House#A-41, SBCHS, B-12, Gulistane Johar, Karachi, Pakistan email: riazun1036@gmail.com

Dr. Syed Riaz un Nabi Jafri

Post doctorate (3D indoor modelling), PhD (Robotics), M.E (Industrial Electronics), B.E (Industrial Electronics)

Objective

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

Education

Post doctorate (3D indoor modelling) 2017
Department of Earth Observation Sciences (EOS)
ITC - University of Twente
Enschede-Nederland

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

Master of Engineering 2007
Electronic Engineering Department
NED University of Engineering & Technology, Karachi, Pakistan

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

Experience Summary

Six years teaching experience in Universities/Institutions (from 2008):

• Assistant Professor (Electronic Engineering Department, NED UET, Karachi, Pakistan)
- Undergraduate courses: Basic Electronics, Industrial Electronics, PLC, Microcontroller Applications Microprocessor Principles, Digital Electronics, Analog Integrated Circuits
- Graduate courses: Introduction to Robotics, Sensors and Systems, Industrial Control Systems Mechatronics, Digital Interfacing Techniques
- Final Year Project Advisor: Industrial Rover System, Industrial Arms, Quadcopter for tracking, PLC based Process control
- Postgraduate masters level project advisor: Modeling and simulation of 3D industrial arm on Webots, Features extraction from range/bearing sensors
- PhD student advisor: Modeling and implementation of autonomous assistive industrial arm
- Founder of NED UET Robotics Society: www.neduet-robotics-society.comuf.com/ www.facebook.com/NEDRobotics

• Member of following academic/administrative bodies (NED UET, Karachi, Pakistan)
- Board of Studies (Electronic Engineering Department, NED UET)
- Curriculum Review Committee (Electronic Engineering Department, NED UET)
- Focal Person (R&D Projects)

• Visiting faculty member of IIEE (NED UET, Karachi, Pakistan) (2008 to 2009)
• Visiting faculty member of UIT (Hamdard University, Karachi, Pakistan) (2008 to 2009)
• Visiting faculty member of Bahria University (Karachi, Pakistan) (from 2014)

Research Summary

• PhD scholarship granted by IIT-University of Genova, Italy (from Jan. 2010 to Apr. 2013)
- Studied state of art about Simultaneous Localisation and Mapping (SLAM) of robots
- Worked on Neobotix mobile robot
- Worked on Laser range sensors and vision (webcam) sensors
- Implementation of 2D feature based SLAM solution using EKF
- Implementation of 2D feature based SLAM solution using FastSLAM
- Implementation of partial 3D feature based SLAM solution using EKF with Inverse Depth Parameterization
- Implementation of 2D multi robot SLAM solution using EKF/FastSLAM
- Implementation of partial 3D multi robot SLAM solution using EKF with Inverse Depth Parameterization

Five years projects experience in Public Sector Organization (2003-2007):

• Navigation of vehicle by using GPS-INS based solution
• GPS based navigation of unmanned land vehicle (ULV)
• Development of Low Cost SLAM Mobile Robot for Indoor applications
• Remote sensing and Telemetry

Selected Papers

- M. Peter, **S. Riaz** 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", To be published in Journal of Electronics and Electrical Engineering (Electronika Ir Electrotechnika, ISI indexed) in 2014
- **S. Riaz,** A. Waheed, M. Zubair and R. Chellali, "Multi robot SLAM for features based Environment Modelling", In proceedings of IEEE ICMA, August 2014
- **S. Riaz** and R. Chellali, "A Distributed Multi Robot SLAM System for Environment Learning", In proceedings of IEEE SSCI, April 2013
- J. Iqbal, **S. Riaz**, A. Khan and H. Khan, "A novel track driver mobile robotic framework for conducting projects on robotics and control", Life science journal 2013, ISSN 1097-8135 (ISI indexed)
- A.A. Khan, **S. Riaz** and J. Iqbal, "Surface estimation of a pedestrian walk for outdoor use of power wheelchair based robot", Life science journal 2013; ISSN 1097-8135, P1697-1704 (ISI indexed)
- Javd I., M. Pasha, **S. Riaz**, H. Khan and J. Iqbal, "Real-Time Target Detection and Tracking : A Comparative In-depth Review of Strategies ", Life Science Journal 2013, ISSN 1097-8135, P804-813 (ISI indexed)
- Z. Li, **S. Riaz** and R. Chellali, "Visual place recognition for multi robots maps merging", In proceedings of IEEE SSRR, Nov. 2012
- **S. Riaz**, Z. Li, A. Ahmed and R. Chellali, "Laser only feature based multi robot SLAM", In proceedings of IEEE ICARCV, Dec. 2012
- **S. Riaz**, L. Brayda, R. Chellali, "Distributed feature based multi robot SLAM", In proceedings of IEEE ROBIO, Dec. 2011
- **S. Riaz**, S. Minhaj and S. Zeeshan, "Intelligent Navigation of Unmanned Land Vehicle by using GPS & One ABS Sensor", In proceedings of IEEE ICARA Feb-2009, Wellington, New Zealand
- **S. Riaz**, S. Minhaj and S. Zeeshan, "Improved Path Planning & Controlling for a Low Cost Navigation Solution of Unmanned Land Vehicle", In proceedings of IEEE UK Sim , Mar-2009

Experience and Familiarity with Various Applications, Tools and Environments

• Development Tools: Kdevelop C++, MPLAB, Arduino board development
• Robotics simulators: Webots, ROS, Gazebo
• MATLAB and Simulink, MATLAB Toolbox for Robotics
• OrCAD (Capture, PSpice, Layout), NI Multisim
• PLC hands-on experience on Siemens S7
• PIC, AVR, ATMEL controllers based project development

Personal Information

Date of Birth: 3rd March, 1981
Marital Status: Married
Hobbies: Electronic circuit designing, reading, sports
Cell no. : 0092 314 2053 562

References

Dr. Ryad Chellali (Senior Researcher)
PAVIS-IIT, Genova- Italy
ryad.chellali@iit.it
Dr. Luca Brayda (Team Leader)
RBCS-IIT, Genova- Italy
luca.brayda@iit.it
Dr. Abid Karim (Professor)
Iqra University, Karachi-Pakistan
akarimpk@yahoo.com