ASAD RIAZ

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ResearchGate	www.researchgate.net/profile/Asad-Riaz-6
Iris UniGe	unige.iris.cineca.it/cris/rp/rp114518
Web of Science	www.webofscience.com/wos/author/record/OEP-4590-2025
GitHub	github.com/asadriaz2999
Google Scholar	scholar.google.com/citations?user=7evQkaMAAAAJ
Website	https://sites.google.com/view/asadriaz/

PERSONAL STATEMENT

To obtain a position in research and development or engineering sector where I can utilize my expertise in mechanical/Energy engineering, data analysis, and condition monitoring to support predictive maintenance, fault diagnosis, and data-driven engineering solutions while contributing to organizational efficiency and innovation. Furthermore, to serve humanity with the best of my abilities.

EDUCATION

11/2023 – Present

Department of Mechanical, Energy, and Management Engineering
University of Genova, Genova, Italy. (https://unige.it/)
Doctor of Philosophy in Mechanical Engineering

Research Area: Fault detection in Mechanical Systems using AI, Spectrograms Classification using CNN, Classification Tasks using Machine Learning and Deep Learning, Condition base monitoring, Machine Health Monitoring and Vibration Analysis.

09/2014 – 06/2017

U.S. - Pakistan Centre for Advanced Studies in Energy (USPCAS-E)
National University of Sciences & Technology, Islamabad, Pakistan. (https://nust.edu.pk/)
Master of Science in Energy Systems Engineering

Major Subjects: Solar Energy, Clean Coal Technologies, Thin Films, Computational Fluid Dynamics, Photovoltaic Systems, Solar Thermal and Nuclear power Plants.

10/2010 – 08/2014

University of Engineering and Technology Peshawar, Pakistan. (https://uetpeshawar.edu.pk/)
Bachelor of Science in Mechanical Engineering

Major Subjects: Fluid Mechanics, Thermodynamics, Power Plants, Heat & Mass transfer, Engineering Metallurgy, Engineering Materials, Machine Design, Manufacturing Processes, Refrigeration & Air Conditioning, Instrumentations and Automatic Control.

PROFESSIONAL EXPERIENCE

08/2017 – 09/2023

Lecturer | University of Technology, Nowshera, Pakistan

- Responsible for teaching undergraduate courses including Manufacturing Process, HVAC, Heat Transfer & Fuel Technology
- Grading exams (Quizzes, Assignments and papers)
- Attending and participating in meetings, conferences and trainings at the department level
- Preparation of bids for procurement of various lab equipment's
- Served as Head of Department
- Worked as Academic & OBE Coordinator
- Worked as SIT & FYP Coordinator

12/2014 – 04/2016

Research Assistant | National University of Sciences & Technology, Islamabad, Pakistan

- Survey of Biomass mapping in Pakistan under UNIDO funded project

RESEARCH PROJECTS

- **Thesis Title**: Identification of Defects in the Production of Powered Windows Regulator Through the Analysis of Vibration and Noise using AI
  Supervisor: Prof. Luigi Carasale
- **Thesis Title**: Techno-economic Analysis of Parabolic Trough Solar Thermal Power Plant for the Climatic Conditions of Pakistan
  Supervisor: Dr. Adeel Waqas
- **Thesis Title**: Design and Fabrication of Spy Bird for unrecognized surveillance system
  Link: https://www.youtube.com/watch?v=-vZuNwJmYhw
  Supervisor: Dr. Muhammad Sadiq Khatak

SOFTWARE PROJECTS/TOOLS DEVELOPMENT

- **Markdown Converter**
  It is a free, open-source Windows desktop application that converts documents such as PDF, Word, PowerPoint, Excel, HTML, and plain text into clean Markdown files. http://github.com/asadriaz2999/MarkDown-Converter
- **HDF5 Player**
  It is a desktop application for playing vibration and current signals from HDF5 acquisition files as an audio. https://github.com/asadriaz2999/hdf5-player
- **PDF to Excel Converter**
  It is a free Windows desktop app that extracts transaction tables (date, description, debit, credit, balance) from bank statement PDFs and writes them into a properly formatted .xlsx file. https://github.com/asadriaz2999/PDF2XLSX/releases/latest

