

Azmat HUSSAIN

PERSONAL DATA

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WORK EXPERIENCE

<i>Current</i> SINCE ARIL 2024	Assistant Manager - R&D at TPL TRAKKER LTD. <ul style="list-style-type: none">• Led a team of software and hardware engineers in the development of an Indoor Asset Tracking SaaS platform, overseeing both frontend and backend design.• Designed and implemented various IoT remote sensing solutions, expanding technical expertise into advanced sensor technologies.• Managed cross-functional teams to integrate software and hardware components, ensuring seamless operation of integrated systems.• Developed hardware components, including circuit boards and processors, with a focus on performance and reliability.
<i>Previous</i> SINCE JULY 2021	Technical Lead at NATIONAL CENTER OF ARTIFICIAL INTELLIGENCE - SCL, NED UET <ul style="list-style-type: none">• Led robotics & IoT projects including development of Weeding Robot, Jazari - Humanoid Robot, Reverse Vending Machine, and IoT Devices, demonstrating proficiency in embedded development.• Implemented sensor fusion application by integrating Robosense Lidar with Intel tracking camera/IMU through ROS, enhancing spatial awareness and precision in navigation and object detection.• Collaborated with cross-functional teams to integrate software and hardware components.• Designed & developed hardware components, including circuit boards and processors.• Developed understanding of sensor data processing, working with Lidar, cameras, & GNSS etc.• Gained working familiarity with prominent SoC hardware from Nvidia (Xavier AGX, Jetson Nano)• Worked closely with software engineers to create integrated hardware & software solutions.• Oversaw the manufacturing process of hardware components/PCBs, ensuring quality control.• Conducted thorough testing and debugging, identifying and resolving issues promptly.
<i>PREVIOUS</i> AUG 2019 - JUNE 2021	Research Assistant at FAB LAB - ELECTRICAL ENGINEERING, SUKKUR IBA UNIVERSITY <ul style="list-style-type: none">• Designed and developed hardware for IoT energy metering devices.• Spearheaded the design & implementation of an SoS Alarm Device, enhancing security and monitoring capabilities for clients.• Mentored embedded systems students in projects like Open-source Quadcopter, Ventilator, PCR Thermocycler, and BMS, enhancing their technical & project management skills.• Hands-on experience in electronics prototyping and debugging, contributing to project success.

EDUCATION

FEB 2024	Masters of Science in Artificial Intelligence COMPUTER INFORMATION SYSTEMS DEPARTMENT, NED UNIVERSITY OF ENGG & TECH, KARACHI
DEC 2018	Bachelor of Engineering in Electrical & Electronics SUKKUR IBA UNIVERSITY, SUKKUR, PAKISTAN
JUNE 2019	Principles & Applications of Digital Fabrication - Fab Academy FAB FOUNDATION USA, FAB LAB KHAIRPUR, PAKISTAN

SKILLS

- Strong understanding of embedded systems, and microcontrollers.
- Experience in programming languages like C, python and javascript, with a passion for building end-to-end IoT solutions
- Experience with communication protocols like UART, SPI, I2C, & interfacing sensors and actuators.
- Excellent problem-solving skills for troubleshooting complex hardware issues.
- Strong communication skills & proven ability to work collaboratively in cross-disciplinary teams.
- Experience in creating clear and concise technical documentation.

ACHIEVEMENTS AND AWARDS

2019	Winner SIBACOM'19 - Hardware Exhibition	Sukkur IBA University
2019	Received Scholarship of worth 4000USD for Fab Academy	Fab Foundation USA
2015	Recipient of Full Scholarship for Undergraduate Studies	Sindh Govt - Sukkur IBA University

PUBLICATIONS

2023	Development of Cost-Effective and Easily Replicable Robust Weeding Machine MACHINES, MDPI, IF: 2.899
2022	Development of a Low Cost and Light Weight Deep Learning Based Reverse Vending Machine RECYCLING, MDPI

PROJECTS

TrackNest APRIL 2024 - JUNE 2024	A saas platform for Indoor Asset Tracking - Designed a saas platform to monitor real-time location of important assets in closed spaces using ultra-wide-band(UWB) tags and modems, also oversaw hardware deployment and integration.
Jazari JAN 2022 - PRESENT	A 3d Printed Humanoid Robot - Designed and led the development of JAZARI, a versatile humanoid robot, showcasing innovative robotics technology and interactive capabilities for diverse applications.
Weed Robot OCT 2021 - PRESENT	An agricultural Weed Killing Robot - Led the design and implementation of a Weed Control Robot, employing cutting-edge robotics technology to autonomously identify and eliminate weeds in agricultural settings, optimizing crop yield and sustainability.
Reverse Vending Machine JULY 2021 - OCT 2022	A social project for Plastic Waste Management - Designed and oversaw fabrication, and majorly contributed to electronics design, hardware integration and embedded programming of the machine

CERTIFICATIONS

2020	Leadership Development for Engineers - Specialization	RICE University at Coursera
2020	Developing Industrial IoT - Specialization	University of Colorado Boulder at Coursera
2020	Introduction to Embedded Machine Learning	Edge Impulse at Coursera
2020	AI for Everyone	deeplearning.ai at Coursera
2020	Basic Image Classification with Tensorflow	Coursera Project Network
2022	Robotics: Aerial Robotics - Specialization	University of Pennsylvania at Coursera
2022	Learning FPGA Development	LinkedIn

CONFERENCE AND WORKSHOPS

2018	International Conference on Computing, Maths & Engg Tech	Sukkur IBA University
2019	All Pakistan DICE - IET Control and Automation	COMSATS University, Lahore
2021	AI Fest 3.0	NED University ET
2022	Research and Technology Showcase	Higher Education Sindh, Pakistan

INTERESTS AND ACTIVITIES

- Actively involved in promoting STEM education through volunteering at workshops and events
- Contributed to open-source projects, demonstrating technical expertise and collaborative skills
- Enthusiasm for diverse cultures and global experiences gained through travel
- Avid follower of cricket, enjoy watching & keeping up with the latest in the cricketing world