Prof. Dr. RIAZ UDDIN

Office Addresses:

1) Haptics, Human-robotics and Condition Monitoring Lab (HHRCM Lab – NCRA NEDUET) & Room E2, Department of Electrical Engineering, NED University of Engineering and Technology, Karachi, Pakistan.
   Phone No: +92 21 99271261~9 Ext: 2232
2) Office of Research, Innovation and Commercialization (ORIC), NED University of Engineering and Technology, Karachi, Pakistan.
   Phone No: +92 21 99271261~9 Ext: 2356

Emails: riazuddin@neduet.edu.pk ; riaz.nedian@gmail.com ; oric@neduet.edu.pk
Websites: https://eed.neduet.edu.pk/sites/default/files/Faculty_CVs/Dr.%20RIAZ%20UDDIN.pdf
http://www.neduet.edu.pk/ ; https://oric.neduet.edu.pk/
https://ncra.neduet.edu.pk/ ; http://ncra.org.pk/

Lab FB Page: https://www.facebook.com/NCRANEDUET
LinkedIn: https://www.linkedin.com/in/riaz-uddin-7a604432/
ResearchGate: https://www.researchgate.net/profile/Riaz-Uddin-7
ORCID: https://orcid.org/0000-0001-6499-5818
Google Scholar: https://scholar.google.com/citations?hl=en&user=Sam5bWYAAAAJ

Career Highlight

Dr. Riaz Uddin received his BE and M.Engg degrees from the Department of Electrical Engineering, from NED University of Engineering and Technology in 2005 and 2008, respectively. He received his PhD Degree in Mechatronics in 2016 from (Human-Robotics Lab) GIST, South Korea. His PhD research is based on research projects from the international industries/organizations such as Agency for Defense Development (ADD Korea), National Research Foundation of Korea (NRF), Ministry of Science, ICT & Future Planning and Industrial fusion strategic technology development program, Basic Research Projects in High-tech Industrial Technology, and Global Frontier R&D Program, Ministry of Industries, Korea. During these projects, He has also been the part of Haptic Technology Research Center (HTRC), South Korea. He is the inventor of Predictive Energy Bounding Algorithm (EBA) for Stable & Transparent Haptic Teleoperation Control and published the state-of-the-art systematic review for Predictive Teleoperation Control Approaches. He is also a very active reviewer of reputed journals from IEEE, Elsevier and Springer. He is currently working as a **Professor** in the Department of Electrical Engineering at NED University of Engineering and Technology, Karachi, Pakistan (initially joined as lecturer in 2005), where he is responsible to teach (& research) undergraduate/ Masters/ PhD courses majorly related to Controls, Robotics, Mechatronics, Haptics Interfaces and Power Systems Control along with supervising Masters and PhD students. In addition, he is also working as Director of the Office of Research, Innovation and Commercialization (**Director ORIC-NEDUET**). He had worked as Deputy Management Representative ISO 9000 / Deputy Director Quality Enhancement Cell of the University. He has been the Co-Convenor, Conference Chair and Deputy Chief Organizer of International Electrical Engineering Conference (IEEC-2016, -2017, (-2018 to -2021), respectively). He is the Recipient of the inaugural **Ali Suleman Habib Engineering Excellence Award 2022** from House of Habib Group as well as **NEDAASC Best Teacher** and **Best Researcher** Awards multiple times.
He has been the **Chief Organizer** of the both inaugural Sindh HEC Research and Technology Showcase - 2022 and Sindh Innovative Startup Showcase - 2025 at FPCCI, Karachi. He is the **Social Secretary** and **Member Executive Committee** of NED International Alumni Association **(NEDIAN)**. He is also the **Member of Committees** (Electro-medical Devices and Engineering Goods & National Electronics Policy) of **MoST**, Pakistan. He is **Member Steering Committee Research Excellence Framework (REF)** under Pak-UK Education Gateway programme (by HEC Pakistan, British Council, and UK REF). He is also a **Senior Member IEEE**. In 2018, He won a mega project for establishing Haptics, Human-Robotics and Condition Monitoring Lab Affiliated Lab of National Center of Robotics and Automation (NCRA) by Planning Commission (PC)/ HEC, Pakistan. This lab is the Joint Lab of NED-MUET and he is the **Principal Investigator**. The lab focuses on the design and development of Tele-manipulation Robots for the disaster management applications, fabrication of STEM-based Education/Assistive Robots, Innovative Healthcare technologies and products. He is also the **Director HPSRC** – High Performance Sports Research Centre – HEC at NED University. In addition, he is also the PI and Co-PI of multiple research grants. He has more than **77* national/international publications** to his name in reputed Journals/conferences/book/Intellectual Properties. He has been involved in multiple research and industrial grants of worth more than PKR 1500 million. His research interests include control systems, automation, smart healthcare systems/product design, instrumentation, robotics, haptics, and tele-operation. He is the **Mentor/Founder** of two HHRCM Lab Startups (RobAutoSTEM and Haptronica) which involves in the commercialization of **Lab-to-Market Products (Made-in-Pakistan)**.
He (along with his team) recently designed low-cost ventilator **(NED-Ventilator)** in this **COVID-19 pandemic,** also performed a **successful intercontinental Teleoperation between Asia (Karachi-Pakistan) & Europe (Innsbruck-Austria)** and **Made-in-Pakistan** innovative commercializeable products, whose initial progresses were covered by International & Local Media such as BBC world, BBC Urdu, ARY, SAMAA, GEO, Dunya News, 92 News, 24 News, ARY, GTV, PTV, Hum TV along with official social media platforms/podcasts FB/Youtube etc.

Education

2016 - **PhD** in Mechatronics Engg. from Gwangju Institute of Science & Technology (GIST), South Korea.

PhD Thesis Title: A Predictive Energy-Bounding Algorithm for Haptic Teleoperation (link: library.gist.ac.kr).

2008 - **ME** in Electrical Engineering from NED University of Engineering and Technology, Pakistan.

2005 – **BE** in Electrical Engineering from NED University of Engineering and Technology, Pakistan.

Work Experience

Present:

- **Professor -** Department of Electrical Engineering NED University of Engg. & Tech., **Pakistan (6th Oct 2025 - Till date)**
- **Director ORIC** – Director of the Office of Research, Innovation and Commercialization NED University of Engg. & Tech., **(Dec 2020 – Till date)**
- **Director NCRA-NEDUET** Lab **/ Principal Investigator (PI)** - Haptics, Human-Robotics and Condition Monitoring Lab (affiliated with NCRA HEC/PC Pakistan) **(June 2018 – Till date)**
- **Director HPSRC** – High Performance Sports Research Centre – HEC at NED University

Past:

- **Associate Professor -** Department of Electrical Engineering NED University of Engg. & Tech., **Pakistan (11th Jan 2022 – 5th Oct 2025)**
- **Assistant Professor -** Department of Electrical Engineering - NED University of Engg. & Tech, Pakistan **(11th Oct 2008 – 10th Jan 2022)**
- **Lecturer, Teaching -** Department of Electrical Engineering - NED University of Engg. & Tech, Pakistan **(03rd Sept 2005 – 10th Oct 2008)**
- **Deputy Director (QEC) / Deputy Management Representative (DMR-III ISO) -** NED University of Engg. & Tech, **Pakistan (2016 - 2020)**
- **Lecturer, Teaching -** Indus Institute of Higher Education, **Pakistan (Visiting Faculty - 2005)**
- **Junior Assistant Manager, Operations -** Karam Ceramics Ltd., Karachi **Pakistan (2005)**
- **Internee, Power House of Electrical Pneumatic Networks Department -** Siemens Pakistan Engineering Co. Ltd **(Dec 2004 till Jan 2005)**.

