Muhammad Asif Khan

Research Scientist at Qatar Mobility Innovations Center, Qatar.
Associate Editor, IEEE (TNNLS, TCE, TTS, SPL)
Web: https://muasifk.github.io/
Google Scholar: https://scholar.google.com/citations?user=BgUrPm8AAAAJ&hl

CONTACT DETAILS	Address: PO Box 210531, Qatar Science & Technology Park, Doha, Qatar, E-mail: asifk@ieee.org, muasifkn@gmail.com Mobile (Whatsapp): +974-30253978
RESEARCH INTERESTS	TinyML, Edge-AI, GenAI, neuromorphic computing, IoT, autonomous vehicles, mobile computing, wireless networking.

EDUCATION

Ph.D. in Electrical Engineering   2014 - 2019
Qatar University, Doha, Qatar (#112 worldwide in QS Ranking)
Dissertation Title: "Framework for Content Distribution over Wireless LANs"
Advisor: Prof. Ridha Hamila

M.Sc. Telecommunication Engineering   2010 - 2013
University of Engineering and Technology Taxila, Pakistan.
Thesis Title: "MAC-Aware Dynamic Source Routing Protocol"
Advisor: Prof. Adeel Akram

B.Sc. Telecommunication Engineering
University of Engineering and Technology Peshawar, Pakistan   2005 - 2009

ACADEMIC ROLES

Research Scientist   Mar 2024 – Present
Qatar Mobility Innovations Center, Doha, Qatar.

Postdoctoral Research Fellow   Jun 2020 – Feb 2024
Qatar University, Doha, Qatar.

Graduate Researcher   Jan 2016 – Dec 2016
Qatar Mobility Innovations Center, Qatar.

Graduate Research Assistant   Aug 2014 – July 2015
Qatar University, Doha, Qatar.

TEACHING EXPERIENCE

o STAT-819 Advanced Machine Learning (Spring-2024)
o STAT-836 Advanced Techniques and Logical Reasoning (Fall-2023)

THESIS SUPERVISED

o **Co-supervisor** of Mr. Jorge Turriate, Thesis title: "*Curriculum Learning for Monocular Depth Estimation in Disaster Management using UAVs*", Université d'Evry Paris-Saclay, France. (2025)
o **Co-advisor** of Mr. Samiullah, Thesis title: "*A Novel Approach based on Robust Measures of Scale for Feature Selection in Binary Classification*", Abdul Wali Khan University, Mardan, Pakistan. (2024)

MENTORSHIP

o **Mentor**, GAIN Mentorship Program 2024/2025, Germany.
o **Research Mentor**, Qatar University Young Scientists Center (QUYSC), Qatar (2023-24).
o **Summer Internship Supervisor** Qatar Mobility Innovations Center, Qatar. (2022-25)

SCHOLARSHIP & GRANTS

o *Post Doctoral Research Award (PDRA)*, Qatar National Research Fund, USD. 200,000 (Mar 2022 - Feb 2024).
o *Graduate Assistant scholarship*, Qatar University, USD. 40,000 (Aug 2014 - May 2015)

AWARDS

o *Best Student Paper*, at IEEE EUVIP, Valletta, Malta, Oct 2025.
o *Best Presenter*, at IEEE ICFTSS, Kuala Lumpur, Malaysia, Aug 2024.

PUBLICATIONS

UNDER
REVIEW

[R1] J. Haddad, **M. A. Khan**, F. Filali, and H. Menouar, RoadSense: Mapping road surface using crowdsource data, in *IEEE Data Descriptions*, 2025.

[R2] **M. A. Khan**, H. Menouar and M. Abdallah, Adaptive Resource Allocation in V2X Network Slice, *IEEE Transactions on Network and Service Management (TNSM)*, 2025.

[R3] **M. A. Khan**, H. Menouar, and M. Abdallah, Autonomous Systems Need Theory-of-Mind Models for Pedestrian Hazard Prediction, in *IEEE Intelligent Transportation Systems Magazine*.

