

# Dr. RIAZ UDDIN

## Office Address:

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<http://ncra.org.pk/>

[https://eed.neduet.edu.pk/sites/default/files/Faculty\\_CVs/Dr.%20RIAZ%20UDDIN.pdf](https://eed.neduet.edu.pk/sites/default/files/Faculty_CVs/Dr.%20RIAZ%20UDDIN.pdf)



## 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 the co-inventor of the tactile sensing based suture attachment force measurement device. He is also a very active reviewer of reputed journals from IEEE, Elsevier and Springer. He is currently working as an Assistant 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 undergraduate/ Masters/ PhD courses majorly related to Controls, Robotics, Mechatronics, and Power Systems Control along with supervising Masters and PhD students. In addition, he is also working 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, -2019 & -2020), respectively). 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 will focus on the design and development of Tele-manipulation Robots for the disaster management applications and fabrication of STEM-based Education/Assistive Robots.

**He** (along with his team) recently invented a Smart Suture Force Measurement device that is **accepted for publication in IEEE Transactions on Instrumentation and Measurement (Top Journal worldwide** in general instrumentation and measurements).

**He** (along with his team) recently **designed** low-cost ventilator (**NED-Ventilator**) in this **COVID-19 pandemic**, whose initial progress was covered by International & multiple Local Media such **BBC world, BBC Urdu, Dunya News, 92 News, 24 News, GTV, Hum TV** along with official social media platforms 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](http://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

### Current:

NED University of Engg. & Tech, (2008 - Till date)

- **Assistant Professor, Teaching**
- **Deputy Director (QEC) / Deputy Management Representative (DMR-III ISO), (Dec 2016 – Till date)**
- **Principal Investigator (PI) / Lab Director of Haptics, Human-Robotics and Condition Monitoring Lab**

### Past:

NED University of Engg. & Tech, (2005 - 2008)

- Lecturer, Teaching

Indus Institute of Higher Education (Visiting Faculty - 2005)

- Lecturer, Teaching

Karam Ceramics Ltd. (2005)

- Junior Assistant Manager, Operations

Siemens Pakistan Engineering Co. Ltd

- Internee, Power House of Electrical Pneumatic Networks Department (2004)

## Honors, Scholarships and Awards

- 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 Rs. 48.967 Million for Haptics and Human-Robotics Lab at NEDUET out of total of Rs. 90.674 Million).
- Supervised FYP on "**Rover Design, which won NGIRI- Ignite FYP Funding 2019-20**".
- Supervised FYP on "**Haptic Gaming Console, which won NGIRI- Ignite FYP Funding 2019-20**".
- Supervised FYP on "**Painting Robot, which won 1<sup>st</sup> Prize at DICE-Automotive 2015**".
- Supervised FYP on "**5-DOF Robot for Domestic application, which won NEDAASC FYP Funding 2016**".
- HEC (Pakistan) Approved PhD Supervisor.
- PEC Certified Professional Engineer.
- PEC Certified OBE Evaluator.
- Korean Govt. Scholarship for PhD.
- NED University Scholarship for PhD.
- Brain Korea 21<sup>st</sup> 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 Academic/ Technical Boards/Institutions

- Pakistan Engineering Council Member (PEC)
- Institution of Engineers Pakistan (IEP)
- Local Council Member Electrical (IEP Karachi Centre) (between 20
- Institute of Electrical and Electronics Engineering IEEE (between 2010-2012)
- Board of Studies of Electrical Engineering (BoS)
- Board of Faculty of Electrical & Computer Engineering (BoF - ECE)
- Observer in Board of Faculty of Civil Engineering and Architecture (BoF – CEA) (Nominee of QEC)
- Observer in Board of Faculty of Bio-Medical Engineering (BoF – BME) (Nominee of QEC)
- Member IEEE (Institute of Electrical and Electronics Engineers) (from 2010-2011)

## Computer Skills

- Matlab / SIMulink, C/C++, OpenGL, Win32-APIs, OpenHaptics, Microcontrollers/Arduino board etc., PLC
- MS-Office, Mathtype, Endnote.

## Research Publications

### BOOKS

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

### JOURNALS

#### ISI/Impact Factor/Indexed

- 1) **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, **2020 (IF: 3.658). (Accepted) (IEEE)**
- 2) A. 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: 1.652). (Wiley)**
- 3) **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)**
- 4) **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: 2.181). (Springer)**
- 5) **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: 2.173). (Springer)**
- 6) Syed Atif Naseem, **Riaz Uddin**, Osman Hasan, and Daa 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/>)

- 7) **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**)
- 8) **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**)
- 9) **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**)
- 10) 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**)

#### **Non-ISI/NoN-Indexed/Non-Impact Factor/Local**

- 11) 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**.

