

Muhammad Jazib

IoT EXPERT · AI/ML

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June 2024 graduate seeking PhD Fellowship in field of Industrial Automation, IoT Wireless Communication & AI

Research Experience

National Engineering and Scientific Commission of Pakistan-NESCOM

July 2023 - Sep 2023

IoT Robotics | Internship Onsite | Advisor: Dr. Raheel

- Implemented a mobile robot integration with ROS Esp-32 Based Node and IoT to chase a dynamic target.
- Implemented a speech recognition algorithm for machine learning-driven control systems for Mobile Robot.

Artificial Intelligence and Deep Learning-AIDL

Jun 2022 - July 2022

Internship

- Worked on UAV detection using the YOLOV5 algorithm.

Advanced Network Technology Lab (ANT)-CCU(Research)

June 2024 - Sep 2024

Wireless Communication | Research Assistant | Advisor: Prof. Dr. Jen Yi Pan

- Next generation Wireless communication,
- 5G/6G, Reconfigurable Intelligent Surface (RIS), System level simulation,
- Artificial Intelligence-enhanced wireless research

Cyber Physical Systems Lab (CPS) DEE, PIEAS

October 2023 - Present

Industrial IoT | Research Assistant | Advisor: Prof. Dr. Muhammad Riaz

- RCD-IoT: Enabling Industrial Monitoring and Control with Resource-Constrained Devices,
- Artificial Intelligence-enhanced Predictive Maintenance of Industrial Utilities

Robotics and Machine Intelligence (ROMI) Lab SEECS, NUST

August 2023 - October 2023

Machine Intelligence | Research Assistant | Advisor: Prof. Dr. Hafsa Iqbal

- MINDTWIN AI: Multi-physics Informed Digital TWIN for Fault Localization in Induction Motor using AI,
- Artificial Intelligence-enhanced Predictive Maintenance of Three Phase Induction Motor

Education

Punjab Group of Colleges Blue Area Islamabad

Islamabad, Pakistan

Higher Secondary School Certificate

2018-2020

90%

IMCB F-10/3

Islamabad, Pakistan

Secondary School Certificate

2016-2018

93%

Achievements:

- Received a Benevolent Scholarship worth 400K PKR
- Relevant Courses: Internet of Things, Advanced Deep Learning and Computer Vision, Machine Learning Operations.

Skills

Languages	Python, C/C++, C#, embedded C, Matlab, Latex
Robotics/Embedded	Espressif, V-Rep, Gazebo, Comsol, MoveIt, Keil U Vision, CubeMX, Thonny, Raspbian, Proteus, FEA, Arduino, STM-32, ESP, Node-Red, Grafana
Software	Tensorflow, Pytorch, Docker, OpenCV, LtSpice, Proteus, Solidworks,
Certifications	Toyota 5S Ecological Methodology (2022) United Nations of Association of Pakistan – (2022)

Publications

RCD-IoT: Enabling Industrial Monitoring and Control with Resource-Constrained Devices | Conference Paper | In Progress

Sep 2023 - Current

Authors* Ayesha Abid †, Sardar Muhammad Ali †, Muhammad Jazib †, Muhammad Riaz † | † Joint Equal Contributors

MIND TWIN AI: Multi-Physics Informed Digital TWIN for fault Localization in Induction Motor using AI | Published | IEEE-Big Data BDKCSE'23, Bulgaria Sofia | Conference Paper/Presentation | Published

Jan 2023 - May 2023

Amina Bashir*, Muhammad Ahmed Mohsin*, Muhammad Jazib*, Hafsa Iqbal* | * Joint Equal Contributors

Deep Learning based Resource Allocation in Radio-Centric Networks|Conference Paper|IEEE-ICECE China'23| Accepted-In Progress
Muhammad Jazib*,Alishba Hussain*|*Joint Equal Contributors

Jan 2023 - May 2023

IoT-Based Industrial Monitoring and Control Systems |Conference Poster |IEEE-ICECE Lahore'23|Published

Muhammad Jazib*,Ayesha Abid*,Sardar Muhammad Ali*, Muhammad Riaz*|*Joint Equal Contributors

Jan 2023 - May 2023

Hands on Experience with IoT using Node Red|Invited Talk|IEEE-Industrial Electronics PIEAS |Webinar

Muhammad Jazib*|Joint Equal Contributors

Jan 2023 - May 2023

Projects

IoT Based Advanced Industrial Energy and Utility Management System (AIEUMS) (Course Project

PIEAS)

- Deployed a high-performance, **ML** algorithm with integrated **Digital TWIN** for Predictive Maintenance.
- Remote Monitoring of Utilities and Energy Management
- Successfully integrated ML model on Raspberry pi 4b+.

Sep 2023 - Dec 2023

Design and Development of 2 wheel Mobile Robot with Pick and Place Capability(Course Project)

PIEAS)

- Integrated **Fuzzy Controller** for Path Optimization
- A swift behavior in the Jacobian matrix was noticed to set a safe boundary avoiding singularity space

Feb 2023 - June 2023

IoT Based Air Pollution Monitoring System

PIEAS

- ESP-32 Based SMOTE Synthetic Minority Oversampling Technique Deployed for Data Sparsity

Sep2022 - Aug 2022

Waveform Generation Using STM-32 (Blue-pill)

PIEAS

- Look up Table Based Different frequency Waves Were Generated

Sep2022 - Aug 2022

Societies

Technical and Volunteer

PIEAS

- Member IEEE PIEAS Control System
- Member PLS Debating Chapter PIEAS
- Member PVS Volunteer Society
- Member AWS Cloud Club PIEAS
- CDRS Youth Chapter Islamabad

Sep 2020 - Current

Certificates

2021 **Intorduction to Matlab**, NUST IEEE

NUST,Pakistan

2023 **Methods on Reverse Engineering**, International Conference WRE '23

GIKI,Pakistan

2021 **Intro to GitHub**, IEEE PIEAS

PIEAS,Pakistan

2022 **Toyota 5S Methodolgical Program**, United Nations Association of Pakistan(UNADP)

Pakistan

Languages

English Professional proficiency

Saraiki Native proficiency

Urdu Basic proficiency

References

Dr Hafsa Iqbal| Associate Professor| NUST,SECS Islamabad| hafsa.iqbal@seecs.edu.pk

Dr Waqas Ahmed | Professor | DEE,PIEAS Islamabad| waqas@pieas.edu.pk

Dr Muhammad Abid | Professor | DEE,PIEAS Islamabad |mabid@pieas.edu.pk