mindset. Love to work in a team, with enthusiasm. Fast learner who is always up for new challenges and wants to make this world a sustainable place.

## Education

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**Master of Mechatronics Engineering, NED UET** ✓ 05/2022 – present  
Karachi, Pakistan  
**Grade:** 3.85 out of 4.0

**Course Work:** Sensors and Actuators | Artificial Intelligence | Machine Vision | Machine Learning | Industrial Automation

**Bachelor of Mechanical Engineering, NED UET** ✓ 11/2017 – 11/2021  
Karachi, Pakistan  
**Grade:** 3.514 out of 4.0

**Course work:** CAD Modelling | Additive Manufacturing | Machine Design | Aerodynamics | Entrepreneurship

## Professional Experience

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**Full Time - Research Assistant, Neurocomputation Lab - NCAI, NED UET** ✓ 02/2022 – present  
Karachi, Pakistan

- Designed and Fabricated Power trains for Electric motorbikes, including motor housing & support assembly, battery & battery housing assembly, speedometer casing for Electric vehicles (E- Motor Bike), and modules for the cells of batteries.
- Used 3-D printer for rapid prototyping of Battery modules and collaborated with electrical and electronics team to design and print the casing of different electronic items.
- Optimization of Casing design for reduced cost, material and weight.
- Testing of 3 bikes manufactured is underway.
- Designing the fairings of Gen 2 Motor bike to reduce the drag and increase efficiency.

**Career-Prep Fellow, AMAL ACADEMY** ✓ 03/2021 – 06/2021  
Lahore, Pakistan

Communication: Completed a competitive interview and group discussion process to be selected from over 6000+ applicants for an intensive 3-month Fellowship funded by Stanford University

Skills development: Invested 150 hours in order to develop business skills (e.g., communication, leadership, problem-solving, teamwork, etc.) that will help me make a deeper impact on the job.

**Mechanical Engineering Intern, PAKISTAN AERONAUTICAL COMPLEX KAMRA (PAC-Kamra)** 08/2019 – 08/2019  
Kamra, Pakistan

### Technical Knowledge:

Analyzed the working of following

- Different machining processes including CNC (3 & 5 axis), Lathe, milling & grinding.
- Surface Treatment processes including electroplating of different materials
- Effluent treatment plant to process and recycle the waste water.
- Heat Treatment processes and plasma coating machine
- Testing machines including CMM.
- Fighter engine maintenance department and overhauling.
- Observed the Scada system in action installed at different processes.
- Others included boilers, compressors and tool store.

**Mechanical Engineering Intern, PAKISTAN CIVIL AVIATION AUTHORITY (CAA)**  
Technical Knowledge: Analyzed the operations and working mechanism of following:

05/2019 – 06/2019  
Karachi, Pakistan

- Firefighting system of the airport.
- HVAC plant which cools the JIAP building.
- Water works department which is responsible to fulfill water requirements of fire department and other buildings in the premises of the airport.
- Electro-Mechanical systems including Elevator, Escalator, Baggage Handling System, and Passenger Boarding Bridge
- Made a complete report of the NFPA standards for the Fire Fighting department of JIAP

## Projects

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### **GREEN BUILDING FOR ENERGY MANAGEMENT, CONSERVATION AND SUSTAINABILITY, Final Year Project**

11/2000 – 11/2021

#### **Research:**

- a. Literature review on the concept of Green Building, its criteria and standards.
- b. Designed a grey water treatment system of a building.
- c. Conducted a market survey for efficient taps and did feasibility analysis of the taps and payback period.
- d. Designed an RO plant and applied knowledge of Operations Management for its successful operation.
- e. Conducted FMEA and FTA of RO plant and made its maintenance plan.
- f. Designed a PV-system on PV-Syst. and calculated the number of panels required to fulfill the energy requirements of an educational institution.

**Technical Aspects and Calculations:** Water Testing, Water Consumption, Recycling, Selection of RO plant membrane on IMS design.

### **ENGINE DRIVEN RC PLANE FOR PROPEL-AIR COMPETITION,**

01/2019 – 07/2019

*Propell-Air Competition (Runner-ups)*

- **Literature Review:** Analyzed all sorts of Knowledge about aircraft and aviation from design to aerodynamics.
- **Teamwork:** Coordinated with a team of 6 and designed an incredible High winger, tractor type tail dragger RC plane.
- **Designing and Fabrication:** Designed on Solid Works simulation on ANSYS, Coral Draw software and used balsa and plywood for fabrication mostly laser cut.

### **BOOK BINDERS FOR LITTLE MINDS, Entrepreneurship Project (MG-481)**

04/2021 – 10/2021

**Survey and Plan:** Conducted an online public survey and planned the business model.

**Teamwork:** Lead a team of 5 members and successfully did a business of Rs.95,000

**Achievement:** Given a title of "Best Project Presentation" by the course instructor.

### **DESIGN AND ANALYSIS OF IMPELLER AND DIFFUSER-RING ASSEMBLY,**

12/2019 – 01/2020

*Fluid Mechanics (ME-314)*

**Problem Solving and Teamwork:** Co-ordinated with a team of 4 individuals to solve the engineering problem.


**Designing and Simulation:** Used various tools from Solid Works 2017 and ANSYS 2016 for designing and simulation of the pump

## Skills

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**Technical Skills with Certifications** (Python Language for Beginners (University of Michigan) ANSYS CFD and FEA (ANSYS Academy) PLC Programming & HMI from Scratch (Udemy))

**Software and Soft skills** (SolidWorks, AutoCAD and Coral Draw ANSYS MATLAB and Simulink MS office (Word, Excel, PowerPoint) Adobe Photoshop and Illustrator Python IMS Design PV-Syst)

  
11/11/22

Signature with Date