Atam Kumar Menghwar
BE & ME Industrial and Management Engineer
Address: Via Alberto Sivinio, Maisonettes, 87036, Rende, Italy
Phone No.: (+39) - 345 - 8416230
E-mail: atamkumar2018@gmail.com

in LinkedIn
: GitHub
Google Scholar
ResearchGate

PROFILE

- I am an Industrial and Management Engineer with a strong foundation in manufacturing systems, quality management, and digital transformation. Currently completing dual Master's degrees in Engineering Management and Innovation & Product Management, I bring a blend of academic depth and applied experience. I aim to contribute to advanced research in smart manufacturing and future-ready industrial systems.

EDUCATION

- **M.S. Engineering Sciences**
Management Engineering
Università della Calabria
https://www.unical.it/
  10/2023 - Present
  Rende (CS), Italy
  Grade: 99/110

- **M.S. Engineering Sciences**
Innovation and Product Management (Dual Master's)
University of Applied Sciences Upper Austria
https://fh-ooe.at/en
  09/2024 - 09/2025
  Wels, Austria
  Grade: 1.81 (Austrian Grading System)

- **B.S. Engineering Sciences**
Industrial Engineering and Management
Mehran University of Engineering & Technology (MUET)
https://www.muet.edu.pk/
  10/2018 - 11/2022
  Jamshoro, Pakistan
  CGPA: 3.76/4.00

TECHNICAL SKILLS

- **Programming and Scripting Languages**
C++, Python (Basic) | MATLAB/SIMULINK (Basic) | JavaScript (Node-RED) [Basics]

- **Tools and Libraries**
Minitab (Statistical Analysis) | Data Science Tools | Data Collection | Data Processing | Data Visualisation | Research Tools

- **OS and Software**
MS Office (Word, Excel, PowerPoint, Outlook, Teams, Project, SharePoint) | Tecnomatix Plant Simulation (Basics), Technical Writing

RESEARCH INTEREST

Smart/Digital Manufacturing | Sustainable Manufacturing | Digital Twin | Cyber-Physical Systems | Artificial Intelligence | Machine Learning | Smart Healthcare | Digital Transformation | Industry 4.0/5.0 | Digital Supply Chain Management

SHORT COURSES

21/03/2022 – 20/09/2022	**Inspection & Quality Control (Job-Oriented Training, 6 Months)**	
	Mehran University of Engineering & Technology (MUET), BBSHRRDB	Jamshoro, Pakistan
06/2021 – 09/2021	**Project Management (NAVTTC – PM Hunarmand Pakistan Program, 3 Months)**	
	The Institute of Management & Entrepreneurship (TIME), Hyderabad	Hyderabad, Pakistan
02/2021 – 05/2021	**E-Commerce Management (DigiSkills.pk), 3 Months**	
	Virtual University of Pakistan (V-U)	Online, Pakistan

02/2021 – 05/2021	**Creative Writing (DigiSkills.pk), 3 Months** *Virtual University of Pakistan (V-U)*	Online, Pakistan
11/2019 – 01/2020	**AutoCAD (DigiSkills.pk), 3 Months** *Virtual University of Pakistan (V-U)*	Online, Pakistan
11/2019 – 01/2020	**Freelancing (DigiSkills.pk), 3 Months** *Virtual University of Pakistan (V-U)*	Online, Pakistan

PROJECTS

01/2022 – 10/2022   **Analysis of Risk Factors for Work-related Musculoskeletal Disorders: A Survey Research**
Bachelor's Degree Thesis

- Conducted a quantitative study to analyze the prevalence and risk factors of work-related musculoskeletal disorders (WMSDs) across industrial, educational, and healthcare settings.
- Collected data through a structured online survey and performed statistical analyses including correlations and ANOVA.
- Developed a regression-based model and proposed ergonomic recommendations to reduce WMSD risks.

01/2025 – 09/2025   **A Causal Digital Twin Framework for Sustainable Decision Making in Smart Manufacturing Systems**
Master's Degree Thesis

- Developed a four-layer Causal Digital Twin Framework integrating real-time data, AI-based predictions, and causal inference to support sustainable decision-making in smart manufacturing.
- Implemented real-time energy monitoring using TimescaleDB and Grafana, and applied XGBoost for Remaining Useful Life (RUL) prediction alongside causal inference to identify key drivers of energy optimization.
- Performed rigorous statistical validation including OLS regression, residual diagnostics, VIF analysis, Durbin–Watson testing, and HAC corrections, proposing a scalable sustainability-aligned framework supporting Industry 4.0 and SDG 9.

