



MUHAMMAD ALI



Contact

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- 📅 November 30th, 1998
- 🌐 [linkedin.com/in/m--ali](https://www.linkedin.com/in/m--ali)
- 📄 Documents: bit.ly/3v62nqc
- 📺 <https://bit.ly/3t5Pb4a>
- 📍 Marghuz, Swabi, KPK, Pakistan

Leadership/Volunteer Experience

- Head Design Team at PIEAS Literary Society
Date: 18-01-2021 --- 26-05-2021
Certificate: <https://bit.ly/3i1ArwW>
- Head Videography at NGO Muaawin
Date: 28-01-2021 --- 29-06-2021
Certificate: <https://bit.ly/36gOE6r>
- Co-head Videography PIEAS Media Club
Date: 24-11-2020 --- 13-04-2021
Certificate: <https://bit.ly/3J92gPX>
- Inquiry Team Member at NGO Muaawin-e-Rozgaar
Date: 21-12-2020 --- 26-07-2021
Certificate: <https://bit.ly/3leALmU>
- Head videography at IEEE's ISYWSC event
Date: 24-11-2021 --- 15-12-2021
Certificate: <https://bit.ly/3bTD2cR>
- Head videography PIEAS National Olympiad
Date: 12-12-2021 --- 03-01-2022
Certificate: <https://bit.ly/3w3fUjR>
- Organizing member at International Workshop on 2D and Quantum Effect Devices
Date: 12-11-2018 --- 14-11-2018
Certificate: <https://bit.ly/37sk0b1>

Languages

- | | |
|------------|-----------|
| 1- Urdu | ● ● ● ● ● |
| 2- English | ● ● ● ● ● |
| 3- Pushto | ● ● ● ● ● |
| 4- Hindi | ● ● ● ● ● |
| 5- Punjabi | ● ● ● ● ● |

Education

- Pakistan Institute of Engineering and Applied Sciences (PIEAS)
 - BS Electronics Engineering
 - Sep 2018 - June 2022
 - CGPA : 3.72 / 4.00
 - Distinction with 2nd position
- Fazaia Degree College, MRF, Kamra
 - School: Matriculation
 - April 2013 – March 2015
 - Percentage: 95 %
 - Distinction with 1st position
- Fazaia Degree College, Risalpur
 - College: FSC Pre-engineering
 - June 2015 – May 2017
 - Percentage: 83%
 - Distinction with 4th position

Research Experience

- Implementation of deep learning control for Quadcopter
 - Made digital twin of Quadcopter in gazebo environment (in Ubuntu OS)
 - Trained the model through PPO, a reinforcement learning algorithm
 - Replaced the PID algo of traditional betafight with our trained model
 - Compiled the modified betafight to create a hex file
 - Assembled the Quadcopter (using STM32F722 MCU-based Mateksys FC F722-STD, ESC, Brushless motors, PDM, Radio transceiver etc)
 - Flashed the hex file to quadcopter using betafight configurator
- Video: <https://youtu.be/aDtnSoSor4E>

Work Experience

- Core Network Engineer at Huawei, SPT tower, Isb
 - Date: 22-08-2022 --- Present
 - Group Leader: 03-10-2022 --- Present
- Robotics Engineer at National Institute of Electronics, Sector H-9, Isb
 - Date: 02-08-2021 --- 24-09-2021
 - Made two-wheel self-balancing robot
 - Video: <https://youtu.be/XZjVsQ4YW9w>
 - Certificate: <https://bit.ly/3lCEiBP>
- Vice-president IEEE Robotics PIEAS Student Branch
 - Date: 20-Sep-2021 --- 16-May-2022
 - Responsibilities: Organizing seminars and workshops on Robotics
 - Certificate: <https://bit.ly/3i150ms>

Huawei's Projects

- | | |
|-----------------------|----------------------------|
| • 5G Core Deployment | • Cloud Edge |
| • Evolved Packet Core | • Software define networks |

Hobbies

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|-----------------|-------------------------|
| • Blog writing | • Thoughts illustration |
| • Video editing | • Social Media |
| • Hiking | • Badminton |