Academic & Research Visits:

International

- **Exhibitor** Representing NED University/HEC/Pakistan at Global Sustainable Development Congress, Queen Sirikit National Convention Center Bangkok, **Thailand (June 2024)**
- **Academic Visitor -** Coventry University, as a part of British Council Global Partnership PAK-UK Education Gateway Mobility Partnership for Faculty, Coventry **United Kingdom** (**August 2023**)
- **Visiting Research Professor -** Centre for Computational Science and Mathematical Modelling (CCM), Coventry University, Coventry **United Kingdom** (**March 2023**)
- **Academic Visitor** – Digital Innovation Facility, University of Liverpool, Liverpool **United Kingdom (March 2023)**
- **Visiting Researcher -** Interactive Graphics and Simulation Group (IGS), University of Innsbruck, **Innsbruck Austria** (**Oct – Nov, 2022**)
- **Exhibitor** Representing NED University/HEC/Pakistan at EDEX Expo at Colombo, **Sri Lanka (March 2022)**
- **Participant** at APQN Annual Academic Conference at Bandaranaike Memorial International Conference Hall Colombo, **Sri-Lanka (March 2019)**

National

- **HEC Evaluator** for BIC Recognition of IBA, **Karachi 2024.**
- **HEC Evaluator** for BIC Recognition of Jinnah University for Women, **Karachi 2024.**
- **HEC Evaluator** for ORIC Recognition of DHA Suffa University, **Karachi 2024.**
- **PEC Program Evaluator** of PEC Accreditation Visit (BE Programs) at QUEST **Nawabshah 2024.**
- **Sub-Committee** (NED Affiliation Committee) for Re-accreditation Visits at IIEE, **Karachi 2019 to date.**

Honors, Awards Scholarships, Research/Academic Projects, and Grants

FUNDINGS/GRANTS/CONSULTANCIES

- **Consortium Partner** Erasmus+ Programme (ERASMUS+) "BRIDGE - Building Resources for Innovation, Digital Growth and Empowerment" (in Consortium with Dublin City University (Lead), UET Lahore (Lead), LCWU, PAF-IAST, BUITEMS, KIU, PEC, EMP (Greece)) **– (Total EUR 799,990/-)** & NEDUET share EUR 92,467 + 10,274 = 102,741.4/-) - **2025**.
- **Principal Investigator -** "Indigenous Design & Development of Universal Tensile Testing Equipment for Textile Industry" Under Technology Development Fund by HEC (**Funding ~ Rs. 13.48 million**) **– 2024**.
- **Principal Investigator -** "Indigenous Rapid Development of CPAP Respiratory Assistive Equipment for Co-Effective Stockpiling in Pandemic and Disaster Hit Area" Under SRSP by Sindh HEC (**Funding Rs. 2.4 million**) **- 2024**.
- **Principal Investigator** – Consultancy Project for the Design and Deployment of Smart Liquid Level Device at JP COAT (Multi-National Company) – **2024.**
- **NEDAASC FYP Funding** for FYP Supervised on "**5- Axis CNC Machine", 2024**.
- **NGIRI- Ignite Funding** for FYP Supervised on "**Non-Invasive Ventilation for Sleep Apnea", 2024**.
- **NGIRI- Ignite FYP Funding** for FYP Supervised on "**Gait Control of Quadruped Design"** in **2024**".
- **Automation Lead -** Consultancy Project of Shake Table Development and Deployment for PDMA Baluchistan (Collaboration of UNDP, Govt. of Balochistan and NEDUET) **2024 – Live Demonstration** Infront of CM Baluchistan and General Secretary UNDP.
- **Consortium Partner** British Council - Global Partnership PAK-UK Education Gateway Mobility Partnership for Faculty (in Consortium with Coventry University (Lead), NUST (Lead), AU, PAF-IAST, IBA) **– (PKR 11.4 million for Pakistani Institutions and GBP 40,000/- for UK Institution) - 2023**.
- **Consortium Partner** British Council - Global Partnership PAK-UK Education Gateway Mobility Partnership for Students (in Consortium with Coventry University (Lead), NUST (Lead), AU, PAF-IAST, IBA) **– (PKR 7.054 million for Pakistani Institutions and GBP 23,550/- for UK Institution) - 2023**.
- **Principal Investigator** for "Design and Development of Universal Smart Robotic Manipulation System for Packaging Industry" Under National Research Program for Universities (NRPU), HEC Pakistan **(Funding Rs. 8.8176 million) - 2023.**
- **NGIRI- Ignite FYP Funding** for FYP Supervised on **"Design of a CPAP Machine"** in **2023**".
- **NGIRI- Ignite FYP Funding** for FYP Supervised on "**Smart Social Interaction Robot for Commercial Enterprise"** in **2023**".
- **NGIRI- Ignite FYP Funding** for FYP Supervised on **"Improved Design of a Quadruped Development"** in **2023**".
- **Principal Investigator** for "Indigenous Prototype Development of ICU Ventilator" Under ASRB Grant, NED University of Engineering and Technology, Pakistan (**Funding Rs. 0.904 million**) **- 2022**.
- **Co – Principal Investigator – "**ES2: Energy smart switch (an applied smart switch for residential and office purpose) Under SRSP by Sindh HEC (**Funding Rs. 1.6 million**) **- 2022**.
- **NGIRI- Ignite FYP Funding** for FYP Supervised on "**Development of Quadruped Robot"** in **2022**".

- **NGIRI- Ignite FYP Funding** for FYP Supervised on "**Three-Axis CNC Machine"** in **2022**".
- **NGIRI- Ignite FYP Funding** for FYP Supervised on "**Low-Cost Oxygen Concentrator"** in **2022**".
- **NEDAASC FYP Funding** for FYP Supervised on "**Oxygen Concentrator", 2022**.
- **NEDAASC FYP Funding** for FYP Supervised on "**Design of HMI interface for ventilator", 2021**.
- **NGIRI- Ignite FYP Funding** for FYP Supervised on "**Rover Design"** in **2020**".
- **NGIRI- Ignite FYP Funding** for FYP Supervised on "**Haptic Gaming Console"** in **2020**".
- **Co – Principal Investigator** under NCRA Research Grant, HEC/PC Pakistan for Developing a Social Robot to Protect Healthcare Professionals dealing in Contagious Diseases (**Funding Rs. 12.041 million**) **- 2020**.
- **Principal Investigator (PI) / Lab Director** of **Haptics, Human-Robotics and Condition Monitoring Lab** of National Center for Robotics and Automation (NCRA) by Planning Commission/ HEC Pakistan **[Funding of PKR 64.418 million]** for Haptics and Human-Robotics Lab at NEDUET out of total of Rs. 105 million approx) - **2018**.
- **NEDAASC FYP Funding** for FYP Supervised on "**5-DOF Robot for Domestic application", 2016**.
- **Worked as RA** in "The Haptic Teleoperation Control Setup funded the Defense Acquisition Program Administration and the Agency for Defense Development under the contract UD100004ID". (Under PI Prof. Jeha Ryu) **(2009-2013)**.
- **Worked as RA** in "The Global Frontier R&D Program on <Human-centered Interaction for Coexistence> funded by the National Research Foundation of Korea grant funded by the Korean Government (MSIP) (NRF-2012M3A6A3055698)." (Under PI Prof. Jeha Ryu) **(2009-2013)**.
- **Worked as RA** in "The Space Teleoperation funded by "Basic Research Projects in High-tech Industrial Technology" Project through a grant provided by GIST in 2012. (Under PI Prof. Jeha Ryu) **(2013-2016)**."
- **Worked as Expert** in "The Industrial fusion strategic technology development program funded By the Ministry of Trade, industry & Energy (MI, Korea) (10 0490 03) (Under PI Prof. Jeha Ryu)" **(2009-2016)**.
- **Magnetic Levitation** of steel ball via (Analog and Digital) control funded by PhD Supervisor Haptic Technology Research Centre, Korea **(2009-2013)**.
- **Research Assistant** at Haptic Technology Research Center (Under Prof. Jeha Ryu), GIST, Korea **(2009-2013)**.
- **Architect** of NEDUET Intellectual Property Wall with 50 prominent IPs, **2025**.
- **More than 150 undergraduate Thesis Projects Supervisor/Co-supervisor/Examiner** in (NEDUET and Other HEIs) on Power Systems, Controls, Haptics, Teleoperation, Robotics, Automation, Smart and Energy Systems.