OTHER CERTIFICATIONS, WORKSHOPS & WEBINARS

01/11/2021	**Six Sigma Yellow Belt Certification** *6SigmaStudy / VMEdu Inc.*	United States (Online)
09/02/2020	**Workshop on Peace, Tolerance & Emotional Intelligence** *Rotaract Club of Jamshoro Optimists*	Jamshoro, Pakistan
12/02/2021 – 14/02/2021	**Online Workshop on Industrial Automation & Industrial IoT** *NCRA CMS Lab, MUET*	Jamshoro, Pakistan (Virtual)
06/07/2021	**Data Science with Machine Learning – A Journey from Data to Decision** *IEEE KIET Student Branch*	Karachi, Pakistan (Virtual)
26/11/2021	**Industry–Academia Dialogue Forum on Industry 4.0** *IEEE MUET & IEEE Karachi Section*	Jamshoro, Pakistan
12/06/2021	**Toyota 5S Methodology** *Toyota Indus Motor Co. Ltd. & United Nations Association of Pakistan*	Karachi, Pakistan (Virtual)
11/07/2021	**Leading My Student Branch to Success** *IEEE UCET IUB & IEEE MNSUAM, supported by IEEE R10*	Pakistan (Virtual Panel Discussion)
19/06/2021	**Industrial Automation Webinar** *IEEE KIET Student Branch*	Karachi, Pakistan (Virtual)
23/06/2020	**Frontend Fundamentals** *Pirple.com*	United States (Online Course)

13/11/2021	**How 5G Is Much More Than the Next G** *Engineer Talks*	Pakistan (Virtual)
07/2021	**Behavioural Interview Questions** *Great Learning Academy*	Online Course
2021	**The Field of Supply Chain Calling Engineers** *The Incredibles & ZIMCO International Corporation*	Pakistan (Virtual Webinar)
13/12/2021	**Career Counselling and Future Scope for Engineering** *The Incredibles & HITEC University*	Pakistan (Virtual)
18/12/2021	**Introduction to Scientific Research and Publication Process** *Engineer Talks*	Pakistan (Virtual)
2021	**How to Bridge the Gap Between Industry & Academia** *The Incredibles & ZIMCO International Corporation*	Pakistan (Virtual Webinar)
21/09/2022	**Spark Up Your Career (Career Event)** *ISO & EC Societies, Mehran UET Jamshoro*	Jamshoro, Pakistan

JOBS AND INTERNSHIPS

29/12/2021 – 20/01/2022   **Artistic Milliners Pvt. Ltd.**
Intern – Industrial Engineering Department   Karachi, Pakistan

- Assisted in production line optimization through line balancing, capacity analysis, SAM evaluation, and ergonomics improvements.
- Applied lean manufacturing tools (KPIs, Kanban, 5S) and waste-reduction techniques to enhance operational efficiency.

08/06/2022 – 07/07/2022   **Yunus Textile Mills Ltd.**
Intern – Industrial Engineering Department   Karachi, Pakistan

- Assisted in production line optimization through line balancing, capacity analysis, SAM evaluation, and ergonomics improvements.
- Applied lean manufacturing tools (KPIs, Kanban, 5S) and waste-reduction techniques to enhance operational efficiency.

07/2021 - 08/2021   **District Administration Hyderabad & TIME Institute**
Data Entry Operator   Hyderabad, Pakistan

- Worked at the COVID-19 Data Management Centre.
- Performed data entry and record management tasks.

09/2022 – 10/2022   **Quality Enhancement Cell (QEC), MUET**   Jamshoro, Pakistan
Intern

- Contributed to quality assurance activities, assisted in ensuring institutional quality compliance by reviewing academic and administrative departments while gaining thorough knowledge of university policies and operations.