[R4] J. Khan and **M. A. Khan**, Drone-aided Plants Health Monitoring using Enhanced Vision Transformer, *IEEE Access*, 2025.

[R5] J. Khan, **M. A. Khan**, N. Saeed, P. L. Cayrel, and C. Hahn, Intrusion Detection Systems for In-Vehicle Networks: Protocols, Applications, and Challenges, *IEEE Access*, 2025.

[R6] **M. A. Khan**, H. Menouar and M. Al-Sada, Securing Human-Centered Data in Embodied Robotics, *Advanced Robotics*, 2025.

JOURNAL
ARTICLES

[J1] **M. A. Khan**, H. Menouar and M. Abdallah, Revisiting the Intrusion Detection in In-Vehicle Networks, *IEEE Transactions on Intelligent Transportation Systems (T-ITS)*, Nov 2025.

[J2] **M. A. Khan** and H. Menouar, Trust and Privacy in Commercial and Recreational Drones Navigation, *IEEE Transactions on Technology and Society (TTS)*, Oct 2025.

[J3] **M. A. Khan**, LLM-Driven Real-Time Threat Prediction and Response for Internet of Energy, in *IEEE Network*, 2025.

[J4] **M. A. Khan**, H. Menouar and R. Hamila, Crowd Counting at the Edge using Weighted Knowledge Distillation, in *Nature Scientific Reports*, Feb 2025.

[J5] **M. A. Khan**, H. Menouar and R. Hamila, Accelerating Learning with Fixed Time Budget, *Neural Computing and Applications*, 37, 4869–4879 (2025).

[J6] **M. A. Khan**, H. Menouar and M. Abdallah, LiDAR in Connected and Autonomous Vehicles - Perception, Threat Model, and Defense, *IEEE Transactions on Intelligent Vehicles*, 2024

[J7] M. Almehdhar, A. Albaseer, **M. A. Khan**, M. Abdallah, H. Menouar, S. Al-Kuwari, and A. Al-Fuqaha, Deep Learning in the Fast Lane: A Survey on Advanced Intrusion Detection Systems for Intelligent Vehicle Networks, in *IEEE Open Journal of Vehicular Technology*, vol. 5, pp. 869-906, 2024.

[J8] M. Ishtiaq, N. Saeed and **M. A. Khan**, Edge Computing in IoT: A 6G Perspective, *IEEE IT Professional*, 2024.

[J9] L. Hamad, **M. A. Khan** and A. Mohamed, Object Depth and Size Estimation using Stereo-vision and Integration with SLAM, *IEEE Sensors Letters*, vol. 8, no. 4, pp. 1-4, April 2024.

[J10] N. Faiz, A. K. Gardiwal, **M. A. Khan**, and S. Iftikhar, "Dynamic prediction of survival via Landmark method using the asthma prevention trial in young children", *PLOS One*, 2023 Nov 30;18(11).

[J11] **M. A. Khan**, H. Menouar, and R. Hamila, Visual Crowd Analysis - Open Research Problems," in *AI Magazine (AAAI)*, vol. 44, no. 3, pp. 296–311, Fall 2023.

[J12] **M. A. Khan**, H. Menouar, and R. Hamila, "LCDnet: A Lightweight Crowd Density Estimation Model for Real-time Video Surveillance," in *Journal of Real-Time Image Processing*., 20, 29, 2023.

[J13] **M. A. Khan**, H. Menouar, and R. Hamila, Revisiting Crowd Counting: State-of-the-art, Trends, and Future Perspectives. in *Image and Vision Computing*., 129, 104597, 2022.

[J14] **M. A. Khan**, H. Menouar, A. Eldeeb, A. Abu-Dayya, and F. D. Salim, "On the Detection of Unauthorized Drones—Techniques and Future Perspectives: A Review," in *IEEE Sensors Journal*, vol. 22, no. 12, pp. 11439-11455, 15 June 15, 2022.

