Syed Riaz un Nabi Jafri

Qualification: Post doctorate (Nederland), Doctorate (Italy)
Experience: 22 years
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OBJECTIVE

To contribute for the educational development of the students and to share the state of the art research findings with in scientific community to enhance common living standards.

EDUCATION

Post doctorate (on competitive researcher job in 3D Indoor Modelling) 2017
Department of Earth Observation Sciences (EOS)
ITC - University of Twente
Enschede-Nederland

PhD (on merit scholarship in Mobile Robotics) 2013
Department of Pattern Analysis and Computer Vision (PAVIS)
Italian Institute of Technology-University of Genova
Genova-Italy

Master of Engineering (Industrial Electronics) 2007
Department of Electronic Engineering
NED University of Engineering & Technology, Karachi, Pakistan

Bachelor of Engineering (Industrial Electronics) 2003
Institute of Industrial Electronics Engineering P.C.S.I.R, Karachi, Pakistan
(Affiliated with NED University of Engineering & Technology, Karachi)

EXPERIENCE

Teaching Experience Summary

Associate Professor (since Oct. 2025) in Department of Electronic Engineering, NEDUET.
Assistant Professor (2008 to Sep. 2025) in Department of Electronic Engineering, NEDUET, Karachi, Pakistan

Graduate Level Courses:

Robotics and its Applications of Industrial Electronics: Transformations, Kinematics, Robotic sensors and actuators, Signal conditioning, DH parameterization, Trajectory planning
Industrial Control Systems: Physical and chemical processes, Process and instrumentation diagrams, Industrial sensing, PLC based discrete controlling, PID control strategy, Pole placement control strategy
Sensors and Systems: Proprioceptive sensors, Exteroceptive sensors, Industrial process sensor and systems
Mechatronics: Mechanical components, Electronic components, System integration, controlling strategy

Under-Graduate Level Courses:

Robotics: History of automation, Robotic components, Types of robots, Kinematics, Localization, Mapping
Industrial Electronics: Industrial sensors, actuators, embedded controllers, PLC architecture, PLC Ladder logic, PLC simulation and real testing on Simatic S7-300
Analog Integrated Circuits: OP-Amp applications, Amplifiers, Signal Conditioning, Filters
Basic Electronics: Diode theory and applications, rectifiers, BJT and MOS theory, switching and amplification applications

Final Year Engineering Project Supervisor: Supervising various students groups each year

PGD and CCEE Courses:

Basics of Robotics: Kinematics, Robotic sensors and actuators, Robot operating systems, rover simulations

Application of Robotics in Mechatronics: Mechatronic components, integration techniques, serial manipulators, rovers, transformation, interfacing techniques

Research Experience Summary

R&D Experience in NESCOM (Strategic Public Sector Organization, from 2003 to 2007):

Embedded controller applications, vehicle navigation using GPS-INS based solution, Instrumentation

Competitive Research Grants Experience in NEDUET (since 2017):

Principal Investigator of HEC-NRPU-6061 project for Indoor Modelling (Rs. 2.8 million funded, finished in 2020), lead a team of two engineers and one MS student along with Co-PI to accomplish the project.

Principal Investigator of HEC-TDF-02057 project for Outdoor Building Scanning and Mapping (Rs. 13.7 million funded, finished in 2022), lead a team of four engineers and two MS students along with Co-PI to accomplish the project. The industrial collaboration and licensing are successfully continuing.

Co-Principal Investigator of HEC-NRPU project for 3D industrial objects scanning (Rs. 6.1 million funded, finished in 2023)

Co-Principal Investigator of HEC-NCGSA project for Magnetometer Modelling (Rs. 11 million funded, finished in 2024)

PhD and ME Research Supervisions in NEDUET (since 2017):

PhD research supervision: One scholar has completed PhD in 2022 and two scholars are doing PhD

ME research supervision: More than ten ME students have completed ME research work

Experience and Familiarity with Various Tools and Applications:

Robotics project developments using ROS, Gazebo and MATLAB

Electronic tools usage, PLC hands-on experience on Siemens S7, OrCAD and NI Multisim

Academic Administrative Responsibilities

PhD Coordinator work (from 2018 to 2021): Performed the responsibilities in the concerned department

Class Advisory work (from 2017 to 2021): Performed the responsibilities for the students of TE-EL

Internship Coordinator (since 2020): Performing the responsibilities for the concerned department

BOS Member (since 2018): Performing the assigned duties and participating to look after departmental matters and OBE related tasks

PUBLICATIONS

Articles with first PhD Scholar (PhD completed)

- **Syed Riaz un Nabi Jari**, S. Hussain, A. Ahmed, S. Rizvi, K. Kazmi and J. Iqbal, "Compact rover surveying and laser scanning for BIM development", PLOS One (IF: 3.7, SCIE), Vol. 19(3), March 2024, ISSN: 1932-6203.
- A. Memon, **Syed Riaz un Nabi Jari** and S. Ali, "A rover team based 3D map building using low cost 2D laser scanners", IEEE ACCESS (IF: 3.1, SCIE), January 2022, Vol. 10, ISSN: 2169-3536.

