

Nazia Ejaz

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Address: DBME, BUETK, Khuzdar, Pakistan.

Objective:

Committed to fostering student learning, advancing scholarly research, and promoting academic excellence through innovative teaching methods, curriculum development, and collaborative initiatives.

Professional Experience:

1. Working as an **Assistant Professor/Chairperson** in the Department of Biomedical Engineering Department, Balochistan University of Engineering & Technology, Khuzdar(BUETK) since March 2024 – present.
2. Served as a **Lecturer** in the Department of Biomedical Engineering Department, Balochistan University of Engineering & Technology, Khuzdar(BUETK) from December 2020 – February 2024.
3. Served as a **Lecturer** in the Department of Biomedical Engineering Department, Ziauddin University, Faculty of Engineering, Science, Technology and Management, Karachi, Pakistan(ZUFESTM) from February 2014 – December 2020.

Qualification:

1. **PhD** in Electrical Engineering from Ziauddin University, Faculty of Engineering, Science, Technology and Management, Karachi, Pakistan(ZUFESTM) in February 2024.
Area of Research (Biomechanics & Rehabilitation Engineering).
2. **Masters in Biomedical Engineering** from Sir Syed University of Engineering and Technology, Karachi, Pakistan(SSUET) in April 2016.
3. **Bachelors in Biomedical Engineering** from Ziauddin University, Faculty of Engineering, Science, Technology and Management, Karachi, Pakistan(ZUFESTM) in April 2014.

Peer Reviewed Journals/ Conferences Proceedings:

1. **Examining Gait Characteristics in People with Osteoporosis Utilizing a Non-Wheeled Smart Walker through Spatiotemporal Analysis.** “*Journal of Applied Sciences*”, Nov 2023.
Nazia Ejaz, Saad Jawaid Khan, Fahad Azim, Mehwish Faiz, Emil Teuțan, Alin Pleșa, Alexandru Ianosi-Andreeva-Dimitrova, and, Sergiu-Dan Stan.
2. **Automatic Gait Classification Model Empowered by Machine Learning for People with and without Osteoporosis Using Smart Walker.** “*Journal of Applied Sciences*”, Nov 2023.
Nazia Ejaz, Saad Jawaid Khan, Fahad Azim, Muhammad Asif, Emil Teuțan, Alin Pleșa, Alexandru Ianosi-Andreeva-Dimitrova, and, Sergiu-Dan Stan.
3. **Design and Evaluation of Arabic Handwritten Digits Recognition System Using Biologically Plausible Methods.** “*Arabic Journal for Science and Technology*” Dec 2023.
Nadir Hussain, Mushtaq Ali, Sidra Abid Syed, Rania M. Ghoniem, Nazia Ejaz, Omar Imhemed Alramli, Mohammed Alaa Ala'anzy, and Zulfiqar Ahmad.
4. **Disclosing the Locale of Transmembrane Proteins Within the Cellular Alcove by Machine Learning Approach: Systematic Review and Meta Analysis.** “*Journal of Bimolecular Structure & Dynamics*”, Sep 2023.
Mehwish Faiz, Saad Jawaid Khan, Fahad Azim and Nazia Ejaz.

5. **Adding Gastrointestinal Diagnostic Laboratory by Designing a Device for the Non Invasive Detection of Peptic Ulcer.** *“Proceedings of the Institution of Mechanical Engineers Part H Journal of Engineering in Medicine”, June 2023.*
Mehwish Faiz, Maheen Murad, Rabia Khalid, Taha Mushtaq shaikh, Essar Ali, Mahnoor Shah, Nazia Ejaz and Saad Jawaid Khan.
6. **CPR Training Tool for Health Care Providers.** *“Pakistan Journal of Science (Vol.75, No.2) June 2023.*
Mehwish Faiz, Syeda Aimen, Nazia Ejaz, Haider Abbas and M.U. Khan.
7. **Design of a device for the detection of sleep apnea for paralyzed patients.** *“International Journal of Computer Science and Information Technologies” Volume 2, Issue 1, June 2019*
Mehwish Faiz, Nimra Mehmood, Syeda Fatima Aijaz, Taha Mushtaque Sheikh, Nazia Ejaz.
8. **Long-Term Monitoring of the User’s Condition, Using a Smart Rollator.** *“INTERNATIONAL BIOMEDICAL AND DIGITAL HEALTH CONFERENCE 2022”, Nov 2022.*
Nazia Ejaz, Saad Jawaid Khan, Fahad Azim and Mehwish Faiz.
9. **Mobility Analysis Aid for Lower limb disabilities.** *“Gold Medal Winner of 34th Multi-topic International Symposium 2019 (IEEEP)” Nov 2019.*
Nazia Ejaz, Muhammad Asif, Mahwish Moiz, Javeria Jawed, Aneel John Edgar and Ibad Khan
10. **Automatic Estimation of 10 Meter Walk Test Using Smart Rollator.”***1st International Conference on Emerging Trends in Biomedical Engineering, Science and Technology (ICETBEST), February 28-29, 2024.*
Nazia Ejaz, Saad Jawaid Khan, Mehwish Faiz, and Fahad Azim.
11. **An Innovative Rehabilitation Based Gloves for Curtailing Pain in Arthritis Patients.** *“Atlantis Press- Springer Nature, Proceedings of the 4th International Conference on Key Enabling Technologies(KeyTech2024), 1st– 2nd September 2024, Dublin City University, Ireland.*
Nazia Ejaz, Mehwish Faiz, Anshara Hasib, Inam Ul Ahad, Sohrab Khan, Jalal Shah and Dr. Wazir Muhammad.
12. **Multi-Scale Deep Convolutional Neural Networks for Microscopic Image Super-Resolution.** *“Atlantis Press- Springer Nature, Proceedings of the 4th International Conference on Key Enabling Technologies(KeyTech2024), 1st– 2nd September 2024, Dublin City University, Ireland.*
Wazir Muhammad, Nazia Ejaz, Ayaz Hussain, Jalal Shah, Sohrab Khan, and Inam Ul Ahad.
13. **Deciphering Membrane Proteins Through Deep Learning Models by Revealing Their Locale Within the Cell.** *“Journal of Bioengineering”, Nov 2024.*
Mehwish Faiz, Saad Jawaid Khan, Fahad Azim, Nazia Ejaz, and Fahad Shamim.