#### **CONFERENCES**

- 12) Syed Umaid Ahmed, Muhammad Affan and **Riaz Uddin**, "Intelligent Gadget for Accident Prevention: Smart Helmet" presented at "International Conference on Computing and Information Technology (ICCIT-1441), University of Tabuk Saudi Arabia, **2020**. (**Accepted**)
- 13) 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 Technology (IBCAST), Quaid-e-Azam University, Pakistan, Jan. **2020**.
- 14) 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**.
- 15) 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**.
- 16) 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), Amity University, Dubai **2019**.
- 17) 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 **2019**.
- 18) 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**.
- 19) 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.

- 20) 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.
- 21) 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**.
- 22) 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**.
- 23) 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.
- 24) 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**.
- 25) Syed Atif Naseem, Athar Rashid and **Riaz uddin**, Syed Wasif Naseem, "Dc Motor Controlling and Modeling Through 3-Phase thyristor Based-Inverter" presented at the 3rd International Electrical Engineering Conference (IEEC 2018), Karachi, Pakistan, **2018**.
- 26) 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**.
- 27) 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**.
- 28) 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**.
- 29) 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**.
- 30) 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**.
- 31) 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**
- 32) **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**.
- 33) Barkha Parkash and **Riaz Uddin**, "Smart Home: An Energy Conservation Initiative," presented at the 1st International Electrical Engineering Congress, Karachi, Pakistan, **2016**.
- 34) 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**.
- 35) 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**.

- 36) 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, 454-456, South Korea, **2014**.
- 37) **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**.
- 38) **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**.
- 39) **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**.
- 40) **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

- Haptics and Teleoperation
- Control Systems (Linear/ Non-linear/Discrete)
- Automation
- Time delay Systems
- Robot Dynamics and Controls
- Unmanned Ground and aerial Vehicle Dynamics
- Electrical Power Systems Control
- Smart and Energy Systems

## Completed Thesis & Supervisor/Co-Supervisor/Jury Member

- Supervisor of Muhmmad Hammad Saleem (Masters Student, Dept. of Electrical Engg. NED UET)  
Title: "Validity of 4Channel Architecture in Haptic Teleoperation"
- Co-supervisor and Jury Member of Syed Atif Naseem (Master Student, Dept. of Electronic and Electrical Engg. Izmir University, Turkey)  
Title: "Formal Verification of FDIR System in Smart Grid"

## Referee to Reputed Journals and Conferences (Direct / Indirect)

- Annual Reviews in Control (From Elsevier)
- IEEE Transaction on Industrial Electronics
- Mechatronics (From Elsevier)
- International Journal of Controls and Autonomous Systems
- IEEE Transaction of Robotics

- IEEE/ASME Transactions on Mechatronics
- IET Control Theory and Applications
- Presence
- International Journal of Systems Science
- Journal of Mechanical Science and Technology
- Advanced Robotics
- IEEE World Haptic Conference (WHC)
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)
- International Electrical Engineering Congress (IEEC)
- And more
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## Teaching Assignments

- Feedback/Machine Control systems to the Undergraduate Students of Electrical, Mechanical, Automotive, Telecommunication and Electronics Department of NED UET (2013~to date)
- Data Structures and Algorithms (in SE (EE) Fall 2018)
- Linear Control Systems (in M.Engg 2017)
- Robot Dynamics and Control (in PhD 2018)
- Adaptive Filters (in PhD 2018)
- Advanced Mathematics for Control Systems (in PhD 2017)
- Advanced Control Theory (in PhD 2017)
- Digital Control System in MEngg. Electrical and MEngg. Medical of NED UET (2015, 2017 & 2019)
- Process Control in ME Chemical Engg. Department of NED UET (2009 and 2014)
- Automotive Control in ME Automotive Engg. Department of NED UET (2014)
- Linear Control systems in Electrical Engg. Dept. of NED UET (2007-2009)
- Electrical Power Transmission in Electrical Engg. Dept. of NED UET (2008-2009)
- Linear Control systems in Computer Engg. Dept. of NED UET (2007)
- Machine Control Systems in Mechanical Engg. Dept. of NED UET (2006)
- Machine Control Systems in Industrial and Manufacturing Engg. Dept. of NED UET (2006)
- Electromagnetic Fields in B.Tech Electrical Engg. Dept. of NED UET (2008)
- Teaching Assistant for Digital Control Systems (fall 2009, fall 2010) under Prof. Jaha Ryu, GIST, Korea.
- Teaching Assistant for Special Topics on Robotics and Micro-Mechatronics-II (Spring 2010) under Prof. Jaha Ryu, GIST, Korea.