HONORS & AWARDS

- **Two (02) HHRCM Lab Spin-Offs** RobAutoSTEM and Haptronica won the best Startups award with committed prize money (PKR 1 million) at the inaugural Sindh Innovative Startups Showcase **2025**.
- **NEDUET ranks "W" (always Top 05 out of 200^{+})** in both HEC ORIC and BIC Rankings under Director ORIC Tenure (**2022** to date).
- **RobAutoSTEM** is a BIC-NEDUET & NIC incubated Startup (Cohort-12), **2024**.
- **Haptronica** is a BIC-NEDUET Incubated Startup (since **2021)**.
- **Participant** of Leadership Development Program (courtesy collaboration of Sindh HEC & NIPA) **2025.**
- **Senior Member** IEEE since **2023**.
- **Recipient** of inaugural **Ali Suleman Habib Engineering Excellence Award 2022** by **House of Habib**.
- **Best Researcher Awards** from **NEDUET** for publishing three JCR papers (as 1st Author) in **2021**.
- **NEDAASC Award** for **Best Published Research** in **2021.**
- **Best Paper Award** on "Analytical Kinematic analysis of multi-DOF serial link robotic arm in 6th International Electrical Engineering Conference (IEEC **2021**).

- **NEDAASC Award** for **Best Teacher** in **2021.**
- **Inventor of NED-Ventilator** (ICU Ventilator) in Covid-19 Pandemic (**2020**).
- **Best Researcher Awards** from **NEDUET** for publishing three JCR papers (as 1st Author) in **2019.**
- **NEDAASC Award** for **Best Published Research** in **2019.**
- **1st Prize winner at DICE-Automotive** for FYP Supervised on "**Painting Robot"** in **2015**".
- **Approved** PhD Supervisor.
- **HEC Evaluator** for ORIC Recognition.
- **HEC Evaluator** for BIC Recognition.
- PEC Certified **Professional Engineer**.
- PEC Certified **OBE Evaluator**.
- **Korean Govt. Scholarship** for PhD.
- **NED University Scholarship** for PhD (FDP of HEC).
- Brain Korea 21st Century **(BK-21) Research Fund**.
- **NED University Scholarship** for ME.
- **NED University Merit Scholarship** for BE.
- **Staff Welfare Govt. Stipend** for Pre-Engg. /BE.

Membership of the Academics/ Research Committees / Technical Boards / Institutions

- **Member Steering Committee REF -** Research Excellence Framework under Pak-UK Education Gateway programme (by HEC, British Council, and UK REF) for Pakistani HEI/Universities.
- **Chairman Organizing Committee** inaugural **Sindh Innovative Startup Showcase 2025** at FPCCI Building Karachi (27th May 2025).
- **Member Organizing Committee** and **Academic Chief Organizer** of Sindh HEC Research and Technology Showcase **2022**, **2023**, **2024** & **2025**.
- **Member Selection Board** for Director ORIC UIT University, **2025.**
- **Convenor** Board of Review ORIC-NEDUET **2020-2022**.
- **Member/Custodian** ORIC Steering Committee **2022 to Date.**
- **Member** Steering Committee of the Center of Entrepreneurship & Innovation Development (CEID) at DHA Suffa University since **2024.**
- **Member FPCCI** (Federation of Pakistan Chambers of Commerce & Industry) Central Standing Committee on Bio-Economy since **2024.**
- **Member KATI** (Korangi Association of Trade and Industry) Startups and Incubation Standing Committee since **2023.**
- **Member Admission Committee** for PhD in Electrical Engineering **(2017 to date).**
- **Member Admission Committee** for Masters in Electrical Engineering **(2016 to date).**
- Pakistan Engineering Council Member (**PEC Member**) since **2005.**
- **Member Advisory Committee of PEC** for Local Manufacturing of Electro-medical Devices and Engineering Goods in Pakistan Engineering Council (since July **2020**).
- **Member & Secretary** of sub-sector Health under Consumer Electronics regarding National Electronics Policy (NEP) Ministry of Science and Technology (since April **2022**).
- **Member** Institution of Engineers Pakistan (IEP) since **2016.**

- **Local Council Member** Electrical (IEP Karachi Centre) **2019-21.**
- **Central Council Member** Electrical (IEP) **2019-21** & **2023-25.**
- **Member IEEE** (Institute of Electrical and Electronics Engineering (**2010-2012** & **2023 till date**).
- **Member BOS** (Board of Studies of Electrical Engineering) since **2016.**
- **Member BOF** (Board of Faculty of Electrical & Computer Engineering (ECE) since **2016.**
- **Observer** in Board of Faculty of Civil Engineering and Architecture (BoF – CEA) (Nominee of QEC) **2016.**
- **Observer** in Board of Faculty of Bio-Medical Engineering (BoF – BME) (Nominee of QEC) **2016.**

Computer Skills

Python, Matlab / SImulink, C/C++, OpenGL, Win32-APIs, OpenHaptics, Chai3D, Microcontrollers/ Arduino board/ ESPs, Raspberry-Pi Processor, STM32 controllers, Cube MX, PLC, Keil, Haptic SDKs, CubeMX, Nextion, Mathtype, SolidWorks, Endnote, PRISM.

Research & Innovation Publications

BOOKS

1) Syed Atif Naseem, **Riaz Uddin**, and Syed Wasif Naseem, "Formal Verification of FDIR in Smart Grid," LAP LAMBER Academic Publishing, **2018**.

PATENTS

2) **Riaz Uddin** "Electro-pneumatic Ventilator for Respiratory Patients" Granted at IPO Pakistan **2025**.
3) **Riaz Uddin**, Abdullah Haider Ali, Syed Murtaza Hasan Kazmi, Humayun Khan and Madiha Akbar "Smart Tactile Sensor Based Suture Force Attachment Measuring Instrument" Granted at IPO Pakistan **2025**.
4) "IoT-Enabled Digital Measuring Tape" Filed at IPO Pakistan **2023.**
5) "Digital Oxygen Analyzer" Filed at IPO Pakistan **2023.**
6) "Automated Air-Oxygen Blender" Filed at IPO Pakistan **2023**.

