

# Abdullah Gulraiz

+92-316-5286642

abdullahgulraiz@outlook.com

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## EDUCATION

**National University of Sciences & Technology (NUST), Pakistan 44000** Sep 2014 – Present

*Bachelor of Engineering in Mechatronics Engineering*

- Cumulative GPA: 3.71/4.00
- Thesis: Eight-bar Parallel Manipulator Synthesis and Control for Tracking and Following Motion of User Running on a Treadmill
- Focus: Robotics, Control Systems, Mechatronics, Signal Processing, Visual Computing

**Roots College International, Pakistan 44000** Sep 2012 – Jun 2014

*A' Level*

- Grade: 83.11%
- Subjects: Physics, Chemistry, Mathematics, Computing

**Dr. A. Q. Khan College of Science & Technology, Pakistan 46000** Sep 2008 – Jun 2011

*O' Level*

- Grade: 85.00%, graduated with Gold Medal

## RESEARCH EXPERIENCE

**Department of Mechatronics Engineering, College of E&ME, NUST** Aug 2017 – Present

*Research Assistant*

- Worked on “Visual Servoing based Synced Motion Control of an Eight Bar Parallel Manipulator”, US Patent No. [US 8926475 B2](#)
- Developed algorithms to extract features from videos and perform velocity & position analyses of figure-8 trajectory traced by users while running on treadmill
- Designed and performed kinematics and dynamics analysis of the eight-bar parallel manipulator using SolidWorks and ANSYS

## PROFESSIONAL EXPERIENCE

**SwiftBin® - Efficient Garbage Collection, Pakistan 46000** Mar 2017 – May 2017

*Web Developer*

- Developed web application using PHP Laravel Framework to display data collected through sensors visually - <http://app.swiftechub.com/bins>

**RADEC Technologies, Pakistan 46000** Jun 2016 – Aug 2016

*Web Developer*

- Developed social media network using PHP Laravel Framework – <http://portal.emealumni.com>, [RADEC](#)

## PROJECTS

**Design and Visual Servoing of 8-bar Parallel Manipulator for Treadmill Runners** Aug 2017 – Jun 2018

- Fabricated 8-bar mechanism to trace figure-8 trajectory traced by user's face while running on treadmill
- Developed vision-based PID control to eliminate relative motion between electronic device mounted on mechanism and user's face, getting feedback from a fixed camera on the manipulator

**Autonomous Arena Solving Robot** Sep 2016 – Jun 2017

- Fabricated an autonomous robot with discrete components that solved a given arena incorporating color sensing, line following, wall following, ramp ascent/descent and ditch crossing, with PD control.

**Android Smartphone controlled Robot** Feb 2017 – Jun 2017

- Steered a four-wheeled robot using Android smartphone's gyroscope and accelerometer through Bluetooth.

- IntelliWalk** Sep 2016 – Jan 2017
- Fabricated a walking stick that smartly detected elderly fall and alarmed the attendant through SMS/call.
- EasySteth** Feb 2016 – Jun 2016
- Developed a digital version of ordinary stethoscope that gave noise-free visual and sonic output to the user.
- Ball Potting Robot (LEGO Mindstorms)** Feb 2015 – Jun 2015
- Programmed a modular robot that performed localization and color detection to pot boxes in an arena.
- Data Management Systems** Feb 2015 – Jun 2015
- Developed various applications (frontend and backend) using ASP.NET and PHP, including [NERC](#).

## SKILLS AND COMPETENCIES

- Microcontrollers:** 8051, Atmel AVR
- Languages:** C/C++, C#, Java, PHP, Javascript, Python, Assembly
- Software:** Proteus, PSPICE, PTC Creo, SolidWorks, AutoCAD, ANSYS, NI LabView, MATLAB/Simulink, Keil  $\mu$ Vision, Atmel Studio, Android Studio, Adobe Photoshop/Fireworks/Premiere
- Frameworks:** ASP.NET MVC, Laravel, Bootstrap, Wordpress, Typo3, Drupal, CMS, OpenCV, Qt

## INTERNATIONAL EXPERIENCE

- NUS Enterprise Summer Program on Entrepreneurship (Singapore)** Jul 2016  
*Summer School*
- Selected for 2-weeks program on Entrepreneurship and Economic Development in Singapore.
  - Awarded 3<sup>rd</sup> Best Start-up Idea for 'Using Technology to Educate Masses' – [NUS](#), [HU](#)
- FIRST LEGO League (FLL) World Festival (St. Louis, MO, USA)** Apr 2012  
*International Competition*
- Represented Pakistan at the event after succeeding at Regional and National levels
  - Won Judges Award for fabricating best robot in minimum resources – [Photo](#)

## LEADERSHIP EXPERIENCE

- Campus Director, HULT Prize @ NUST** Sep 2016 – Dec 2016
- Responsible for recruiting teams for on-campus events, and refining qualified teams' business ideas.
- President, National Engineering Robotics Contest, Pakistan** Jan 2016 – Aug 2016
- Planned the [event](#), led a team of Event Directors, and briefed the Board of Directors on event Progress.

## VOLUNTEER EXPERIENCE

- Outgoing/Incoming Global Volunteer, AIESEC® Islamabad, Pakistan** Sep 2016 – Present  
*Team Member*
- Responsible for contacting international interns, facilitating their exchange journeys, and partnering with local firms.

## HONORS AND AWARDS

- Recipient, Academic Semester Scholarship, NUST** Sep 2015 – Present
- For scoring higher than 3.75 GPA in semesters
- Recipient, Rector's High Achiever Award, NUST** 2018
- For attaining 3<sup>rd</sup> Best Start-up Idea Award at NUS Summer Enterprise Program, Singapore