SANA IJLAL SHAHRUKH

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PROFESSIONAL SUMMARY

Biomedical engineer with 15+ years of experience across medical devices, biomedical instrumentation, research, and higher education. Strong foundation in electronics, signal processing, and experimental design, with a growing focus on analytics and data-driven healthcare systems. Experienced in translating complex biomedical data into practical, patient-centered solutions.

EDUCATION

Master of Science (Analytics)
Georgia Institute of Technology (January 2026-Present)
Focus on data analytics, statistical modeling, and computational methods for real-world applications.

Master of Engineering, Electronics Engineering
NED University of Engineering and Technology, Karachi, Pakistan (June 2011)

Specialization: (Micro System Design (Evening Program)
CGPA: 3.20/4.00
Relevant Coursework: Analog Integrated Circuits, VLSI Design, Digital Electronics, Micro-fabrication Processes, Electronic Design Automation, Advanced Digital Electronics and Interfacing

Bachelor of Science, Biomedical Engineering
Sir Syed University of Engineering and Technology, Karachi, Pakistan (April 2006)
CGPA: 3.38/4.00
Relevant Coursework: Biomedical Instrumentation, Medical Imaging, Bio-signal Processing, Circuit Analysis, Digital Signal Processing, Medical Device Design

PROFESSIONAL EXPERIENCE

Lecturer / Lab Engineer
Imam Abdulrehman Bin Faisal University, Dammam, Saudi Arabia (December 2016 to September 2024)

- Designed and delivered undergraduate courses in biomedical engineering and electronics
- Developed laboratory curricula integrating theoretical concepts with practical applications
- Mentored students in research projects involving biomedical device development and signal processing
- Implemented innovative instructional technologies to enhance student engagement and learning outcomes
- Collaborated with international faculty on interdisciplinary research initiatives

Assistant Professor
Sir Syed University of Engineering and Technology, Karachi, Pakistan, (June 2007 to October 2014)

- Conducted independent research in biomedical instrumentation and signal processing systems
- Published peer-reviewed research in biomedical sensor systems and medical device development
- Supervised undergraduate and graduate student research projects
- Developed curriculum for biomedical engineering courses emphasizing practical applications
- Established collaborative relationships with medical professionals for translational research

Service Engineer
Biotech Pakistan Pvt. Ltd., Karachi, Pakistan (December 2005 to June 2007)

- Maintained and repaired critical care medical equipment from leading global manufacturers
- Conducted technical assessments for the procurement of medical equipment, providing expert recommendations
- Developed comprehensive maintenance protocols and documentation systems
- Completed specialized training on advanced medical devices (Infusion Pumps 5000 & Syringe Pump 6000 series, Arcomed AG, Switzerland)

TECHNICAL SKILLS

Programming & Software

- MATLAB, LabVIEW, CAD Software, Signal Processing, Data Analysis, Python,

Biomedical Engineering

- Medical Device Design, Biomedical Instrumentation, Medical Imaging Systems, Bio-signal Processing

Electronics Engineering

- VLSI Design, Analog/Digital Circuits, Micro-system Design, Sensor Systems

Research & Analysis

- Experimental Design, Statistical Analysis, Technical Writing, Project Management

SELECTED PUBLICATIONS

Kamran Hameed, Syed Mehmood Ali, Ijlal Shahrukh, Sana Shahrukh, An Approach to Design a Cost-Effective Thermocycler for Polymerase Chain, Proceedings of IEMTRONICS 2024: International IoT, Electronics and Mechatronics Conference, Volume 2, Springer Nature, 2025.

K. Hameed, S. I. Shahrukh and I. S. Ateeq, "Design of Monitoring System for Respiratory Diagnosis," *2022 IEEE International IOT, Electronics and Mechatronics Conference (IEMTRONICS)*, Toronto, ON, Canada, 2022, pp. 1-8, doi: 10.1109/IEMTRONICS55184.2022.9795832

Sania Riaz, Maria Zahid, Rizwan-ur-Rehman, Beenish Aftab, Muhammad Imran and Sana Ijlal Shahrukh, "Effect of Phytoestrogens in the Treatment of Polycystic Ovary Syndrome in Rat Model," *Journal of Food and Nutrition Research*, 2022; 10(7):518-525. doi: 10.12691/jfnr-10-7-11

Kamran Hameed, Sana Ijlal Shahrukh, Ijlal Shahrukh Ateeq, Design of Monitoring System for Respiratory Diagnosis, 2022 IEEE International IOT, Electronics and Mechatronics Conference (IEMTRONICS)

IS Ateeq, K Hameed, M Khowaja, Sana H. Khan, "Design and Implementation of Digital Tele Stethoscope," *World Congress on Medical Physics and Biomedical Engineering 2018*, 867-873

RM Siddiqui, DZ Moghaddam, TR Turlapati, Sana H. Khan, I Ul Ahad, "X-Ray Intensity Measurement Using Frequency Output Sensor for Computed Tomography," *International Journal of Biomedical and Biological Engineering*, 2013

S. Manazir Hussain, Ijlal Shahrukh Ateeq, Kamran Hameed, Aisha Tahir, S.M.Omair, S. Imran Alam, Sana Hyder Khan, "A Novel Body Temperature Measuring and Data Transmitting System Using Bio-Sensors and Real-Time Transmission Technique"

RESEARCH INTERESTS

Computational bioengineering, medical device development, biomedical signal processing, rehabilitation robotics, neuroinformatics, computational fluid dynamics in biomedical applications, wearable sensor technologies, and translational research bridging engineering innovation with clinical applications.