Asim Zaheer, PhD

***Focused on Engineering Innovation in Digital Health & Human Factors*.**

Contact Information:

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Personal Profile:

As an engineering research leader and academic nurtured at NED University, I am dedicated to developing data-driven solutions for complex challenges in human factors and digital health. My career is distinguished by the prestigious peer recognition of a competitive, full-cost international PhD scholarship awarded by our university, which enabled my original contribution to engineering knowledge: the novel, validated TAER tool. This innovation—a product of rigorous biomechanical analysis and systems design—exemplifies NED's commitment to pioneering research. I have further demonstrated this through a proven record of leadership in translating engineering research into tangible industrial impact. Building on this strong foundation, I am now advancing a strategic research initiative centred on the engineering development of 'Tele-TAER', a scalable digital health platform for healthy ageing. This next phase of my work leverages NED's research environment to create synergistic platforms that position us at the forefront of medical technology and digital engineering innovation.

Evidence of Personal Promise:

Prestigious Peer Recognition: Awarded a highly competitive, full-cost international PhD scholarship (£66,354) by *NED University of Engineering & Technology* for doctoral research at the University of Sheffield, UK, based on a proposal deemed novel and high-potential.

Original Contribution to Knowledge: Developed and validated the TAER (Task Assessment for Ease and Risk) tool, the first interdisciplinary framework for proactive ergonomic risk assessment in domestic settings, bridging a critical gap in global public health with high scientific robustness (78% sensitivity, 74% specificity).

Sustained Post-Doctoral Excellence: Recipient of a Post-Doctoral Research Award Rs. 100000 for a high-impact publication, demonstrating a continued trajectory of achievement beyond the doctorate.

Early Recognition of Potential: Final year engineering project (ROV '**MAARKA**' for the Pakistan Navy) was prominently featured in DAWN newspaper on 16 May 2000, demonstrating an early capacity for innovative and impactful engineering work.

Education:

PhD in Mechanical Engineering (Ergonomics & Human Factors), *University of Sheffield, Sheffield, UK,* 2012 – 2018.
Thesis: *Designing of a "Task Assessment Tool for Ease and Risk" (TAER) Within the Domestic Environment.*
Full-Cost Scholarship Award: **£66,354** (international fees, living expenses, research costs).
Original Contribution: Created and validated the novel TAER tool through real-home studies.

Masters in Engineering Management (MEM) (CGPA: 3.00/4.00), *Wichita State University, Kansas, USA,* 2002 – 2004.

B.E. in Mechanical Engineering *NED University of Engineering & Technology, Karachi, Pakistan,* 1995 – 2000.

Academic Appointment & Leadership:

Assistant Professor *Department of Industrial & Manufacturing Engineering, NED University,* Apr 2007 – Present. Lead and deliver undergraduate and postgraduate modules in Ergonomics, Human Factors, Occupational Health & Safety, and Lean Manufacturing. Spearhead curriculum development and foster interdisciplinary research.

Departmental Health and Safety Convener *NED University of Engineering & Technology,* 2018 – Present, Spearheaded the development, implementation, and compliance of the university-wide Health and Safety Management (HSM) system, transforming institutional safety protocols.

Research Grants & Awards:

Post-Doctoral Research Publication Award (2021) *NED University of Engineering & Technology, R*s. 100,000, Awarded for high-impact research published in the Journal of Engineering Research.

Full-Cost International PhD Scholarship (2012) *NED University of Engineering & Technology,* £66,354, Awarded based on the novelty, feasibility, and potential impact of the research proposal.

Research Leadership & Key Projects:

Development and Validation of the TAER Tool PhD Project, University of Sheffield, UK,
Principal Investigator: **Engineered a novel assessment tool** by synthesizing occupational therapy and industrial ergonomics to create a proactive self-assessment tool for domestic MSD risks. Validated in 20+ UK homes.