Certification/Continuous Professional Development courses:

1. **Academic staff Training at Technical University of Cluj Napoca from 10-14 Feb, 2025.**
Key areas: Advanced biomedical technologies and their integration into academia & industry, Presentation of local ecosystem: local companies, ABC Incubator, Transylvania IT Cluster, Collaborative research opportunities in medical innovation, Digital healthcare transformation and the role of AI & IoT in medicine, Augmented reality and virtual reality and Future academic and industry partnerships between European and Pakistani institutions.
2. **Workshop on Innovative Teaching Methods** at Dublin City University, Ireland from 2nd – 3rd September 2024.
3. **Training programme on Advanced Manufacturing** at Dublin City University, Ireland from 4th – 6th September 2024.
4. **1st International Electrical Engineering Congress on Innovation & Advances in Electrical Engineering** jointly organized by The Institution of Engineers Pakistan, Karachi Centre & NED

University of Engineering & Technology Karachi (Under PEB License No: PEB-S-IEPKHI-0076) held on 13th & 14th May 2016.

5. One-day CPD course on “**Leadership for Engineers and Technical Managers**”.
6. Workshop on **Bioelectric Signals, Data Acquisition, and Electrophysiology**.
7. Workshop on **Design and Concept of CSSD Workflow**.
8. Six weeks Training session on **Generative AI** organized by the **Pakistan Engineering Council**.

Computing Skills:

MATLAB, Python, Machine Learning, Deep Learning, MR/VR/AR solutions, Gen AI, and SPSS.

Administrative Skills:

- Organized several continuous professional Development courses related to Current Engineering Trends at Ziauddin University for faculty members and students.
- Organized and served as Master Trainer for a 2-day Outcome Based Education implementation workshop at BUETK.
- Organized multiple outreach programs and served as Master Trainer in Balochistan (Khuzdar) on Biomedical Engineering, the importance of STEM for women, and Industry 4.0/5.0 technologies.
- Participated in Health Asia Exhibition (Oct 17–19, 2024, Karachi) to transform knowledge of Biomedical Engineering and Digital Technologies to visitors.
- As Chairperson of the Department of Biomedical Engineering, oversee daily departmental operations, support students and faculty, update curriculum based on emerging trends in engineering, and encourage student engagement in projects, Workshops, Seminars, Conferences, and research collaborations.

Grant:

Secured funding **Erasmus+ BIOMED5.0** for capacity building in Higher Education in digital transformation through industry 4.0/5.0 technologies. Approximately 800000€ has been granted for BIOMED 5.0. A total of 10 Universities (Biomedical Engineering Departments) and Pakistan Engineering Council are in collaboration.

Research Collaboration:

Long Term Research collaboration with the Department of Mechatronics and Machine Dynamics, Technical University of Cluj-Napoca, Romania.

Awards:

Received Gold Medal - Best graduate award in Undergraduate.

Final Year Project Supervisor:

I have supervised several final-year projects in the undergraduate Biomedical Engineering program, such as a **Human Mobility Analysis Aid**, a **Smart Walker designed for patients with lower limb disabilities**, a **Smart Rollator for Mobility Assessment**, and a **Pressure Dynamometer**.

References:

Dr. Saad Jawaaid Khan (PhD Supervisor)

Professor, Biomedical Engineering Department,
Principal, Ziauddin Faculty of Engineering, Science, Technology & Management
Sj.khan@zu.edu.pk

Dr. Wazir Muhammad

Ex-Chairman Biomedical Engineering Department,
Balochistan University of Engineering & Technology
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Dr. Fahad Azim (PhD Co-supervisor)

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