JOURNALS

JCR / Impact Factor / HEC Recognized

7) **Riaz Uddin**, Abdullah Haider Ali, Murtaza Hasan Kazmi and Madiha Akbar, "Rapid Design of an ICU Ventilator: An approach based on Smart Switching of Compressed Air-Oxygen," *IEEE Transactions on Biomedical Circuits and Systems,* vol. 18, no. 1, pp. 63-75, Feb., **2024 (*IF: 5.1*) (IEEE).**
8) Hashim Raza Khan, Insia Haura and **Riaz Uddin**, "RoboDoc: Smart Robot Design Dealing Contagious Patients for Essential Vitals amid COVID-19 Pandemic", *Sustainability*, **2023 *(IF: 3.889)* (MDPI).**
9) **Riaz Uddin,** Muhammad Affan, Asad Arfeen, Jeha Ryu and Saad Ahmed Qazi, "Low Frequency Transparency Analyses of Passivity Based Approaches for Two - Channel Teleoperation Architectures," *International Journal of Control, Automation and Systems*, vol. 20, pp: 220-231 **2022 *(IF: 2.7)* (Springer).**
10) Asad Arfeen, Zunair Ahmed Khan, **Riaz Uddin** and Usama Ahsan, "Toward accurate and intelligent detection of malware", Concurrency and Computation: Practice and Experience, pp: 1-19, **2021 *(IF: 1.536)*** (https://doi.org/10.1002/cpe.6652) **(Wiley)**
11) Muhammad Affan and **Riaz Uddin**, "Brain Emotional Learning and Adaptive Model Predictive Controller for Induction Motor Drive: A New Cascaded Vector Control Topology," *International Journal of Control, Automation and Systems*, pp. 1-14, **2021** *(**IF: 2.7**)*. (https://doi.org/10.1007/s12555-020-0306-z) **(Springer).**
12) Muhammad Ayaz Shirazi**, Riaz Uddin and** Min Young Kim**. "**Supervised Learning based Peripheral Vision System for Immersive Visual Experiences for Extended Display**"** *Applied Sciences*, vol. 11, no. 11, pp 1-18, **2021 *(IF: 2.7)* (MDPI).**

13) Marvi Murk, Asad Arfeen, and **Riaz Uddin**, "An Augmented K-means Clustering Approach for the Detection of DDoS Attacks," *International Journal of Network Management*, pp. 1-23, **2021** *(**IF: 1.833**)* (https://doi.org/10.1002/nem.2160). **(Wiley)**

14) **Riaz Uddin,** Abdurrahman Javid Shaikh, Hashim Raza Khan, Muhammad Ayaz Shirazi, Athar Rashid, Saad Ahmed Qazi, "Renewable Energy Perspectives of Pakistan and Turkey: Current analysis and Policy Recommendations," *Sustainability*, vol. 13, no. 6, pp 3349, 2021 ***(IF: 3.473)*** **(MDPI).**

15) **Riaz Uddin**, Hashim Raza Khan, Asad Arfeen, Muhammad Ayaz Shirazi, Athar Rashid, Umar Shahbaz Khan, "Energy Storage for Energy Security and Reliability through Renewable Energy Technologies: A new paradigm for Energy Policies in Turkey and Pakistan," *Sustainability*, vol. 13, no. 5, pp 2823, **2021** ***(IF: 3.473)*****. (MDPI)**

16) Syed Sheraz, Asad Arfeen, **Riaz Uddin**, and Umaima Haider. "An Analysis of Renewable Energy Usage by Mobile Data Network Operators." *Sustainability*, vol. 13, no. 4, pp 1886, **2021** *(**IF: 3.473**)*. **(MDPI)**.

17) **Riaz Uddin,** Ali Jamshaid and Asad Arfeen "Smart Design of Surgical Suture Attachment Force Measurement Setup Using Tactile Sensor," *IEEE Transactions on Instrumentation and Measurement*, vol. 70, pp. 1-12, **2021** *(**IF: 5.332**)*. **(IEEE)**

18) Marvi Murk, Asad Arfeen, and **Riaz Uddin**. "A generalized machine learning-based model for the detection of DDoS attacks." *International Journal of Network Management*, pp. 1-22, **2020** (DOI.org/10.1002/nem.2152) *(**IF: 1.289**)*. **(Wiley)**

19) Asad Arfeen and **Riaz Uddin**, "Quality of experience-based optimization of satellite Internet-at-sea using WAN accelerators," *International Journal of Satellite Communications and Networking*, (DOI: 10.1002/sat.1366), **2020** *(**IF: 1.424**)*. **(Wiley)**

20) **Riaz Uddin**, Ali S. Alghamdi, Muhammad Hammad Uddin, Ahmed Bilal Awan and Syed Atif Naseem, "Ethernet-based Fault Diagnosis and Control in Smart Grid: A stochastic analysis via Markovian Model Checking," *Journal of Electrical Engineering & Technology*, vol. 14, no. 6, pp 2289–2300, **2019** *(**IF: 0.715**)*. **(Springer)**

21) **Riaz Uddin**, Syed Atif Naseem, and Zafar Iqbal, "Formal Reliability Analysis of Power Line Communication Network-based Control in Smart Grid," *International Journal of Control, Automation and Systems*, vol. 17, no. 12, pp. 3047-3057, **2019** *(**IF: 1.921**)*. **(Springer)**

22) **Riaz Uddin**, Muhammad Hammad Saleem, and Jeha Ryu, "Parametric Sensitivity Analyses for Perceived Impedance in Haptic Teleoperation," *International Journal of Control, Automation and Systems*, vol. 17, no. 8, pp. 2083–2096, **2019** *(**IF: 1.921**)*. **(Springer)**

23) **Riaz Uddin** and Jeha Ryu, "Predictive control approaches for bilateral teleoperation," *Annual Reviews in Control*, vol. 42, pp. 82-99., **2016** *(**IF: 2.627**).* **(Elsevier)**

24) **Riaz Uddin**, Sangsoo Park and Jeha Ryu, "A predictive energy-bounding approach for Haptic teleoperation," *Mechatronics*, vol. 35, pp. 148-161, **2016**. *(**IF: 2.496**).* **(Elsevier)**

25) **Riaz Uddin**, Sangsoo Park, Sungjun Park, and Jeha Ryu, "Projected Predictive Energy-Bounding Approach for Multiple Degree of Freedom Haptic Teleoperation," *International Journal of Control and Autonomous Systems*, vol. 14, no. 6, pp. 1561-1571, **2016**. *(**IF: 1.687**).* **(Springer)**

26) Sangsoo Park, **Riaz Uddin**, and Jeha Ryu, "Stiffness-reflecting energy-bounding approach for improving transparency of delayed haptic interaction systems," *International Journal of Control, Automation and Systems*, vol. 14, pp. 835-844, **2016**. *(**IF: 1.687**).* **(Springer)**

ESCI /International/ HEC Recognized (HJRS)

27) Syed Atif Naseem, **Riaz Uddin**, Osman Hasan, and Diaa Gadelmavla, "Probabilistic Formal Verification of Communication Network-based Fault Detection, Isolation and Service Restoration System in Smart Grid," *Journal of Applied Logics - IfCoLoG Journal of Logics and their Applications*, vol. 5, no. 1, pp. 319-365, **2018** *(Master Journal List: Category-**ESCI**)* (http://collegepublications.co.uk/ifcolog/)

28) Abdullah Haider Ali, Syed Murtaza Hassan Kazmi, Humayun Khan, Hasnain Ali Poonja, Ayaz Shirazi and **Riaz Uddin**," Motor Parametric Calculations for Robot Locomotion," *Engineering Proceedings*, 20(1), 8, **2022 (MDPI).**