02/2023 – 08/2023   **Army Public School & College (APSAC), Badin Cantt**   Badin, Pakistan
Instructor – Mathematics (Middle Section)

- Taught Mathematics to middle-grade students.
- Performed assigned academic duties efficiently.
- Demonstrated strong engagement and effective knowledge delivery.

| 01/08/2022 – 02/2023 | **Brimful Talented Academy, Hyderabad** | Hyderabad, Pakistan |

Instructor – Science (Senior Section, Grade 9 and 10th)

- Taught chemistry and physics subjects.
- Maintained professionalism and positive student engagement.

| 28/02/2022 – 10/03/2022 | **Jamshoro Power Company Ltd. (GENCO-II)** | Jamshoro, Pakistan |

Industrial and Management Engineer – Intern

- Observed power plant operations and studied key mechanical, electrical, and control systems, gaining comprehensive insight into generation, transmission, and energy utilization processes.

| 19/12/2021 – 20/01/2022 | **Mindstorm Engineering – IIoT / Industry 4.0 Virtual Internship** | Karachi, Pakistan |

Intern – IIoT & Industry 4.0

- Virtually work with PLC, HMI, SCADA and IIoT-enabled PLCs.
- Worked with MQTT Brokers, Node-Red, M2M, and Python programming.
- Gained experience using cloud platforms and basics of AI.
- Completed practical activities and assessments with strong performance.

EXTRACURRICULAR ACTIVITIES

| 09/2020 – 01/2023 | **Founder and Vice President [Engineers Corner — Local Society]** |
MUET Jamshoro, Sindh, Pakistan

| 09/2020 – 04/2022 | **Coordinator of Volunteers (Student Organization)** |
MUET Jamshoro, Sindh, Pakistan

| 2017 – 2023 | **Volunteer and Supervisor (Local Youth Forum)** |
Village (Tharparkar, Sindh, Pakistan)

| 08/2021 – 12/2022 | **Supervisor (Engineering Testing Service)** |
Hyderabad, Sindh, Pakistan

LANGUAGE SKILLS

	Listening	Reading	Writing	Spoken Production	Spoken Interaction
English (Professional Proficiency)	C1	B2	C1	C1	C1
Italian (Basic User)	A2	A2	A2	A1–A2	A1–A2

Levels based on the CEFR: A1/A2 = Basic user · B1/B2 = Independent user · C1/C2 = Proficient user

RESEARCH PUBLICATIONS

2026 Francesco Longo, **Atam Kumar Menghwar,** Vittorio Solina, "CAL-HUBRIA: A Centralized ICT Platform for Healthcare Data Sharing with AI-Assisted Diagnostic Support" **[In process]**

2026 Lucia Gazzaneo, Francesco Longo, **Atam Kumar Menghwar**, Giovanni Mirabelli, Vittorio Solina, "Human-Digital Twins for Smart and Sustainable Hospital Operations: Trends Analysis and a Value-Sensitive Framework." *Technology in Society, Elsevier* [Submitted]

2026 **Atam kumar Menghwar**, Miskeen Ali Gopang, & Ramesh Kumar "Modern Technologies and Their Impact on Supply Chain Efficiency and Transparency" *Supply Chain Forum: an International Journal, Taylor and Francis* [Submitted]

2026 **Menghwar, A. K.**, & Ali, M. "How Industry 4.0 Affected Prostheses Manufacturing." *Journal of Innovations in Business and Industry*, 4(1), 55–68.

2024 **Kumar, A.**, Kumar, R., & Gul, A. "Reduction of Lean Wastes by Using Value Stream Mapping: A Case Study of Textile Company in Pakistan." *International Journal of Supply Chain Management*, 9(2), 37–61.

2024 **Kumar, A.**, & Kumar, R. "Productivity Improvement of Assembly Line-by-Line Balancing Technique: Case Study Textile Manufacturing Company Karachi Pakistan." *South Asian Journal of Social Studies and Economics*, 21(5), 54–72.

2024   Meghwar, D. K., & **Kumar, A.** "Design Modification and Fabrication of an Active Solar Dryer." *International Journal of Engineering and Manufacturing*, 14(2), 57–73.

2024   **Kumar, A.**, Indher, H. K. B., & Nawaz, R. "Identify Main Challenges in Human Resource Departments and Suggest the Remedial Actions: Case Study." *International Journal of Industrial Engineering and Operational Research*, 6(1), 79–95.

2024   **Kumar, A.**, & Danish, M. "Evaluating the Role of IT Innovations in Enhancing Logistics and Supply Chain Management Effectiveness: A Review Paper." *Saudi Journal of Engineering and Technology*, 9(7), 344–357.

2022   **Kumar, A.**, Indher, H. K. B., Gul, A., & Nawaz, R. "Analysis of Risk Factors for Work-related Musculoskeletal Disorders: A Survey Research." *International Journal of Engineering and Manufacturing*, 12(6), 1–13.

2022   **Kumar, A.**, & Lal, B. "Students' Musculoskeletal Disorders Assessment Using RULA." *International Journal of Education and Management Engineering*, 12(6), 1–13.