## Research and Academic Projects

- Won Rs. 48.9 million Grant as PI of Haptics, Human-Robotics and Condition Monitoring Lab affiliated Lab of National Center for Robotics and Automation (NCRA) at NEDUET from Planning Commission/HEC Pakistan (Running)
- Won Grant for FYP on the design of Robotic Manipulator from NEDAASC, USA.
- Won 1<sup>st</sup> prize for FYP on "Design of Painting Robot" from DICE-Automotive, 2015.
- Predictive Teleoperation Control funded by Defense Acquisition Program Administration and the Agency for Defense Development (ADD), Korea (Under PI Prof. Jeha Ryu).
- Human-centered Interaction for Coexistence by National Research Foundation of Korea grant funded by the Korean Government. (Under PI Prof. Jeha Ryu).
- 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).
- Magnetic Levitation of steel ball via (Analog and Digital) control funded by PhD Supervisor Haptic Technology Research Centre, Korea.
- Research Assistant at Haptic Technology Research Center (Under Prof. Jeha Ryu), GIST, Korea.
- More than 50 undergraduate Thesis Projects Advisor in (NED UET) on Power Systems, Controls and Automation.

### Other Official Assignments

- Deputy Management Representative ISO (DMR-III) / Deputy Director QEC (2016 till date). Where contributed mainly for PhD and Masters Review for QAA HEC and NOCs of Masters/PhD Programmes acquiring from HEC.
- Convener and Focal Person of Programme Committee for PEC Re-accreditation of BE Electrical Engineering at NED UET, 2015 and 2018.
- Member at Programme Committee for PEC Re-accreditation of BE Electrical Engineering at NED UET.
- 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 and then 2014~2015)
- Final year project (FYP) coordinator of Bachelors in Electrical Engg. (2014~2015)
- Class Advisor/coordinator for Third Year Electrical Engineering in NED UET (2008-2009)
- Lab In-charge of Advance Machines Laboratory, Electrical Department NED UET (2005-2008)
- BE Project Internal Advisor
- Exam's Factotum/Invigilator
- Counselor in Open-Day for fresh students
- BE Annual function Organizer

### Invited Speaker

- 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 24<sup>th</sup>, 2016).
- Invited Speaker on "A Predictive Energy Bounding approach for Haptic Teleoperation: An Overview" at the 1<sup>st</sup> Electrical Engineering Congress (IEEC 2016) on May 13<sup>th</sup> and 14<sup>th</sup> 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).

## **Participation / Organizer / Training / Certificates/ Courses**

- Participated at HEC-Quality conference held in Islamabad (4 to 5-12-2019)
- Attended QAA-HEC Meeting at HEC regarding NOCs of Masters and PhD Programs of NEDUET, Islamabad (06-11-2019)
- 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, Lahore (17to 19-10-2019)
- Participated and presented in Update SIAB Meetings of NCRA at EME NUST Rawalpindi (23-10-2019)
- Participated and presented demos in stall at ICRAI Conference of NCRA at EME NUST Rawalpindi (21 to 22-10-2019)
- Participated and presented in 4th NSC Meetings of NCRA at EME NUST Rawalpindi (26-09-2019)
- Participated and presented in 3rd NSC Meetings of NCRA at EME NUST Rawalpindi (03-05-2019)
- Participated in APQN Conference at Colombo Srilanka (March 28-31, 2019)
- Invited to participated 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 3<sup>rd</sup> Electrical Engineering Conference (IEEC 2018) on Feb 09<sup>th</sup> and 10<sup>th</sup>, 2018.
- Conference Chair in the 2<sup>nd</sup> Electrical Engineering Conference (IEEC 2017) on May 19<sup>th</sup> and 20<sup>th</sup> Jointly organized by NED UET and Institute Engineers Pakistan, Karachi Pakistan.
- Organizer and Co-convener in the 1<sup>st</sup> Electrical Engineering Congress (IEEC 2016) on May 13<sup>th</sup> and 14<sup>th</sup> 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.
- Participated 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.
- Organized the seminar on "Engineering Review" NED UET Auditorium, 2008.
- Technical Visits Power Stations as Bin Qasim Power Plant, HUBCO Power Plant and Defense Power Plant.
- Course in Micro-controller (MCS-51 Family) from Star Engineering Training and Research Unit, 2004.
- Course in "English for Special Purpose" from Agha Khan University, May 2007.

## **Other Activities**

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