RESEARCH INTERESTS

- Thermal Energy Engineering
- Renewable Energy Technology
- Vibration Analysis
- Condition base Monitoring of Machinery
- Machine Learning & Deep Learning for Fault Detection

SKILLS

- **Softwares:** Python, LabVIEW, MATLAB, TRNSYS, RETScreen, SAM, ANSYS, Auto Cad, Creo, Canva, Draw.IO, MS Office, LaTeX, Mendeley.
- **Teaching and Tutoring:** Energy and Mechanical Engineering courses
- **Languages:** Italian (beginner level), Excellent Command on English, Urdu and Pashto

ACADEMIC AWARDS & FUNDING

- Secured 2nd position in Master of Science in Energy Systems Engineering.
- Secured 3rd position in Bachelor Final Year Project competition.
- Secured 4th position in Higher Secondary School Examination by Board of Intermediate & Secondary Education Bannu, 2010.
- Fully funded USAID scholarship for Master of Science in Energy Systems Engineering.
- Received Overseas Pakistanis Foundation Merit Scholarship for Bachelor Studies.
- Secured research funding for Final Year Project from Pakistan Science Foundation.
- Received fully funded Italian Government Scholarship for doctoral studies in Mechanical, Energy and Management Engineering.

PROFESSIONAL TRAININGS AND COURSES

- Three months professional Training on "Artificial Intelligence Development Professional" at NUST.
- Hands on Training on "AI and ML" at Hi-Lex Italy S.p.A.
- Attended one-week course on "Application Development Using Gen-AI and LLMs".
- Attended one-week course on "MATLAB and its Applications in AI".
- Attended a Bootcamp on "Applied Machine Learning 360°".

- Attended a one-week Summer School on "Data Visualization".
- Attended a one-week Summer School on "A Journey through Deep Learning".
- Attended a two-week crash course on "Python".
- Attended a one-month course on "AI For Everyone".
- Attended a course on "Spectral analysis of stationary and non-stationary signals: theoretical background and practical applications".
- Attended a four-month course on "Google Data Analytics" by Coursera.
- Attended two-month online course on "Freelancing" by Ministry of IT & Telecom Government of Pakistan.
- Attended two-month online course on "Creative Learning" by Ministry of IT & Telecom Government of Pakistan.
- Attended a one-week course on "Medium Risk Safety" at University of Genova, Italy.
- Participated in National Technology Council Committee for the Review Chemical Engineering Curriculum as member.

WORKSHOPS AND SEMINARS

- Attended workshop on "Output Based Education Systems" at UoT Nowshera.
- Attended workshop on "Solar Photovoltaic Systems" by Arizona State University USA.
- Attended workshop on "Water-Energy-Food Security Nexus" by UNESCO.
- Attended workshop on "Capacity Building and Strengthening of Biomass Gasification Support System" by UNIDO.
- Attended workshop on "Energy Policy and Leadership" by Arizona State University USA.
- Attended workshop on "Entrepreneurship & Basic Supervision of Construction Projects" by Pakistan Engineering Council.
- Attended Seminar on "Approximation and classification by ReLU networks of increasing depth".
- Attended Seminar on "Computer Ethics" by la Scuola Superiore IANUA.
- Attended Webinar on "Artificial Intelligence: Implication on Technology and Business Studies" by Pakistan Engineering Council.
- Attended Webinar on "How Generative AI Changes Information Discovery".
- Attended Webinar on "Maximizing your Wiley Online Library Search with Boolean Operators".
- Attended Webinar on "How to Effectively use using ScienceDirect" Read Quality Publish Quality".
- Attended Webinar on "Maximizing Research Impact: Enhancing Efficiency and Effectiveness with Web of Science Data and Tools".
- Attended Webinar on "Time and Stress Management" by Pakistan Engineering Council.
- Attended webinar on "Elevate your leadership skills to take your organization to next level" by Pakistan Engineering Council.
- Attended a course on "Occupational Health and Safety" by Professional Safety Training and Health.

