

MUHAMMAD NABEEL

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ACADEMIC QUALIFICATION

- MSc, Mechanical Engineering (Robotics/Mechatronics) [2013-2015]
Korea University of Technology and Education (South Korea)
(CGPA: 4.40 out of 4.50)
- Bachelor of Engineering in Electronic Engineering [2009- 2012]
NED University of Engineering and Technology, Karachi
CGPA: 3.7 out of 4, A-Grade (78%)
- Higher Secondary School Certificate (H.S.C) [2006-2008]
D.J Government Science College
A1-Garde (82%)
- Secondary School Certificate (S.S.C) [2003-2005]
St. Lawrence Grammar School
A1-Garde (83%)

PUBLICATIONS

Patent:

- M.Nabeel, Huzaiifa, Iqbal, Afzal, Shahzaib, Kazim, "Wearable Gadgets for Immersive VR/AR and Gaming Experience", US Patent Pending 2016

Journal:

- Aghil Jafari, Muhammad Nabeel, and Jee-Hwan Ryu, "The Input-to-State Stable (ISS) Approach for Stabilizing Haptic Interaction with Virtual Environments", IEEE Transaction on Robotics, Feb, 2017

Conference:

- Muhammad Nabeel, Hiba Ovais Latifee, Obaid Naqi, Kashan Aqeel, Huzaiifa, Muhammad Arshad, Muhammad Khurram, "Robotics Education Methodology for K-12 Students for Enhancing Skill Sets Prior to Entering University", ROBIO2017, China, accepted
- Hiba Ovais Latifee, Ammar Abbas, Taha Ahmed Siddiqu, Muhammad Nabeel and Muhammad Khurram, "Assistive Mobility Cane Exploiting Skin-Stroke Tactile Haptic Feedback Mechanism for Visually Impaired Persons", ROBIO2017, China, accepted
- Kashan Aqeel, Urooj Naveed, Faarah Fatima, Farah Haq, Muhammad Arshad, Ammar Abbas, Muhammad Nabeel and Muhammad Khurram, "Skin Stroking Haptic Feedback Glove for Assisting Blinds in Navigation", ROBIO2017, China, accepted
- Muhammad Nabeel, Aghil Jafari, Jee-Hwan Ryu, "Realizing Low-impedance Rendering in Admittance-type Haptic Interfaces Using the Input-to-State Stable Approach", IROS2017, accepted

- Muhammad Nabeel, Kashan Aqeel, Muhammad Noman Ashraf, Mudassir Ibrahim Awan, Muhammad Khurram, “ Perception of amputees for haptic feedback in 3D Printed Prosthetic Hand”, Demo Presentation at AsiaHaptics2016, Japan
- Muhammad Nabeel, Kashan Aqeel, Muhammad Noman Ashraf, Mudassir Ibrahim Awan, Muhammad Khurram, “Vibrotactile Feedback System for 3D Printed Prosthetic Hand”, ICRAI2016
- Aghil Jafari, Muhammad Nabeel and~Jee-Hwan Ryu, “Stable and Transparent Teleoperation Over Communication Time-Delay: Observer-Based Input-to-State Stable Approach”, Haptic Symposium 2016
- Muhammad Nabeel, JaeJun Lee, Usman Mehmood, Aghil Jafari and Jee-Hwan~Ryu, “Increasing the Impedance Range of Admittance-Type Haptic Interfaces by Using Time Domain Passivity Approach”, IROS2015
- Aghil Jafari, Muhammad Nabeel and Jee-Hwan Ryu, “Stable Bilateral Teleoperation with Input-to-State Stable Approach”, IROS2015
- Muhammad Nabeel, Aghil Jafari and~Jee-Hwan Ryu, “Network Formulation and Stability Improvement of a Bilateral Teleoperation System with Admittance-type Master Interfaces”, AIM2015
- Aghil Jafari, Muhammad Nabeel, Jee-Hwan Ryu, Multi Degree-of-Freedom Input-to-State Stable Approach for Stable Haptic Interaction, IEEE Conference, World Haptics, Chicago, June 2015
- Hafiz M.Nabeel, Anum Azher, Dr.Syed M.Usman Ali Shah, Abdul Wahab Mughal. *Designing, Fabrication and Controlling of Multipurpose 3-DOF Robotic Arm*. 1st International Conference on Sensing For Industry, Control, Communications, & Security Technologies