[J15] **M. A. Khan**, R. Hamila, A. Erbad, and M. Gabbouj, "Distributed Inference in Resource-Constrained IoT for Real-Time Video Surveillance," in *IEEE Systems Journal*, 2022

[J16] **M. A. Khan**, A. Erbad, R. Hamila and E. Baccour, "CODE: Computation Offloading in D2D-Edge System for Video Streaming" in *IEEE Systems journal*.

[J17] **M. A. Khan**, E. Baccour, Z. Chkirbene, A. Erbad, R. Hamila, H. Hamdi, and M. Gabbouj, "A Survey on Mobile Edge Computing for Video Streaming: Opportunities and Challenges," in *IEEE Access*, vol. 10, pp. 120514-120550, 2022.

[J18] **M. A. Khan**, R. Hamila, A. Gastli, S. Kiranyaz, and N. A. Al-Emadi, "ML-based Handover Prediction and AP Selection in Cognitive Wi-Fi Networks", *Journal of Network and Systems Management*. 2022 Oct;30(4):1-21

[J19] D. Unal, M. Hammoudeh, **M. A. Khan**, A. Abuarqoub, G. Epiphaniou, R. Hamila, "Integration of Federated Machine Learning and Blockchain for the Provision of Secure Big Data Analytics for Internet of Things", *Computers and Security*, Jul. 2021

[J20] **M. A. Khan**, R. Hamila, N. A. Al-Emadi, M. S. Kiranyaz, and M. Gabbouj, "Real-time Throughput Prediction for Cognitive Wi-Fi Networks", *Journal of Network and Computer Applications*, vol. 150, pp. 245-258, Sep. 2020.

[J21] **M. A. Khan**, R. Hamila and M. O. Hasna, "Optimal Group Formation in Dense Wi-Fi Direct Networks for Content Distribution," in *IEEE Access*, vol. 7, pp. 161231-161245, 2019.

[J22] K. Shaaban, **M. A. Khan**, and R. Hamila, Effect of Distance between Ramp and Upstream Signal on Ramp Meter Operation", *Journal of Traffic and Transportation Management*, vol. 1, no. 2, pp. 43–49, 2020.

[J23] **M. A. Khan**, R. Hamila, M. S. Kiranyaz, and M. Gabbouj, "A Novel UAV-Aided Network Architecture Using Wi-Fi Direct", in *IEEE Access*, vol. 7, pp. 67305-67318, 2019.

[J24] K. Shaaban, **M. A. Khan**, R. Hamila and M. Ghanim, "A Strategy for Emergency Vehicle Preemption and Route Selection", *Arabian Journal for Science and Engineering* 83 (2019): 1-9.

[J25] **M. A. Khan**, W. Cherif, F. Filali and R. Hamila, "Wi-Fi direct research-Current status and future perspectives", *Journal of Network and Computer Applications*, vol. 93, pp. 245-258, Sep. 2017.

[J26] K. Shaaban, **M. A. Khan**, and R. Hamila, "Literature Review of Advancements in Adaptive Ramp Metering", *Procedia Computer Science* 83 (2016): 203-211.

CONFERENCE PAPERS

[C1] T Jano, R. Hamila, **M. A. Khan**, F. Touti, and M. Kharbeche, Density Map Modeling on the Edge: Towards Sustainable Agri-Food Supply Chains, in 13th European Workshop on Visual Information Processing (*EUVIP 2025*)

[C2] **M. A. Khan**, N. Neji, H. Tabia, and H. Menouar, "Next-Generation Disaster Management using Drones, AI, and Generative Models," International Conference on Drones and Unmanned Systems (*DAUS' 2025*), 9-21 February 2025, Granada, Spain [Accepted]

[C3] **M. A. Khan**, H. Menouar, A. Nassar and M. Abdallah, "Visual Deception: Demonstrating Spoofing Attacks on Autonomous Vehicle Cameras," 2024 International Conference on Future Technologies for Smart Society (*IEEE ICFTSS*), Kuala Lumpur, Malaysia, 2024, pp. 165-168

[C4] Z. Ahmad, S. A. Al-Maadeed and **M. A. Khan**, "Enhanced Diagnostic of Pulmonary Embolism Detection using DenseNet and XGBoost," 2024 International Conference on Future Technologies for Smart Society (*IEEE ICFTSS*), Kuala Lumpur, Malaysia, 2024, pp. 106-111

[C5] K. Shaaban, **M. A. Khan**, H. Menouar, and R. Hamila, Advanced Mobility: Integrating Visible Light Communication and Sensing Technologies, in Intermountain Engineering, Technology, and Computing Conference (*IEEE i-ETC*), Utah, USA, 2024.