Technical Projects

- **Maze Solver Robot**
Date: 19-11-2019 ---- 20-12-2019
Video : <https://youtu.be/NtWT8aEdAtg>
- **Line follower robot**
Date: 19-11-2019 ---- 20-12-2019
Certificate: <https://bit.ly/35OvHZg>
- **Controlling Servo from Web browser wirelessly using ESP32**
Date: 17-03-2021 ---- 18-03-2021
Video : <https://bit.ly/3AkcgDW>
- **Controlling Servo using Potentiometer and ESP32**
Date: 17-03-2021 ---- 18-03-2021
Video : <https://bit.ly/3bRPzNX>
- **15,000 mAh Laptop Power Bank**
Date: 19-07-2022 ---- 28-07-2022
Video : <https://youtu.be/zX1eYh3Lx2A>
- **Android P2P messaging App**
Date: 07-12-2020 ---- 14-01-2021
Video: <https://youtu.be/wOFHmuyRXYF>
Report: <https://bit.ly/3KHV5yi>
- **Trained Reinforcement Learning agent for autonomous driving**
Date: 15-05-2022 ---- 17-05-2022
Code : <https://bit.ly/38nxtln>
- **Reinforcement Learning for Atari Breakout Game**
Date: 17-05-2022 ---- 18-05-2022
Code : <https://bit.ly/3wqR8Zz>
- **Trained Neural Network for Image prediction**
Date: 28-04-2022 ---- 30-04-2022
Video : <https://bit.ly/3lek8P8>
- **Training CartPole to balance itself**
Date: 11-05-2022 ---- 14-05-2022
Code : <https://bit.ly/3sAKyyG>
- **Tic-tac-toe game using a C++ programming language**
Date: 06-12-2018 ---- 16-12-2018
Report: <https://bit.ly/3i1Hw0m>
- **Designed and implemented a stepper motor controller**
Date: 13-12-2019 ---- 14-01-2021
Report: <https://bit.ly/3hZQoUu>
- **Designed a 1kVA UPS powered by a single-phase 220V/50Hz AC**
Date: 18-06-2021 ---- 27-06-2021
Report: <https://bit.ly/3MNBvlv>
- **Designed 8-bit SAR ADC**
Date: 31-12-2020 ---- 30-12-2019
Report: <https://bit.ly/36cbv3a>
- **35% Duty Cycle Rectangular Waveform using Astable Multivibrator (555 Timer)**
Date: 23-12-2019 ---- 30-12-2019
Report: <https://bit.ly/3tgIw8N>
- **Detection of cracks in Ceramic Tiles using Digital Image Processing**
Date: 30-12-2021 ---- 06-01-2022
Report: <https://bit.ly/3tSHDRx>
- **Designed a filter (i) that removes cross-over distortion from class B push-pull amplifier (ii) that minimizes noise coming from a tape recorder (iii) for a car alternator.**
Date: 02-01-2020 ---- 09-01-2020
Report: <https://bit.ly/3KCyHXh>

Skills

- **Programming Languages:** C++, Python, C, and Java
- **IDEs:** MATLAB/Simulink, Arduino IDE, Xilinx ISE, Keil, LTspice, MobotSim, ModelSim, Visual Studio, Android Studio, Gazebo simulator, GymFC, Autodesk Inventor, Creo Parametric, Virtual box (Linux/Ubuntu),
- **Electronics Boards:** ESP32 MCU, Spartan 3 SoC FPGA, Arduino Due, and Arduino Mega, Uno, Nano
- **Sensors/ Actuators etc:** Inertial Measurement Unit (3-axis gyroscope and 3-axis accelerometer), Ultrasonic, IR sensors, GPS, barometer, temperature, quadrature encoder, Wi-Fi Module, 3S 12V 25A Battery Management System (BMS), Radio transceiver, stepper, DC and brushless motors, motor drivers, servos, potentiometer etc.
- **Practical Work:** PCB Designing, Veroboard usage/Soldering
- **Web Development:** React, CSS, Tailwind CSS, HTML, JavaScript
- **Media:** Graphics Designing; Animation; Video, Photo, and Voice Editing
- **Soft Skills:** Quick Learning Ability, self-management, adaptability, responsibility, time- management, teamwork, leadership

Online Courses

- TensorFlow 2.0 Complete Course - Python
Neural Networks
[freecodecamp.org](https://www.freecodecamp.org)
- Python full Course for Beginners
[freecodecamp.org](https://www.freecodecamp.org)
- C++ full Course for Beginners
[freecodecamp.org](https://www.freecodecamp.org)
- 9 Axis Inertial Measurement Units with Arduino
Paul McWhorter
- PID Control systems with Arduino
Paul McWhorter
- Reinforcement Learning Using Python
Edureka
- Java Programming
Great Learning Academy
- Android Development Tutorial
CodeWithHarry
- Gazebo Simulator Course
Robotogeddon
- Neural networks
3Blue1Brown

References

- **Dr Naeem Iqbal**
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- **Dr. Haroon-ur-Rashid**
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