EXPERIENCE

- | | |
|--|---------------------------|
| • Visiting Faculty at NED University | Jan 2017 - Present |
| • Founder, CEO at EDVON-Education Revolution | June 2016- Present |
| • Member of Robotics Focus Group,
Ministry of Science and Tech, Pakistan | Jan 2017- Present |
| • Member of Expert Panel on Robotics Foresight
Ministry of Science and Tech, Pakistan | August 2017- Present |
| • Founder, CEO at HAPTIKA | October 2015- Sept 2016 |
| • Research Assistant and Faculty at TUM, Germany | March 2016- June 2016 |
| • Research Assistant at KOREATECH, South Korea | Sep 2013 to Sep 2015 |
| • As Trainee Engineer at KESC (PID-SCADA) | April 2013 to August 2013 |
| • As Research Assistant at KOSHISH FOUNDATION | Jan 2013 to April 2013 |

RESEARCH PROJECTS

- Design and development of Haptic Tweezers for medical simulation
- Development of haptic stick for blinds
- FP7 Integrated Project "*WEARable HAPTics for Humans and Robots*" - WEARHAP
- Designing a portable and high performance cutaneous display
- Input-to-State Stable Approach a less conservative criteria compared to passivity criteria to ensure the stability of Haptic Rendering
- Input-to-State Stable Approach a less conservative criteria compared to passivity criteria to ensure the stability of Bilateral Tele-operation under time delay

- Comparison study among Input-to-State Stable Approach, Time Domain Passivity Approach, Energy Bounding Approach and Wave Variable Approach in bilateral teleoperation under time delay
- Comparison study among Input-to-State Stable Approach, Time Domain Passivity Approach and Energy Bounding Approach for haptic rendering
- Implementation of Time Domain Passivity Controller on Four-Channel Architecture in Bilateral Tele-operation under time delay
- Bilateral and Trilateral Tele-operation under time delay using Time Domain Passivity Approach(TDPA)
- Effect of Haptic and Visual Feedback in Bilateral Tele-operation Under Time Delay
- Developed a control algorithms for Minimal Invasive Surgery (MIS) to reduce the mental hard work of the surgeons and to make the system more intuitive.

PROJECTS (Undergraduate)

- Senior Design Project: EFI (Electronic Fuel Injection) for GY6 type Engine as FYP (ICT R) NED University of Engineering and Technology, Karachi
Project's Aim: To reduce fuel consumption and to control over emission of harmful gases.

Other Projects:

- Participated in “FORMULA STUDENT SPAIN 2012”
- Design and Manufactured a 3DOF Robotic Arm
- Animal Power Generation (Got 1st Position)
- Electronic Wheelchair (Got 1st Position)

HONORS AND PARTICIPATIONS

- Member of “**TECHNOLOGY FORESIGHT EXPERT PANEL ON ROBOTICS**”, initiative of Pakistan Council for Science and Technology
- Member of Robotics Focus Group, initiative of Ministry of Science and Technology, Pakistan
- Received funding from **IEEE-RAS SIGHT** for establishing robotics lab in school
- Selected at **IEEE-RAS Robotics Startup Bootcamp**, China
- Selected at **Blackbox, a Google funded accelerator in Silicon Valley**, USA. We were the only startup selected from all over the Pakistan in 2016.
- Selected at **Plan9**, a tech incubator. We were the only startup selected from all over the Karachi.
- Selected for **NIC (National Incubation Centre)** in Feb, 2017
- Incubate at **Nest I/O, A Google funded incubator** in Karachi, Pakistan
- Incubate at IBA
- Received scholarship from **Korea University of Technology and Education** (South Korea)
- Received 1st prize in “Engineering Competition” at “Pakistan Auto Show 2013”
- Received **ICT R&D** fund for FYP (Final Year Project)
- Received four years scholarship during bachelors’ in engineering at NED University of Eng. & Tech.
- Participated and won 1st prize in “NSRI Koshish Foundation” for the project “Electronic Wheelchair” 2011 and "Animal Power Generation" 2012
- Participation certificate in NERC 2010 and 2011, PROCOM 2010, SENTEC 2011, SPEC 2009 and

2010