29) Haziq Iqbal, Muhammad Muhamid Ali Khan, Imtisal Ahmed, Huzaifa Yousuf, Humayun Khan and **Riaz Uddin**, "Design Procedure for Motor Selection for Custom-made Multi-axis CNC Machine.," *Engineering Proceedings*, 20(1), 26. **2022 (MDPI).**

30) Ahsan Sami, Marium Irfan, **Riaz Uddin,** Abdullah Haider Ali, Humayun Khan, Erij Khan, and Muhammad Sameer, "Oxygen Concentrator Design: Zeolite based Pressure Swing," *Engineering Proceedings*, 20(1), 29. **2022 (MDPI).**

31) Hasnain Ali Poonja, Muhammad Soleman Ali Shah, **Riaz Uddin,** Syed Murtaza Hassan Kazmi, Humayun Khan, Abdullah Haider Ali, and Muhammad Ayaz Shirazi, "Walking Algorithm using GAIT Analysis for 17-DOF Humanoid Robot," *Engineering Proceedings*, 20(1), 35. **2022 (MDPI).**

32) Shahzor Memon, **Riaz Uddin**, Imtiaz Hussain Kalwar, Kamran Kazi, "Observer Based Slip Measurement Technique of Dc Motor Mounted on Railway Wheel-Set," *University of Sindh Journal of Information and Communication Technology*, vol. 1, no. 1, pp. 56-60, **2017 (USJICT)**.

CONFERENCES

33) A. Woodcock, A. Halford, J. Brusey, H. Christenen, N. Marsden, and **Riaz Uddin**, "Addressing Gender Equality in AI and Robotics, with Special Reference to Pakistan and Developing Countries," in Distributed Computing and Artificial Intelligence 2024, G. Marreiros et al., Eds. Cham, Switzerland: Springer Nature, **2025**, pp. 113–123. (doi: 10.1007/978-3-031-80946-0_11.)

34) Abdul Rafay Khan, Muhammad Umer Baig, Muhammad Adil Haider, Ateeb Ahmed Qureshi, Humayun Khan, and **Riaz Uddin**, "Kinematic Modeling and Solution Techniques for Open-Chain Robotic Manipulators" presented at 10th International Electrical Engineering Conference (IEEC 2025), August **2025**, Karachi, Pakistan.

35) Muhammad Salah Uddin, Humayun Khan, Abdul Rehman Amin, Abdul Hannan Mujeeb, Syed Ali Ahmed, Shazma Shafqat, and **Riaz Uddin**, "SLAM Extension of STEM Robot for Commercial Enterprise", presented at 10th International Electrical Engineering Conference (IEEC 2025), August **2025**, Karachi, Pakistan.

36) Falaq Qureshi and **Riaz Uddin**, "Design of TeleHaptic Simulators for Various Control Architectures," in 4th International Conference on Computing, Mathematics and Engineering Technologies (iCoMET), Sukkur, Pakistan, pp.1-6, **2023**.

37) Humayun Khan and **Riaz Uddin**, "Optimized Network Solution for Bilateral Haptic Teleoperation: Improving Robustness over Long Distances", presented at 2nd International Conference on Emerging Trends in Electronic and Telecommunication Engineering (INTERACT 2023), Karachi, Pakistan, **2023**. (MDPI)

38) Abdullah Haider Ali, Syed Murtaza Hassan Kazmi and **Riaz Uddin**, "Tele-operated Robotic Manipulator based Contactless Heartbeat Measurement Mechanism", to be presented at 5th International Conference on Robotics and Automation in Industry - ICRAI 2023 (IEEE), Peshawar, Pakistan, **2023**.

39) Hasnain Ali Poonja, Muhammad Soleman Ali Shah, Syed Murtaza Hassan Kazmi, Muhammad Ayaz Shirazi, **Riaz Uddin** and Humayun Khan, "Walking Algorithm using GAIT Analysis for 17-DOF Humanoid Robot", presented at the 7th International Electrical Engineering Conference (IEEC 2022), Karachi, Pakistan, **2022**.

40) Syed Murtaza Hassan Kazmi, Abdullah Haider Ali, Humayun Khan, Husnain Ali Poonja, Ayaz Shirazi and **Riaz Uddin**, "Motor parametric calculation for robot locomotion", presented at the 7th International Electrical Engineering Conference (IEEC 2022), Karachi, Pakistan, **2022**.

41) Haziq Iqbal, Muhammad Muhamid Ali Khan, Imtisal Ahmed, Huzaifa Yousuf, Humayun Khan and **Riaz Uddin**, "Design Procedure for Motor Selection for Custom-made Multi-axis CNC Machine" presented at the 7th International Electrical Engineering Conference (IEEC 2022), Karachi, Pakistan, **2022**.

42) Ahsan Sami, Marium Irfan, Muhammad Sameer, Abdullah Haider Ali, Humayun Khan, **Riaz Uddin** and Erij Khan" Oxygen Concentrator Design: Zeolite based Pressure Swing", presented at the 7th International Electrical Engineering Conference (IEEC 2022), Karachi, Pakistan, **2022**.

43) Muhammad Affan, Muhammad Hasnain, Soleman, **Riaz Uddin** and Ayaz Sherazi, "Evaluation of ECG based recognition of cardiac abnormalities using Machine learning and Deep learning", *to be presented at 4th International Conference on Robotics and Automation in Industry - ICRAI 2021 (IEEE)*, Rawalpindi, Pakistan, **2021**.

44) Muhammad Affan, Humayun Khan, Subhan Ahmed, **Riaz Uddin** and Ayaz Sherazi "Haptic-Enabled Virtual Laboratory for Hands-on E-Learning: A Technology for and Beyond the Pandemic Era", *to be presented at 4th International Conference on Robotics and Automation in Industry - ICRAI 2021 (IEEE)*, Rawalpindi, Pakistan, **2021**.

45) Muhammad Ayaz Shirazi, Danish Khan, Muhammad Affan, Hasnain Ali Poonja, Muhammad Soleman Ali Shah and **Riaz Uddin**, "Active stereo vision-based 3D reconstruction for image guided surgery", *to be presented at 4th International Conference on Robotics and Automation in Industry - ICRAI 2021 (IEEE)*, Rawalpindi, Pakistan, **2021**.

46) Muhammad Affan, Muhammad Hassan, Faiz Ahmed, **Riaz Uddin** and Sadiq Rasheed, "Design of Tactile Feedback Control and Interfacing with Virtual Environment" *presented at the 6th International Electrical Engineering Conference (IEEC 2021)*, Karachi, Pakistan, **2021**.

47) Humayun Khan, Subhan Ahmed, Afsheen Bibi, Muhammad Affan, Sadiq Rasheed and **Riaz Uddin**, "Revamped Haptic Tele-Operation with Optimized Latency" *presented at the 6th International Electrical Engineering Conference (IEEC 2021)*, Karachi, Pakistan, **2021**.

48) Muhammad Saad Wasif, Abdullah Haider Ali, Syed Murtaza Hassan Kazmi, Mohammad Sulaiman Hasan Siddiqui and **Riaz Uddin**, "Design of Autonomous Mobile Manipulator for Medical Applications" *presented at the 6th International Electrical Engineering Conference (IEEC 2021)*, Karachi, Pakistan, **2021**.

49) Muhammad Affan, Ahmed Naim Ghaniwala, Muhammad Afaq Khan, Muhammad Maaz Akhtar, Abdullah Shaikh and **Riaz Uddin**, "Analytical Kinematic Analysis of Multi DOF Serial Link Robot Arm" *presented at the 6th International Electrical Engineering Conference (IEEC 2021)*, Karachi, Pakistan, **2021**.