Articles with second PhD Scholar (PhD completed)

- S. Shamim and **Syed Riaz un Nabi Jari**, "Enhanced Vehicle Localization with Low-Cost Sensor Fusion for 3D Urban Mapping", PLOS One (IF: 3.7), Vol. 20(5), ISSN: 1932-6203, May 2025.
- **Syed Riaz un Nabi Jari**, S. Shamim, S. Faraz, A. Ahmed, S. Yasir and J. Iqbal, "Characterization and calibration of multiple 2D laser scanners", PLOS One (IF: 3.7, SCIE), Vol. 17(7), July 2022, ISSN: 1932-6203.

Articles with ME students

- **Syed Riaz un Nabi Jari**, S. Hashmi, A. Shabbir, S. Mohsan, M. Hadjouni and S. Mostafa, "Parametric classification of furniture from point cloud developed using low cost trolley based laser scanning system", IEEE ACCESS (IF:3.1, SCIE), June 2023, ISSN: 2169-3536.
- **Syed Riaz un Nabi Jari**, T. Rehman, A. Ahmed, M. Siddiqi, A. Hayat and T. Saeed, "Slum terrain mapping using low cost 2D laser scanners", Elektronika IR Elektrotechnika (IF:1.1, SCIE), Vol. 29(2) , April 2023, ISSN: 1392-1215.

Some Selected Articles

- **Syed Riaz un Nabi Jari**, M. Siddiqui, F. Akbar, A. Basit, S. Shamim and S. Ahmed, "Development of a low cost stationary laser scanning system for generation of building information models", Elektronika IR Elektrotechnika (IF:1.1, SCIE), Vol. 28 (6), 2022, ISSN: 1392-1215.
- **Syed Riaz un Nabi Jari**, Y. Rehman, S. Faraz, H. Amjad, M. Sultana and S. Rashid, "Development of georeferenced 3D point cloud in GPS denied environments using backpack laser scanning system", Elektronika IR Elektrotechnika (IF:1.1, SCIE), Vol. 27 (6), 2021, ISSN: 1392-1215.
- S. Faraz, **Syed Riaz un Nabi Jari**, H. Khan, W. Shah, N. Alvi, Q. Wahab and O. Nur, "Effect of annealing temperature on the interface state density of n-ZnO nanorod/p-Si heterojunction diodes", Open Physics (SCIE), Vol. 19, 2021, ISSN: 2391-5471.
- S. Faraz, **Syed Riaz un Nabi Jari**, Z. Tajvar, N. Alvi, Q. Wahab and O. Nur, "Effect of annealing atmosphere on the diode behavior of ZnO/Si heterojunction", Elektronika IR Elektrotechnika (IF:1.1, SCIE), Vol. 27 (4), 2021, ISSN: 1392-1215.
- **Syed Riaz un Nabi Jari**, A. Jamshaid, S. Jafri and J. Iqbal, "Estimation of surgical needle insertion force using Kalman Filter", Journal of Electrical Engineering and Technology (IF:1.4, SCIE), Vol. 15(2), 2020, ISSN: 1975-0102.
- M. Peter, **Syed Riaz un Nabi Jafri** and G. Vosselman, "Line segmentation of 2D laser scanner point clouds for indoor slam based on a range of residuals", ISPRS Ann. Photogramm. Remote Sens. Spatial Inf. Sci., IV-2/W4, 363-369, 2017.
- **S. Riaz,** J. Iqbal, H. Khan and R. Chellali, "A Unified SLAM solution Using Partial 3D Structure", Elektronika IR Elektrotechnika (IF:1.1), Vol. 20 (3), ISSN: 1392-1215, 2014.

PERSONAL INFORMATION

Date of Birth: 3rd March, 1981
Marital Status: Married
Nationality: Pakistani
Hobbies: Sports, book reading, movie-watching