PhD Supervision *NED University of Engineering & Technology*, Ongoing, **HSE Approved Supervisor**,
PhD Title: Development of a Strategic Preparedness Index through Risk, Readiness and Resilience Assessment for Digital Transformation of a Supply Chain.

Prevalence of MSDs in the Automotive Industry (*NED University of Engineering & Technology*, Ongoing)
Principal Investigator: Conducted comprehensive ergonomic assessments (REBA/RULA) and statistical modelling in Pakistani automotive plants. Findings directly informed workstation redesigns and safety protocols. (Manuscript under review).

Smart Health and Safety Compliance (SH&SC) System *NED University of Engineering & Technology,*
Project Lead: Developing an innovative digital system for organisational HSM compliance.

Selected Publications:

Zaheer, A., **& Siddiqui, U.M. (Under Review).** The Prevalence of Work-Related Musculoskeletal Disorders among Workers in the Automotive Industry. *Journal of the Human Factors and Ergonomics Society*.

Zaheer, A., **& Fatima, A. (2024).** On implementation of health and safety measures in re-beaming department of denim manufacturing – a case study. *Clothing and Textiles Research Journal*.

Zaheer, A., Fatima, A., & Rowson, J. (2021). Evaluating and Managing MSDs in Domestic Tasks through Ergonomics. *Journal of Engineering Research (JER)*. **→ Awarded Research Prize**

Zaheer A., **Yoxall A., & Rowson J. (2019).** Ergonomics approach to assess the risk associated with the performance of domestic tasks–part "B". *International Journal of Public Health and Clinical Sciences, 6*(2), 132.
Zaheer A.**, Yoxall A., & Rowson J. (2018).** Ergonomics approach to assess the risk associated with the performance of domestic tasks–part "A". *International Journal of Public Health and Clinical Sciences, 5*(4),

Zaheer, A., **Yoxall, A., & Rowson, J. (2017).** Evaluation of Ergonomics Risk Factors and Physical Strain Within Home Environment. *Design for Health, 1*(2).

Zaheer, A., **Carre, M., Yoxall, A., & Rowson, J. (2015).** Evaluation of adopted postures and the hardest part of the domestic laundry task. In *Proceedings of the Third European Conference on Design4Health 2015*. Sheffield, UK.
Zaheer, A., Khalid, R., (2012). Ergonomics: A work place realities in Pakistan, International Poster Journal of Science & Technology, Biomass Conversion Research Center, COMSAT Institute of Information Technology, Vehari Pakistan.
Perween, S., Zaheer, A., & Khalid, R. (2012). Classification and Balancing of an Automotive Assembly Line.
In *Proceedings of the International Asia Conference on Industrial Engineering and Management Innovation (IEMI2012)*. Changsha, China.

Teaching & Mentorship:

Designed & Lectured PhD Courses: Advanced Occupational Ergonomics; Advanced Ergonomics Tools and Techniques; Industrial Psychology.

Graduate Courses Taught: Human Factors Engineering; Occupational Health & Safety; Lean Manufacturing; Supply Chain Management; Project Management.

Postgraduate and Master's project Supervision: Secondary supervisor for 1 PhD candidate; successfully supervised multiple Master's theses (Primary supervisor).

Undergraduate Courses: Ergonomics; Human Factors Engineering; Occupational Health & Safety; Lean Manufacturing.

Professional Experience:

Quality Manager | Super Tech Auto Parts, Karachi, Pakistan | 2005 – 2006

Quality Engineer | Derby Cellular Products, Connecticut, USA | 2004 – 2005

Assistant Factory Manager | Pakistan Rice Complex, Karachi, Pakistan | 2000 – 2002

Certifications & Affiliations

NEBOSH International General Certificate in Occupational Health and Safety (Complete IG1 only)

Precision Mechanics & CNC Training, Pak-Swiss Precision Mechanics & Instrumentation Training Centre.

Member, Pakistan Engineering Council (PEC).

Member, Pakistan Institute of Quality Control (PIQC).

References:

Available on request