CONFERENCE PUBLICATIONS

- Asad Riaz et al., Feasibility and Potential of Parabolic Trough Solar Thermal Power Plants in Pakistan, 3rd conference on Sustainability in process industry 2016, University of Engineering and Technology Peshawar, Pakistan.
- Asad Riaz et al., Identification of Defects in the Production of Powered Window Regulators using Deep Learning, 3rd International Conference on Recent Trends in Statistics & Data Analytics, National University of Sciences & Technology, Islamabad, Pakistan.
- Asad Riaz et al., Identification of Defects in the Production of Window Regulators Using Deep Learning on Vibration Data, 5th International Conference on Digital Futures and Transformative Technologies, National University of Sciences & Technology, Islamabad, Pakistan. Doi: https://doi.org/10.1109/ICoDT269104.2025.11360695

JOURNALS PUBLICATIONS

- Asad Riaz et al., "Hybrid Energy Systems for Heavy Vehicles: Combining Heat Recovery and Renewable Energy Sources", Journal of Spectrum of Engineering Science. https://www.sesjournal.com/index.php/1/article/view/143/137
- Asad Riaz et al., "The Impact of AI on Employment in Pakistan: A Study on Job Displacement", Journal of Media Horizons. DOI: 10.5281/ZENODO.15062488
- Asad Riaz et al., "Recent Advancements in High-Performance and Durable Electrodes Materials for Magnesium-ion Batteries", Journal of Coordination Chemistry Reviews. DOI: 10.1016/j.ccr.2025.216702
- Asad Riaz et al., "Photovoltaic Performance of Solar Cells Enhanced by Tio_2 and ZNO nanoparticle Layers", Journal of Spectrum of Engineering Science. https://doi.org/10.5281/zenodo.15749859
- Asad Riaz et al., "Synergistic Effect of Al doping and sol-gel synthesis on the photocatalytic degradation of ciprofloxacin", Journal of Sol-Gel Science and Technology. DOI: 10.1007/s10971-025-06832-3
- Asad Riaz et al., ''An AI-Powered Hierarchical Deep Neural Network (Hidden) Approach For Computational Science and Engineering", Journal of Spectrum of Engineering Science. https://doi.org/10.5281/zenodo.16886331
- Asad Riaz et al., "Investigating the Impact of Material Fatigue on Structural Integrity in AI-Assisted Mechanical Systems" Journal of Spectrum of Engineering Science. https://doi.org/10.5281/zenodo.17035514
- Asad Riaz et al., "AI Driven Net Zero Energy Smart Grid 2.0 Revolutionizes With 90 MVA Transformers and Renewables" Journal of Spectrum of Engineering Science. https://doi.org/10.5281/zenodo.17189282
- Asad Riaz et al., "Solar-Driven Photocatalytic Treatment of Industrial Effluents Using Metal–Organic Framework (MOF) Derived Nanomaterials" Journal for Current Sign.
- Asad Riaz et al., "3D Printing of Metal-organic Frameworks for Electrochemical Energy Storage Devices" Journal of Coordination Chemistry Reviews. https://doi.org/10.1016/j.ccr.2025.217353
- Asad Riaz et al., "Image Noise Reduction Techniques Using Machine Learning" Journal of The Asian Bulletin of Big Data Management. https://doi.org/10.62019/m5jj7c95

PROFESSIONAL MEMBERSHIPS

- PEC Registered Engineer (Registration No: MECH/28437)
- Member of ASME.

REFERENCES

- Dr. Luigi Carassale, Professor, University of Genova, Italy.
  Email: luigi.carasale@unige.it
- Dr. Irshad Ullah, Assistant Professor, University of Technology, Nowshera, KPK, Pakistan.
  Email: irshadullah@uotnowshera.edu.pk