[C6] **M. A. Khan**, H. Menouar, and R. Hamila, Crowd Counting in Harsh Weather using Image Denoising with Pix2Pix GANs, in Thirty-Eighth International Conference on Image and Vision Computing (*IEEE IVCNZ*), 2024.

[C7] **M. A. Khan**, H. Menouar, and R. Hamila, Multimodal Crowd Counting with Pix2Pix GANs, in

19th International Conference on Computer Vision Theory and Applications (*IAPR VISAPP*) 2024, Rome, Italy.

[C8] L. Hamad, **M. A. Khan**, H. Menouar, F. Filali, and A. Mohamed, Haris: an advanced autonomous mobile robot for smart parking assistance, in 2024 IEEE International Conference on Consumer Electronics (*IEEE ICCE*), Las Vegas, NV, USA, 2024, pp. 1-6.

[C9] **M. A. Khan**, H. Menouar, and R. Hamila, Curriculum for Crowd Counting - Is it Worthy?, " in 19th International Conference on Computer Vision Theory and Applications (*IAPR VISAPP*), Rome, Italy, 2024.

[C10] I. Mrad, E. Baccour, R. Hamila, **M. A. Khan**, A. Erbad, M. Hamdi, "RL-CEALS: Reinforcement Learning for Collaborative Edge Assisted Live Streaming", in 28th IEEE Symposium Computers and Communications (*IEEE ISCC*) 9 -12 July, Tunis Tunisia.

[C11] **M. A. Khan**, R. Hamila, and H. Menouar, "CLIP: Train Faster with Less Data" , in 2023 IEEE International Conference on Big Data and Smart Computing (*IEEE BigComp*), Jeju, Korea, Republic of, 2023, pp. 34-39.

[C12] **M. A. Khan**, H. Menouar, and R. Hamila, "Crowd Density Estimation Using Imperfect Labels" , 2023 IEEE International Conference on Consumer Electronics (*IEEE ICCE*), Las Vegas, NV, USA, 2023, pp. 1-6.

[C13] **M. A. Khan**, H. Menouar, and R. Hamila, "DroneNet: Crowd Density Estimation using Self-ONNs for Drones" , 2023 IEEE 20th Consumer Communications and Networking Conference (*IEEE CCNC*), Las Vegas, NV, USA, 2023, pp. 455-460.

[C14] **M. A. Khan**, H. Menouar, O. M. Khalid and A. Abu-Dayya, "Unauthorized Drone Detection: Experiments and Prototypes," 2022 IEEE International Conference on Industrial Technology (*IEEE ICIT*), Shanghai, China, 2022, pp. 1-6.

[C15] **M. A. Khan**, H. Menouar, and R. Hamila, "Drones-aided Asset Maintenance in Hospitals, in 2nd International Conference on Computers and Automation (CompAuto 2022), August 18-22, 2022, Paris, France

[C16] K. Shaaban, **M. A. Khan**, I. Kim and R. Hamila, "Queue Discharge at Freeway On-Ramps Using Coordinated Operation of a Ramp Meter and an Upstream Traffic Signal", Procedia Computer Science, Volume 170, 2020, Pages 347-353, ISSN 1877-0509

[C17] K. Rahman, S. Mallick, **M. A. Khan**, "Travel Time Estimation using Multivariate Regression Model", In Qatar Foundation Annual Research Conference Proceedings Volume 2018 Issue 1 2018 Mar 21, Vol. 2016, No. 1, p. EEPD1051.