50) Muhammad Affan, Junaid Jawaid, Syed Umaid Ahmed, Ali Isfand yar Manek and **Riaz Uddin**, "Solving Combinatorial Problems through Off-Policy Reinforcement Learning Methods," *presented at International Conference on Electrical, Communication, and Computer Engineering (ICECCE)*," pp. 284-288, Istanbul, Turkey, **2020**.

51) Syed Umaid Ahmed, **Riaz Uddin** and Muhammad Affan, "Intelligent Gadget for Accident Prevention: Smart Helmet" *presented at International Conference on Computing and Information Technology (ICCIT-1441)*, Tabuk Saudi Arabia, **2020**.

52) Muhammad Affan, Syed Umaid Ahmed and **Riaz Uddin**, "Pick-and-Place Task using Wheeled Mobile Manipulator - A Control Design Perspective," *presented at International Conference on Computing and Information Technology (ICCIT-1441)*, pp. 34-39, Tabuk Saudi Arabia, **2020**.

53) Syed Riaz Un Nabi Jafri, Anas Ahmed, Arisha Azam, Usama Bin Ihsan, Shahram Najam Syed and **Riaz Uddin**, "Assistive mobile robot for industrial and academic applications", *presented at 17th International Bhurban Conference on Applied Sciences and Techology (IBCAST)*, Quaid-e-Azam University, Pakistan, Jan. **2020**.

54) Taha Salim, Syed Riaz Un Nabi Jafri, Musab Ahmed, Arooba Jamal, Shariq Malik and **Riaz Uddin**, "Humanoid robot for educational and assistive application", *presented at 4th International Conference on Emerging Trends in Engineering, Sciences & Technology (ICEEST)*, Iqra University, Pakistan, Dec. **2019**.

55) Syed Umaid Ahmed, Arbaz Sabir, Talha Ashraf, Muhammad Ali Haider, Farha Perveen, Zafeer Farooqui, **Riaz Uddin**, "Energy Harvesting Through Files" *presented at 3rd International Conference of Innovative Computing (ICIC)*, Lahore, Pakistan, **2019**.

56) Hamza Khalid, Syed Umaid Ahmed and **Riaz Uddin**, "I-safe Technology for Smart and Updated Vehicles" *presented at International Conference on Computational Intelligence and Knowledge Economy (ICCIKE)*, Dubai UAE, **2019**.

57) Muhammad Affan, Syed Umaid Ahmed, Ali Isfand Yar Manek and **Riaz Uddin**, "Design and Implementation of the Washout Filter for the Steward-Gough Motion Platform" *presented at International Conference on Computational Intelligence and Knowledge Economy (ICCIKE)*, Amity University, Dubai UAE **2019**.

58) Asif A. Shaikh, M. Wasif, **Riaz Uddin**, "Excellence in Quality Education through Implementation of Strategic Framework and SMART KPIS in Higher Education Institute", *Proceedings of 174th ISERD International Conference*, New York, USA, 16th -17th October **2019**.

59) Asif A. Shaikh, M. Wasif, M. A. Bhutto, **Riaz Uddin**, "Risk based approach and Smart KPIs for the Quality Assurance in Higher Education Institutions", *presented in 2nd International Conference on Quality Assurance at Higher Education – PNQAHE*, April 23-25, **2019**, University of Education, Lahore.

60) M. A. Bhutto, Asif A. Shaikh, M. Wasif, **Riaz Uddin**, "Implementing Quality Assurance in Universities/HEIs by Ensuring and Promoting Stakeholders' Trust", *presented in INQAAHE 15th Biennial Conference 2019, March 25-28*, **2019**, Colombo - Sri Lanka.

61) SOA Chishti, Syed Atif Naseem, **Riaz Uddin**, MH Saleem, and SW Naseem, "Intelligent Control System to Identify Fault in Distribution Network of Smart Grid through Neural Network" *presented at the 4th International Electrical Engineering Conference (IEEC 2019)*, Karachi, Pakistan, **2019**.

62) Syed Atif Naseem, **Riaz Uddin**, Athar Rashid, SOA Chishti, SW Naseem, "Electric Vehicle (EV) a Sustainable Policy Recommendation for Zero GHG Emission in Pakistan" *presented at the 4th International Electrical Engineering Conference (IEEC 2019)*, Karachi, Pakistan, **2019**.

63) M. Wasif, A. A. Shaikh, S. H. Lodi, M. A. Bhutto, **Riaz Uddin**, "Implementation of Risk Management System to Improve the Quality of Higher Education Institutes", *ICHE 2018: 20th International Conference on Higher Education*, June 25-26, **2018**, Paris, France.

64) Syed Atif Naseem, Raheleh Eslampanah, and **Riaz Uddin**, "Probability estimation for the fault detection and isolation of pmu-based transmission line system of smart grid," *in 5th International Conference on Electrical and Electronic Engineering (ICEEE)*, pp. 284-288, Istanbul, Turkey, **2018**.

65) Syed Atif Naseem, Athar Rashid and **Riaz uddin**, Syed Wasif Naseem, "DC Motor Controlling and Modeling Through 3-Phasethyristor Based-Inverter" *presented at the 3rd International Electrical Engineering Conference (IEEC 2018)*, Karachi, Pakistan, **2018**.

66) Syed Atif Naseem, Athar Rashid and **Riaz Uddin**, Syed Wasif Naseem, "Future of Renewable Energy Technologies in Pakistan: A Policy Recommendation for Energy Storage Systems", *presented at the 3rd International Electrical Engineering Conference (IEEC 2018)*, Karachi, Pakistan, **2018**.

67) Muhammad Hammad Saleem and **Riaz Uddin**, "A Validity of Transparency Optimized 4-Channel Architecture in Bilateral Teleoperation", *presented at the 3rd International Electrical Engineering Conference (IEEC 2018)*, Karachi, Pakistan, **2018**.

68) Zuhaib Ali, Muhammad Shoaib and **Riaz Uddin**, "Supply Chain Management System: A Web-Application for Distributors", *presented at the 2nd International Electrical Engineering Conference*, Karachi, Pakistan, **2017**.

69) Afrah Ziauddin, Sabah Fatimah, Samra Ashraf, Iqbal Azeem and **Riaz Uddin**, "Wireless Building Automation Using ESP8266: An Energy Efficient Approach", *presented at the 2nd International Electrical Engineering Conference*, Karachi, Pakistan, **2017**.

70) Shahzor Memon and **Riaz Uddin**, "Detection and Estimation of Slip Effect on the Parameters of DC Motor Mounted on Commuter Rail using Kalman Filter: A Feasibility", *presented at the 2nd International Electrical Engineering Conference*, Karachi, Pakistan, **2017**.

71) Muhammad Aslam Bhutto, Muhammad Wasif, Asif Ahmed Shaikh, and **Riaz Uddin,** "Improving Quality of the Academic Programs in Universities/HEIs through Self-Assessment Mechanism", *1st National Conference of LUMHS on Quality Education (QCON'17)*, LUMS University, Hyderabad, March **2017**

72) **Riaz Uddin,** Muhmmad Ali Baig, and Jeha Ryu, "Network Delay Regulation for Sampled Data-Like Channels," *presented at the 1st International Electrical Engineering Congress*, Karachi, Pakistan, **2016**.

73) Barkha Parkash and **Riaz Uddin**, "Smart Home: An Energy Conservation Initiative," *presented at the 1st International Electrical Engineering Congress*, Karachi, Pakistan, **2016**.

