Rafiq ul Islam

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PROFESSIONAL SUMMARY

Professional Summary

Conducted research **Embedded Vision and Privacy-Aware Artificial Intelligence**, with strong expertise in designing **low-power, low-latency perception systems** for real-world human-centred applications. Specialized in deploying optimized neural networks on **resource-constrained devices** using TinyML, model quantization, and on-device inference pipelines. Experienced in integrating embedded vision with sensor networks, edge-cloud architectures, and low-power communication technologies. Proven track record of developing **deployable, privacy-preserving AI systems** for smart environments, with research contributions spanning embedded AI, human behaviour analysis, and ethical sensing.

Link: https://rafibit.github.io/pp2/

WORK EXPERIENCE

University of Polytechnic – Valencia, Spain

Visiting Researcher

[01/02/2025 – 31/07/2025]

- Built a **privacy-preserving visual perception system** using a FOMO model on Arduino Nicla Vision, enabling **anonymous human presence and engagement tracking** without transmitting raw video, directly relevant to event camera-based anonymized sensing.
- Developed an **on-device visual perception system** for real-time scene understanding, achieving low-latency inference (<100ms) under ultra-low-power constraints.
- Implemented **model quantization (int8)** and optimization techniques to achieve robust performance under severe power/computational constraints, directly applicable to efficient robotic control.
- Architected a **closed-loop data pipeline** integrating low-power wireless communication (LoRaWAN) with cloud analytics (InfluxDB), mirroring perception-action cycles in autonomous systems.

GithubLink: https://github.com/rafibit/artifacts-holding-power

WISH INNOVATIONS S.R.L – Rende, Italy

Visiting Researcher

[01/08/2023 – 31/01/2025]

- Designed a **multi-modal sensor network** for environmental perception, implementing **real-time data fusion and adaptive control loops** applicable to event-based sensor integration.
- Managed end-to-end data lifecycle from edge devices to cloud platforms (The Things Network), ensuring reliable, real-time communication in dynamic environments.
- Applied **privacy-preserving design principles** to embedded AI, aligning with human-centered and safe robotic systems.

Daanish Schools, Govt. of Punjab – Faisalabad, Pakistan

Computer Science Teacher

[30/12/2020 – 31/10/2022]

University of Agriculture – Faisalabad, Pakistan

Visiting Lecturer

[01/10/2019 – 30/04/2020]

Punjab Education Department – Faisalabad

Senior Elementary School Teacher

[31/07/2016 – 31/08/2017]

EDUCATION AND TRAINING

PhD-Information and Communication Technology

University of Calabria [01/11/2022 – 29/01/2026]

City: Rende | **Country:** Italy

MS Computer Science

Beijing Institute of Technology [05/09/2017 – 20/06/2019]

City: Beijing | **Country:** China

Bachelor of Computer Science

University of Engineering and Technology [11/12/2011 – 30/08/2015]

City: Lahore | **Country:** Pakistan

SKILLS

Programming

Python / MicroPython / C++ / OpenMV scripting / Flux Query Language / Embedded Linux

Technical Expertise

Linux (Terminal Commands, Bash/Shell) / Docker Environment / Mqtt Protocol / Influxdata(InfluxDB, Telegraf, Grafana) / Cloud Server Management / The Things Network and Chirpstack

Embedded Vision & AI

TinyML / Model Quantization / Edge Impulse / Computer Vision (FOMO) / Real Time Inference / On Device Learning

Low Power Syatems and Sensing

Microcontroller Programming (Arduino)) / Time Series Analysis / LoRaWAN / Sensor Fusion

LANGUAGE SKILLS

Mother tongue(s): Urdu

Other language(s):

English

LISTENING C1 **READING** C1 **WRITING** C1

SPOKEN PRODUCTION C1 **SPOKEN INTERACTION** C1

PUBLICATIONS

[2026]

A TinyML Framework for Quantifying Artifacts Holding Power in Smart Museums Accepted and presented.

Publisher: CCNC

Improving visitors experience in Smart Museums

Journal Name: 1st IEEE Latin American Conference on Internet of Things

Healthiness and Safety of Smart Environments through Edge Intelligence and Internet of Things Technologies

Journal Name: Future Generation Computer Systems

General-Purpose Sensing for Smart Environments: The Smart Museum Use Case

Journal Name: 21st International Conference on Distributed Computing in Smart Systems and the Internet of Things

Leading Smart Environments towards the Future Internet through Name Data Networking: A survey

Journal Name: Future Generation Computer Systems

More Publications

Link: https://scholar.google.com/citations?view_op=list_works&hl=en&user=qTUg8-oAAAAJ

HONOURS AND AWARDS

[27/12/2018] Beijing Institute of Technology, China
STUDENT DISTINGUISHED AWARD

[27/12/2018] Beijing Institute of Technology, China
BEST VOLUNTEER AWARD

PROFESSIONAL DEVELOPMENT

[26/03/2025 – 28/03/2025]
Summer School: IoT for eco friendly Tourism

Participant

[27/06/2024 – 27/06/2024]
Workshop IEEE@UNICAL

Attendee

[25/09/2023 – 27/09/2023]
The International Conference on Embedded wireless systems and Networks

Participant