[C18] W. Cherif, **M. A. Khan**, F. Filali, S. Sharafeddine, Z. Dawy, "P2P Group Formation Enhancement for Opportunistic Networks with Wi-Fi Direct", Proc. IEEE Wireless Commun. Netw. Conf. (*IEEE WCNC*), pp. 1-6, Mar. 2017.

[C19] **M. A. Khan**, W. Cherif, F. Filali and R. Hamila, "Realization of Dual-Hop Networks in Wi-Fi Direct and Performance Evaluation", 2017 IEEE International Conference on Internet of Things (iThings) and IEEE Green Computing and Communications (GreenCom) and IEEE Cyber, Physical and Social Computing (CPSCom) and IEEE Smart Data (SmartData), Exeter, 2017, pp. 552-559.

[C20] **M. A. Khan**, W. Cherif, F. Filali, "Group Owner Election in Wi-Fi Direct", Proc. IEEE Annu. Ubiquitous Comput. Electron. Mobile Commun. Conf. (*IEEE UEMCON*), pp. 1-9, Oct. 2016.

[C21] **M. A. Khan**, R. Hamila and K. Shaaban., "Mitigation of Traffic Congestion Using Ramp Metering on Doha Expressway", In Qatar Foundation Annual Research Conference Proceedings Volume 2016 Issue 1 2016 Mar 21, Vol. 2016, No. 1, p. ICTSP2224.

[C22] M. Shah, **M. A. Khan**, T. Mahmood, K. Islam, and J. Akbar, "Generation of orthogonally polarized chaotic waveforms for secure optical communication" 2013 IEEE 9th International Conference on Emerging Technologies (*IEEE ICET*), Islamabad, 2013, pp. 1-5.

[C23] **M. A. Khan**, S. Zakiuddin and J. Ahmad, "Cross-layer optimization of dynamic source routing protocol using IEEE 802.11e based medium awareness", 2013 3rd IEEE International Conference on Computer, Control, and Communication (*IEEE IC4*), Karachi, 2013, pp. 1-6.

[C24] M. S. Khan, S. Bashir, **M. A. Khan**, and K. Asaf, "Design and integration of dual-band

textile antenna with high impedance surface", 2013 IEEE 9th International Conference on Emerging Technologies (*IEEE ICET*), Islamabad, 2013, pp. 1-6.

[C25] **M. A. Khan** and S. Zakiuddin, "Research review of the development of novel routing algorithms for mobile Ad-hoc networks", Eighth International Conference on Digital Information Management (ICDIM 2013), 2013, pp. 61-66

BOOKS

[B1] N. Saeed and **M. A. Khan**, *"Localization in Wireless Networks, Technologies, and Applications"*, Wiley-IEEE Press, 2024 [In Press]

BOOK CHAPTERS

[B1] R. Amin, **M. A. Khan**, "Large Language Models in Healthcare: Opportunities, Applications, and Challenges" in LLMs in Healthcare, 2025 [In Press]

[B2] N. Saeed and **M. A. Khan**, "Introduction to Wireless Localization" in Localization in Wireless Networks - Technologies and Application, 2025 [In Press]

[B3] **M. A. Khan**, N. Saeed, and H. Menouar, "Localization Technologies" in Localization in Wireless Networks - Technologies and Application, 2025 [In Press]

[B4] **M. A. Khan**, and M. A. Ahmadon, "Mobile Edge Computing for the Next Generation Massive Internet of Things" in Evolution of Information, Communication and Computing System, 2023

[B5] **M. A. Khan**, M. A. Ahmadon, N. A. A. Rauf, A. M. Zaid, A. K. Mahamad, S. Saon, N. S. A. M. Taujuddin, and A. Jamil, "Implementation and Simulation of UDP Client Server Environment using Contiki Cooja Simulator." 2023.

DATASETS

[D1] J. Haddad, **M. A. Khan**, F. Filali, and H. Menouar "RoadSense: Mapping road surface using crowdsource data" in IEEE Dataport, 2025, doi: `10.21227/3j8p-dc32`.