74) Sungjun Park, **Riaz Uddin**, Sungchul Kang and Jeha Ryu, "Position and Stiffness Bounding Approach for Geometry Transparency in Time-delayed Teleoperations," *IEEE/RSJ International Conference on Intelligent Robots and Systems (**IROS**)*, Hamburg, Germany **2015***.*

75) Sangsoo Park**, Riaz Uddin** and Jeha Ryu, "Sensitivity Analysis of Detection and Discrimination Transparency for Haptic Teleoperation" *presented at the International Conference on Control, Automation and Systems (ICCAS)*, Busan, South Korea, **2015***.*

76) Sangsoo Park, Sungjun Park, **Riaz Uddin** and Jeha Ryu, "A Practical Teleoperation Using Model-based Predictive Energy-bounding Approach - Application to Wiping a Glass Window", *Proceedings of the Korean Society of Mechanical Engineers (KSME)*, 454-456, South Korea, **2014**.

77) **Riaz Uddin**, Sangsoo Park, Sangyun Baek and Jeha Ryu, "Model Predictive Energy-Bounding Approach for the perception of Multiple Degree-of-Freedom objects in bilateral teleoperation with online Geometry and Parameter of Remote Environment: A Feasibility Test," *International Conference on Control, Automation and Systems (ICCAS)*, Gwangju, South Korea, **2013***.*

78) **Riaz Uddin** and Jeha Ryu, "Preliminary Drawing Test via Predictive Energy Bounding Algorithm for time-delayed Bilateral Teleoperation," *presented at the International Conference on Control, Automation and Systems (ICCAS)*, Jeju, South Korea, **2012**.

79) **Riaz Uddin**, Sungjun Park and Jeha Ryu, "Stable and Transparent Predictive Energy-Bounding Algorithm for Bilateral Teleoperation with stiff environment," *Korea Robotic Society annual Conference (KRoC)*, Gangwondo, South Korea, **2012**.

80) **Riaz Uddin** and Jeha Ryu, "Transparency Improvement of EBA Using Smith Predictor for Bilateral Teleoperation with Variable Time Delays," *presented at the International Conference on Mechatronics and Information Technology, (ICMIT)*, Shenyang, China, **2011**.

Research Interests and Areas of Specialization

- Haptics and Teleoperation
- Control Systems (Linear/ Digital/ Non-linear/Discrete)
- Product Design as Import substation for Healthcare, Robotics and Power Applications
- Automation Systems
- Industrial IoT & Embedded Systems
- Mechatronic Systems
- Computer Communication Networks and Time delay Systems
- Robot Dynamics and Controls (Arms, Humanoid, Quadruped, Rover & UAVs/UGVs)
- Rehabilitation Robotics, Wearable Robotics, STEM, Computer Vision and Gait Control
- Electrical Power Systems Control, Renewable Systems and Smart GRID
- Smart and Energy Systems Product Design and Development

Post-graduate Thesis Completed/ Running & Supervisor/ Co-Supervisor/ Examiner

Master Thesis Supervised/ Co-Supervised/ Examiner

1) Title: "Controlled Utilization of Optimized Network Protocol for Network Jitter Compensation in Haptic Teleoperation Systems", **2025** (Supervisor of **Mr. Humayun Khan**)
2) Title: "Control & Design of Indigenous Ventilator Prototype Based on Compressed Air. Switching", **2023**. (Supervisor of **Ms. Madiha Akbar**)
3) Title: "Tele-Haptic Simulator for Bilateral Teleoperation Architectures", **2022**. (Supervisor of **Ms. Falaq Qureshi**)
4) Title "Validity of 4Channel Architecture in Haptic Teleoperation", **2018-19**. (Supervisor of **Dr. Hammad Saleem**)
5) Title "Application of Instantaneous Power Theory in Power System" **2018-19**. (Supervisor of **Mr. Hafiz Muhammad Furqan Nathani**)
6) Title "STEM Robot", **2019** (Co-Supervisor of **Hadi Mansoor**).
7) Title "Formal Verification of FDIR System in Smart Grid" Izmir University, Turkey **2018** (Co-supervisor/Examiner of **Mr. Atif Naseem**)
8) **External Examiner** of more than 20 Master's Thesis at NEDUET since 2016.

PhD Thesis Supervised/ Co-Supervised/ Examiner

1) **External Examiner** of 07 PhD Thesis (01 - BMD NEDUET 2022, 01 - BMD Zia Uddin University 2022, 03 ELD NEDUET, 02 EE PNEC NUST)
2) **04 PhD Scholars** under supervision (Mr. Nabeel Fayyaz (since **2021**), Mr. Muhammad Uzair (since **2021**), Ms. Eylia Abbas (since **2024**) & Mr. Muhammad Hammad Uddin (since **2025**).

Referee to Reputed Journals and Conferences

- **IEEE/ASME** Transactions on (TMecha, TIM, TRAM, TRAL, Sensors, TIE, TRO & more)
- **Elsevier** (ARC, Mechatronics, Rob. Aut. Sys, & more)
- **Springer** (IJCAS, JEET, JMST & more)
- **SAGE** (TIMC)
- **IET** (CTA)

- **MIT Press** (Presence)
- **Taylor & Francis** (IJSS, Adv. Robotics)
- **MDPI** (Energy, Sustainability, Sensor)
- **IEEE Conferences/Proceedings** (World Haptics, Euro Haptics, IROS, ICRA, AIMs, ACC, Haptics Sypm., ICRAI, ICEEE)
- **MDPI Conferences** (IEEC)
- **National** (IEEEP, IEP)

Reviewer of Policies and Research / Industrial / Academic Grants & Funding Proposals

- **National Policies** (Textile policy & Electronics Policy, IP & TT Policy)
- **International Policies** (Sensors-Sensing & Society Network (SENSS_N))
- **National Grants** (NRPU, BIC, ISF, PSF, NCRA – RF, SRSP)
- **International Grants** (Microsoft, NRF)

Teaching Assignments

Bachelors of Engg. Courses (Departments of EE, EL, ME, CIS, TC, IM & AU)

- Signals and Systems (Spring **2026***)
- Linear Control/ Feedback Control/ Machine Control Systems at NEDUET (**2006** to date)
- Data Structures and Algorithms at NEDUET (**2018** to **2023**)
- Electrical Power Transmission in Electrical Engg. Dept. of NED UET (**2008 to 2009**)

Masters of Engg. Courses (Departments of EE, ME, CE, TC, AU & CH)

- Linear Control/ Digital Control/ Nonlinear Control/ Process Control Systems (**2009** to date)
- Intellectual Property and Professional Ethics (Fall **2025**)

PhD in Engg. Courses (Departments of EE & EL)

- Robot Dynamics and Control (**2018** to **2023**)
- Adaptive Filters (**2018** to **2023**)
- Advanced Mathematics for Control Systems (**2017** to **2023**)
- Advanced Control Theory (**2017** to **2023**)

Other Engineering Courses (Indus University, Newport, BTech NEDUET)

- Electromagnetic Fields at NEDUET **2008**
- Digital Control Systems as TA (**2009 to 2010**) under Prof. Jeha Ryu, GIST, South Korea.
- Special Topics on Robotics and Micro-Mechatronics-II as TA (**2010 to 2012**) under Prof. Jeha Ryu, GIST, South Korea.

