SYED MURTAZA HASSAN KAZMI

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SUMMARY

I am a research enthusiast and have a strong knowledge of design engineering, software interfacing, controls and robotics. My current research interest includes sensors, smart energy and mechatronics systems, Embedded systems, robotic manipulators, Biped robots, Haptic-Robot teleoperation such as tele-operation of Industrial Robotic arm using haptic device, Health Care devices such as Mechanical Ventilator and attachment force measurement surgical suture.

SKILLS & ABILITIES

Engineering Software Skills: MAYA Autodesk, KIEL, Cube MX, Nextion, Matlab, ETAP, DIALux, Solidworks, CoppeliaSim, AutoCAD, and Easy EDA.
Programming Language Skills: MATLAB, PHYTON, C/C++ and RUST
Microcontrollers Skills: Arduino UNO/MEGA, STM32F discovery and Raspberry pi

EDUCATION

2017-21	ELECTRICAL ENGINEERING, Bachelor of Engineering, Karachi, NED University of Engineering and Technology	**CGPA 3.56/4.**
2015-17	**F.SC PRE-ENGINEERING**, Karachi, Bahria College Karsaz.	**77.55%**
2013- 15	**MATRIC SCIENCE**, Karachi, St. Paul English High School	**80.11%**

WORK EXPERIENCE

- **Research Associate at Haptic Human Robotics and Condition Monitoring Lab (Affiliated with National Centre of Robotics and Automation-NED-UET) –** Currently working as a research associate in the domain of Tele-Robotics, Health care devices, Robotic manipulators and STEM.
- **Research Assistant at Haptic Human Robotics and Condition Monitoring Lab (Affiliated with National Centre of robotics and automation-NED UET) –** worked as a research assistant in the domain of Robotics, Control and Automation. (December 2021-July 2022)
- **Engineering Intern at Pak Electron Limited –** Intern in Inspection and Quality Control Department at PEL, learnt about the procedure followed for the Design of the Transformer, Oil and Electrical testing of the Transformers and Researched on the effect of Humidity on impulse testing of Transformer. (June-July 2021)
- **Intern at ZIMCO International Co-operation -** Remote Internship Program, Learnt about Electrical panels and its components, Energy management, IIOT, HMI and IOT Surge analysis. (August-September 2021)

PROJECTS AND CONFERENCE

- **Zipper Pull Tester Device –** Designed and developed a lead screw mechanism-based Zipper pull tester machine using Force Sensitive resistor
- **DENSO-OMNI TELEOPERATION –** "Currently working on DENSO robotic arm teleoperation with haptic OMNI Touch device for medical applications in LAN (Local Area Network) and WAN (Wide Area Network)" working as a Research Associate at Haptic Human Robotics and Condition Monitoring Lab.
- **FALCON-HAPTIC GAMING –** "Design and development of a gaming environment for haptically controlling the user interface by Novint Falcon Haptic device and studying its haptic feedback" working as a Research Associate at Haptic Human Robotics and Condition Monitoring Lab.
- **SURGICAL SUTURE TESTING DEVICE –** "Prototype Design and development of smart suture attachment force measurement device" worked as a Research Assistant at Haptic Human Robotics and Condition Monitoring Lab.
- **NED VENTILATOR –** "Prototype of a low-cost Design and development of Ventilator design based on controlled-compressed air/oxygen switching", worked as a Research Assistant at Haptic Human Robotics and Condition Monitoring Lab.
- **FINAL YEAR PROJECT** – "To Design a Mobile Manipulator for Remote Ultrasound Activity" - Associated with Haptic, Human Robotics and Conditional Monitoring Lab
- **6th IEEC CONFERENCE PAPER** – "Design of Autonomous Mobile Manipulator for Medical Applications" - Published in 6th International Electrical Engineering Conference held in NED UET, April 2021

INTERNATIONAL JOURNAL PUBLICATION

- Riaz Uddin, Abdullah Haider Ali, **Syed Murtaza Hassan Kazmi** and Madiha Akbar, "Rapid Design of an ICU Ventilator: An approach based on Smart Switching of Compressed Air-Oxygen", International Journal of Bio-medical circuits and systems- IBCAS **(IEEE)** (Submitted)

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

- Abdullah Haider Ali, **Syed Murtaza Hassan Kazmi**, Hasnain Ali Poonja, Humayun Khan, Muhammad Ayaz Shirazi, and Riaz Uddin. "Motor Parametric Calculations for Robot Locomotion." *Engineering Proceedings* 20, no. 1 (2022): 8. **(MDPI)**

- 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 Humanoid Robot." *Engineering Proceedings* 20, no. 1 (2022): 35. **(MDPI)**

PROJECT SUPERVISION

- **FYDP (2022-ongoing)** – **"Smart Social Interactive Robot for Commercial enterprise",** Assigned as an external supervisor of the project along with Dr. Riaz Uddin, associated with Haptic Human Robotic and Condition Monitoring Lab.

- **FYDP (2021-2022)** — "**Smart Design of 5-axis CNC Machine for Industrial Application",** Assigned as an external supervisor of the project along with Dr. Riaz Uddin, associated with Haptic Human Robotics and Condition Monitoring Lab.

TRAINER AND VOLUNTEER WORK

- **Lead Trainer for "Immersive Haptics, Tele-Robotics and Indigenous Healthcare Innovations Training"** – Taught as a lead trainer on "Industrial Tele-Robotics control and Automation", associated with Haptic Human Robotics and Condition Monitoring Lab.
- **Deputy Chief Organizer** – Research and Technology Showcase 2022 organized by Sindh Higher Education Commission in collaboration with NED University of Engineering and Technology, Expo Centre Karachi, 2022
- **Poster Presenter** – 6th International Electrical Engineering Conference, NED 2021
- **Member Logistics** in NED Green Society, 2019 to 2020.
- **Member Logistics** in Artificial Intelligence Club, 2020 to 2021.
- **Volunteer** in IET Present Around The World Competition (PATW) 2019 by IET Karachi.

TEACHING ASSISTANT

- Teaching assistant along with Dr. Riaz Uddin in "Data Structure and Algorithms".
- Teaching assistant along with Dr. Riaz Uddin in "Feedback Control Systems".

CERTIFICATIONS

- Workshop on Understanding the Distribution System of Karachi, Pakistan IEEE PES NEDUET, 2021
- Volunteered in IET Present Around The World Competition (PATW) 2019 by IET Karachi.
- Lighting System Design Workshop Using DAILux 4.13.
- Android App Development Course, CCEE NED UET, 2019

REFERENCES

- Dr. Riaz Uddin, PI NCRA-NED and Associate Professor, NED UET (riazuddin@neduet.edu.pk)
- Muhammad Uzair Khan, Lecturer, NED UET (uzairkhan@neduet.edu.pk)