KEYNOTES & TALKS

o [Invited Talk] Intelligent Edge for 6G and Massive IoT Systems, in *IEEE MCSoC*, Singapore, December 15-18, 2025.
o [Keynote] Real-time Crowd Counting at the Edge, in ICVPRD, Chongqing (China), October 25-26, 2025.
o [Keynote] TinyML Techniques for IoT, in *IEEE ICIMCC*, Wuhan, China, December 12-14, 2025.
o [Keynote] Revisiting Visual Crowd Counting, in ASGT, Nanchang (China), August 22-24, 2025.
o [Invited Talk] Real-time Crowd Counting at the Edge, in *IPMV*, Hong Kong, January 10-12, 2025.
o [Invited Talk] Intelligent Edge for 6G and Massive IoT Systems, in the *IEEE ICNGN*, Bangkok, Thailand.
o [Invited Talk] Machine Learning in Mobile Edge Computing - Recent Trends, Opportunities, and Challenges, in MLIS, October 25-28, 2020, UK
o [Tutorial] Mobile Edge Computing for Massive IoT (MIoT) Systems, in 10th IEEE International Symposium on Networks, Computers, and Communications (*IEEE ISNCC*), Qatar. October 23-26, 2023.
o [Guest Lecture] Network Slicing in 5G, at College of Engineering, Qatar University, Doha, Qatar, April 11, 2023.
o [Media] Generative AI in FM Procurement, interview published in Facilitate - the official magazine of IWFM UK).
o [Media] ABC of AI, in Facilitate - the official IWFM magazine, Mar 2021 Issue

SERVICES

JOURNAL EDITORIAL BOARDS

o *Associate Editor*, IEEE Transactions on Neural Network and Learning Systems (TNNLS) **Jan 2025 - Present**
o *Associate Editor*, IEEE Transactions on Consumer Electronics (TCE) **July 2024 - June 2026**
o *Associate Editor*, IEEE Transactions on Technology and Society (TTS) **May 2024 - May 2026**
o *Associate Editor*, IEEE Signal Processing Letters (SPL) **August 2025 - Present**
o *Associate Editor*, IEEE Future Directions Technology Policy and Ethics **Apr 2021 - Present**
o Editorial Board Member, Computer Systems Science and Engineering (CSSE) **Feb 2024 -**

Feb 2026

o Editorial Board Member, Frontiers in Communications and Networks **Feb 2021 - Present**

o Guest Editor, Frontiers in Communications and Networks **2020**

GRANT REVIEWER	o Expert reviewer at European Science Foundation (ESF)

JOURNAL REVIEWER	o IEEE Transactions on Artificial Intelligence (TAI)
	o IEEE Transactions on Neural Networks and Learning Systems (TNNLS)
	o IEEE Transactions on Machine Learning in Communications and Networking (TMLCN)
	o IEEE Transactions on Mobile Computing (TMC)
	o IEEE Transactions on Vehicular Technology (TVT)
	o IEEE Transactions on Emerging Topics in Computing (TETC)
	o IEEE Transactions on Systems, Man, and Cybernetics (SMC)
	o IEEE Transactions on Consumer Electronics (TCE)
	o IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)
	o IEEE Transactions on Microwave Theory and Techniques (TMTT)
	o IEEE Transactions on Multimedia (TMM)
	o IEEE Transactions on Dependable and Secure Computing (TDSC)
	o IEEE Communications Surveys and Tutorials (COMST)
	o IEEE Communications Magazine (COMMAG)
	o IEEE Wireless Communication Magazine (WCM)
	o IEEE Wireless Communications Letters (WCL)
	o IEEE Communication Standards Magazine (COMSTD)
	o IEEE Internet of Things Journal (IOT)
	o IEEE Internet of Things Magazine (IOTMAG)
	o IEEE Networking Letters (NL)
	o IEEE Systems Journal (ISJ)
	o IEEE Sensors Journal (Sens. J.)
	o IEEE Sensors Letters (SENSL)
	o IEEE Transactions on Aerospace and Electronic Systems (TAES)
	o IEEE Access
	o IEEE Open Journal of the Communication Society (OJCOMS)
	o IEEE Open Journal of Vehicular Technology (OJVT)
	o Nature Scientific Reports
	o IET Communications
	o IET Intelligent Transportation System
	o Elsevier Future Generation Computer Systems (FGCC)