Other University and Departmental Assignments

- **Convener, Member and Focal Person** of Programme Committee for PEC Re-accreditation of BE Electrical Engineering at NED UET, 2015 and 2018.
- **Member of Committee** for admission in Master of Engineering Management and Master of Engineering Programmes in the Department of Electrical Engineering.
- **Class Advisor for BE** (**2008-2009** & **2014-2015**)

- **Final Year Project (FYP) coordinator** of Bachelors in Electrical Engg. **(2014-2015)**
- **Class Advisor/coordinator for TE** Electrical Engineering in NEDUET **(2008-2009)**
- **Lab In-charge** of Advance Machines Laboratory, Electrical Department NEDUET **(2005-2008)**
- **Exam's Factotum**/Invigilator **(2005-2009** & **2013-2017)**
- **Counselor** in Open-Day for fresh students **(2014-2016)**
- **Organizer** BE Annual function **(2005-2008)**

Invited Speaker/ Chair

- **ASEAN Guest Speaker** for APTEx'25, organized by the NCRA Secretariat NUST Islamabad on 23rd April, 2025**.**
- IoBM invited Director ORIC, NEDUET as a **guest speaker** on 30th May, **2023**.
- Iqra University invited PI-HHRCM Lab as **guest speaker** on 30th May, **2023**.
- **Session Chair** "Control Systems" at 4th International Conference on Robotics and Automation in Industry - ICRAI 2021 (IEEE) on 26th – 27th October, **2021** at NUST Rawalpindi.
- Invited **Guest Speaker** at DAAD funded 17th WFAR (workshop on Field Assistive Robotics) on the latest research on Haptics and Tele-robotics at the University of Lahore (17 to 19-10-2019).
- Invited **Speaker** at Sentec 2019 for a talk on Haptics, Human Robotics and Teleoperation Systems at NEDUET on Jan 16 (2019).
- Invited **Speaker** for a talk on the overview on Haptic Teleoperation in the 15th Workshop on Field & Assistive Robotics (WFAR-15) at LUMS - Lahore University of Management Sciences (School of Electrical Engineering), held on Friday Oct 12 (2018).
- Invited **Speaker** on "Advanced Robotics" at Bahria University, Karachi Pakistan (Dec 24th, 2016).
- Invited **Speaker** on "A Predictive Energy Bounding approach for Haptic Teleoperation: An Overview" at the 1st Electrical Engineering Congress (IEEC 2016) on May 13th and 14th Jointly organized by NED UET and Institute Engineers Pakistan, Karachi Pakistan (2016).
- Invited **Speaker** on "Teleoperation Systems" at SENTEC 2015, NED UET, Karachi, Pakistan (2015).
- Invited **Speaker** on "Robotics Applications" by Electronics Engineering Department at Indus Institute of Higher Education, Karachi Pakistan (2012).
- Technical **Session Chair** at IEECs (06), IEEEP(02), ICRAI (03) etc.

Participation / Organizer / Training / Evaluator / Certificates/ Courses/ Visits/ Demos

- **Trainer** on the training titled: "R&D Management & Official Institutions-Industry-University Relations" for the Senior/Middle Management via Dawlance Tech Pro programme arranged by NED Academy, **2025.**
- **Lead Trainer** at Interactive Session on NED University's Intellectual Property (IP) Licensing and Technology Transfer Regulations/Policy 30th Sept, **2024,** 04th June **2025,** 22nd August **2025**.
- **Demonstrated** Interprovincial Teleoperation between Karachi and Islamabad (during 5th VC Forum **2023**).
- **Organizer** "3-Day Cross-Lab Training on Current Trends in Haptics, Human-Robotics and Healthcare innovation" on 26th to 28th January, **2023**.
- **Organizer** "3-Day Cross-Lab Training on Immersive Haptics, Telerobotics and Inidgenous Healthcare innovation" on 5th to 7th October, **2022**.
- **Interprovincial Teleoperator** between Karachi and Peshawar (during 5th ICRAI, held in Peshawar 2023).
- **Attended** a two-day "International Advanced Training Course on Intellectual Property", at COMSTECH (in collaboration with the Inter-Islamic Network of Science and Technology Parks in Iran) on Wednesday, July 27-28, **2022**, at COMSTECH, Islamabad.

- **Passed with Distinction** in five-day Course conducted by Coventry university (UK) in collaboration with British council and HEC naming HEC-British Council "Research Capacity Building Programme in Pakistan" 24th -26th February **2022**, Karachi.
- **Participated in HESSA** - Higher Education System Strengthening Activity organized by University of UTAH, ALABAMA & USAID on 15th and 16th February, Islamabad **2022**.
- **Invited Participation** from HEC on Behalf of NED University to attract Sri Lankan Students to study in Pakistan on Scholarships (24th to 27th, March **2022**) Colombo Sri Lanka.
- **Program Evaluator**/ member of sub-committee at IIEE, Usman Institute of Technology etc (**2016** to date)
- **Participant** at HEC-Quality Assurance conference held in Islamabad (4 to 5-12-**2019**)
- **Participant** QAA-HEC Meeting at HEC regarding NOCs of Masters and PhD Programs of NEDUET, Islamabad (06-11-2019)
- **Participant** and presented in Update SIAB Meetings of NCRA at EME NUST Rawalpindi (23-10-**2019**)
- **Participant** and presented demos in stall at ICRAI Conference of NCRA at EME NUST Rawalpindi (21 to 22-10-**2019**)
- **Participant** and presented in 4th NSC Meetings of NCRA at EME NUST Rawalpindi (26-09-**2019**)
- **Participant** and presented in 3rd NSC Meetings of NCRA at EME NUST Rawalpindi (03-05-**2019**)
- **Participant** in APQN Conference at Colombo Srilanka (March 28-31, **2019**)
- **Participant** in 4th Workshop on Precision Agriculture and Forestry (WPAR-4) held on Saturday Oct 13 (**2018**), and attended courses on Kinematics and dynamics of mobile robots, and Deep learning at LUMS - Lahore University of Management Sciences (School of Electrical Engineering).
- **Deputy Chief Organizer** of 3rd, 4th, 5th and 6th Electrical Engineering Conference (IEEC **2018-21**).
- **Conference Chair** in the 2nd Electrical Engineering Conference (IEEC **2017**) on May 19th and 20th Jointly organized by NED UET and Institute Engineers Pakistan, Karachi Pakistan.
- **Organizer and Co-convener** in the 1st Electrical Engineering Congress (IEEC **2016**) on May 13th and 14th Jointly organized by NED UET and Institute Engineers Pakistan, Karachi Pakistan.
- **Student Volunteer** in **2009** Inter International Conference on Mechatronics and Information Technology, (ICMIT), Gwangju, South Korea.
- **Participant** in International Conference on "Hydel Power Development in Pakistan" following the visits of hydel projects such as TARBELA Power Station and Ghazi Barotha Power Station in UET Taxila, Taxila, Pakistan, **2008**.
- **Organizer** the seminar on "Engineering Review" NED UET Auditorium, **2008**.
- **Technical Visitor** of Power Stations as Bin Qasim Power Plant, HUBCO Power Plant & Defense Power Plant **2006**.
- **Course Certification** in Micro-controller (MCS-51 Family) from Star Engineering Training and Research Unit, **2004**.
- **Course Certification** in "English for Special Purpose" from Agha Khan University, May **2007**.

Other Activities & Accomplishment(s)

- Body Building (2005 Mr. Karachi Senior Class - 2nd Position)
- Winner of 2008 faculty badminton-doubles in NEDUET.
- Cricket (Allrounder) /Badminton/Swimming/Billiard/Cooking etc.
- Reading Newspaper