

ENGR. SANA KHALIL

Mechatronics Engineer

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📍 *Hyderabad, Sindh*

Mechatronics Engineer with expertise in Production and Manufacturing processes, SOLIDWORKS 3D Design, and PLC-based automation systems. Skilled in implementing Lean manufacturing and Six Sigma methodologies to improve efficiency and reduce waste. Experienced in leading workshops, mentoring students, and managing technical projects from design to execution. Passionate about personal branding, leading with impact, and creating opportunities for others through teamwork and innovation. Actively looking for opportunities to grow in a professional environment where I can contribute, learn, and lead.

Experience

Power System Intern at National Transmission and Despatch Company Limited (NTDC) [Link](#)

Dec 2022- Jan 2023

National Transmission and Despatch Company (NTDC) links power generation units with load centers and owns all 220 kV and 500 kV grid stations and transmission lines in Pakistan.

- Studied the transmission of electrical power across various regions of the country.
- Analyzed Single Line Diagrams (SLDs) representing different grid configurations.
- Investigated the operation and specifications of over 20 pieces of equipment, including autotransformers, circuit breakers, and control panels.

President at Mechatronics Society of Robotics and Automation (MSRA) [Link](#)

Dec 2023- Dec 2024

Mechatronics Society of Robotics and Automation, an esteemed student organization dedicated to the exploration and advancement of Mechatronics, within the Department of Mechatronics Engineering at Mehran UET Jamshoro.

- Managed 8 workshops and seminars organized by MSRA, attended by over 500 participants.
- Coordinated 5 tech-focused initiatives, connecting 10+ industry experts with undergraduate students.
- Maintained detailed activity and financial reports, managing a budget of PKR 50,000.
- Assisted in the recruitment process by interviewing 30 candidates for society positions.

Ambassador at Islamabad SOLIDWORKS User Group (ISUG) [Link](#)

Dec 2024 - April 2025

ISUG is the first and only officially registered SOLIDWORKS user group in Pakistan and is registered under the SWUG Network (SWUGN). This global network connects SOLIDWORKS users from all over the world and is being operated by Dassault Systemes.

- Organized 1 SOLIDWORKS workshop and 1 International SOLIDWORKS BOOTCAMP, engaging over 1500 students.
- Hosted a SOLIDWORKS Quiz Competition with participants from top engineering universities.
- Expanded ISUG's presence by reaching up to 500 individuals through social media campaigns and campus events.
- Mentored 20+ students in CAD, engineering design, and SOLIDWORKS skills.

Manufacturing/Production Intern at Dawlance United Refrigeration Industries Limited [Link](#)

June 2025

Dawlance's manufacturing plant in Hyderabad is officially named United Refrigeration Industries Limited (URIL). It is a key part of the Dawlance Group of Companies and specializes in the production of refrigerators.

- Analyzed injection molding machines and defects in 30 injection-molded (ABS, PP, PS) parts; identified short shots and flash
- Monitored thermoforming, sheet rolling, and extrusion of 50 PVC gasket profiles.
- Assisted in 4 sheet metal ops. (notching, piercing, flanging, embossing) on PSM, GI, and VCM during cabinet fabrication.
- Supported PU foaming for doors/cabinets using iso-polyol and cyclopentane; observed pre-foaming and final assembly.
- Inspected finished units per SOPs; observed Lean Manufacturing and Six Sigma principles in real-time production.

Education

Mehran University of engineering and Technology Jamshoro [Link](#)

- Completed Bachelor of Engineering (Mechatronics) with 2nd Position, achieving CGPA: 3.60 / 4.00 (90%) in 2025.

Skills

Soft Skills & Technical Skills

- Leadership skills, Personal Branding & Team Building
- Experience in managing budgets and handling financial documents
- SOLIDWORKS 3D Modeling and Simulation
- Basics of PLC and Industrial Automation
- Lean and Six Sigma
- Machine Design and Manufacturing Processes

Certifications

- Six Sigma, White Belt [Link](#)
- Introduction to PLC and Industrial Automation [Link](#)
- PLC: Industrial Sensors [Link](#)
- Learning PLC Ladder Logic: 1 The Basics [Link](#)
- Rapid Prototyping for Product Design [Link](#)
- N×L Season 3 Certification from Nestlé and L'Oréal [Link](#)
- Internet of things Course Certification From NAVTTC [Link](#)

Achievements

- Designed and fabricated an **Autonomous Product-Transport Robot for Industrial Applications** using SolidWorks, 3D printing, CNC machining and Laser cutting. [Link](#)
- Integrated ESP32, Mecanum wheels, motor drivers, and RP-LIDAR C1 for precise motion, mapping, and navigation. [Link](#)
- Implemented IoT-based WiFi control and validated performance with real-world testing and vibration-based predictive maintenance. [Link](#)

- Founder and President of SOLIDWORKS Club MUET [Link](#)
- Top 10% Global Talent in Gamified assessment solutions for talent recruitment [Link](#)
- Author of a Weekly LinkedIn Newsletter: Successfully built an engaged audience of 1000+ Subscribers [Link](#)
- Received Merit-Based Scholarship for B.E. Mechatronics at Mehran University Jamshoro.
- 2nd Position Holder in BE Mechatronics with CGPA 3.60 (90%). [link](#)