CONFERENCE PC CHAIR	o *Area Chair* of International Joint Conference on Neural Networks (IJCNN), 2025
	o *Workshop Co-Chair* of Workshop on Intelligent Offloading, Resource Optimization, and Localization in Pervasive Computing Environments (IOROL), 2025
	o *TPC Co-Chair* at IEEE International Conference on Future Technologies for Smart Society (ICFTSS), 2024
	o *Program Co-Chair* at International Conference on Computers and Automation 2023-2024.
	o *Program Co-Chair* at International Conference on Control, Robotics Engineering Technology 2024.
	o *Tutorial Chair* at IEEE Gaming, Entertainment, and Media Conference (GEM), 2023
	o Session Chair at Innovation and Technological Advances for Sustainable Development 2023.
	o Session Chair at "IEEE 41st International Conference on Consumer Electronics (ICCE), 2023
	o Session Chair at International Conference on Computers and Automation (CompAuto 2022).
	o *Workshop Co-Chair* at Sensing, Communication, and Localization in 6G (6GIoTT 2022).

CONFERENCE PC MEMBER	o Conference on Neural Information Processing Systems (NeurIPS), 2024-2025
	o IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), 2025
	o International Conference on Computer Vision (ICCV), 2025
	o International Joint Conference on Neural Networks (IJCNN), 2025
	o IEEE International Conference on Communications (ICC), 2021-2025
	o IEEE Global Communications Conference (GLOBECOM), 2024-2025
	o IEEE Consumer Communications and Networking Conference (CCNC), 2021-2026
	o IEEE Vehicular Technology Conference (VTC), 2023-Fall
	o IEEE International Conference on Consumer Electronics (ICCE-Berlin), 2023-2026

- o IEEE Conference on Technologies for Sustainability (SusTech), 2020-2025
- o Asia Conference on Computer Vision, Image Processing, and Pattern Recognition (CVIPPR), 2024
- o IEEE BigData, 2020
- o IEEE International Conference on Acoustics, Speech & Signal Processing (ICASSP), 2020-25
- o IEEE Sensors, 2020
- o International Telecommunication Networks and Applications Conference (ITNAC), 2025
- o IEEE International Wireless Communications and Mobile Computing Conference (IWCMC), 2023
- o IEEE International Workshop on Communication and Networking for Swarms Robotics (ROBO-COM), 2024
- o ACM 9th International Conference on Multimedia Systems and Signal Processing 2024
- o IEEE 4th World Forum on Internet of Things (WF-IoT 2018)

SOCIETY MEMBERSHIPS

Note:- Some memberships may not be currently active!
- o IEEE Communication Society (ComSoc)
- o IEEE Computer Society (CompSoc)
- o IEEE Signal Processing Society (SPS)
- o IEEE Industrial Electronics Society (IES)

TECHNICAL COMMITTEES

- o IEEE TCCC: CompSoc's TC on Computer Communications
- o IEEE TCPAMI: CompSoc's TC on Pattern Analysis and Machine Intelligence
- o IEEE MDA: CTSoc's TC on ML, DL and AI in CE
- o IEEE IOT: CTSoc's TC on Internet of Things
- o IEEE VTS TC on Autonomous Vehicles
- o IEEE VTS TC SAGW Integrated Communication Systems
- o IEEE Internet of Things Community
- o IEEE Sensors Council

PROJECTS SUPERVISED

1. **RoadSense: Road condition monitoring using smartphone sensors**
   Collected dataset of mobile sensor data (`accelerometer, gyroscope, GPS`), camera footage (video), and CAN bus data (`brake and speed data via OBD-II`), and designed an AI system to automatically detect and map road surface anomalies (smooth asphalt road, speed-bumps, speed humps, pot-holes, earthern road, etc.).
   The dataset is available at: https://dx.doi.org/10.21227/3j8p-dc32.

2. **Crowd queue length (counting) estimation for metro stations**
   Developed a crowd counting and queue length estimation model and deployment over `NVIDIA Jetson Nano` device for real-time crowd statistics. The scope includes data collection, annotation, custom crowd model training and evaluating, model finetuning, conversion to `TensorRT` format, deployment over `NVIDIA Jetson Nano` device. Two `PTZ cameras` are installed after manual calibrations to collect data via `MQTT`, performed real-time predictions, and serve statistics to the client interface in real-time. The system was operated during the FIFA world cup matches in stadium and metro stations to estimate spectators' queues length to provide estimates for metro station resource management. The project is later integrated into QMIC's **Falcon-I** platform for smart cities.

3. **Acoustic detection and localization of noisy vehicles**
   Collected vehicular traffic sound data, analyzed using signal processing tools (`SNR, RMS, zero-crossing rate, fast fourier transform, and spectograms`). Designed a sound source localization (SSL) system to detect and localize noisy cars and motorbikes on roads using traditional techniques (`GCC-PHAT, SRP-PHAT`), and machine learning methods (`SVM, RF, RNN, LSTM`).
   The project details are available at: https://github.com/muasifk/TrafficSSL.

4. **Detection of unauthorized drones in lower airspace**
   Designed a prototype for drone detection using sensor-fusion (acoustic + RF + visual), and developed an attribute-based encryption-based scheme to detect unauthorized drones in the lower-airspace. For acoustic detection, we used a `ReSpeaker 4-mic array` and `RaspberryPi` processor with `Open EmbeddeD Audition System (ODAS)` GUI. For RF detection, we used `E312 USRP (by Ettusresearch™)` with a 2x2 MIMO transceiver. For visual detection, we

used a PTZ camera `WizSense series` (model# `SD6CE445XA-HNR`), and `Jetson Xavier` device.

5. **Intelligent construction safety violation system (iVDS).**
Designed an AI-based system to automatically detect safety violations (e.g., persons not wearing PPEs such as safety helmet, safety vest, safety goggles) in construction sites in Qatar. The project involves data collection, annotation, and AI modeling using `YOLO, Faster-RCNN`.

COURSES
- o Chartered Engineer, EC UK
- o Juniper Networks Certified Internet Associate - JNCIA
- o IPv6 Forum Certified Network Engineer, IPv6 Forum
- o 4G Mobile and Future Internet, ITU Academy
- o Mobile Broadband: LTE/LTE-Advanced, WiMAX and WLAN, ITU Academy
- o Future Internet, ITU Academy
- o Migration to IPv6, ITU Academy
- o TensorFlow Specialization, Andrew Ng (Deeplearning.ai)
- o Deep Learning Specialization, Andrew Ng (Deeplearning.ai)
- o Machine Learning, Andrew Ng (Stanford University)
- o Introduction to On-device AI, Qualcomm
- o Fundamentals of Accelerated Computing with CUDA Python, NVIDIA
- o Getting Started with AI and Jetson Nano, NVIDIA
- o Introduction to IoT, Stanford University.
- o Machine Learning School 2019, BigML and QCRI, Doha, Qatar
- o Supervising Doctoral Studies, Epigeum, Oxford University Press
- o Certified Peer Reviewer, Web of Science Academy
- o Certified Peer Reviewer, Elsevier
- o Certified Peer Reviewer, ACM
- o Mentor Community and Training, Coursera
- o IBM Maximo, Asset, Inventory, and Work Order Management

SKILLS
- o **Programming:** Python, C++
- o **ML/DL frameworks:** Scikit-learn, PyTorch, TensorFlow, Keras.
- o **LLMs:** LLMs pretraining, finetuning, and deployment, prompt engineering, RAG.
- o **Scientific computation:** OpenCV, Numpy, Scipy, Pandas, ...
- o **Simulators:** ns-3, sumo, CARLA, Riverbed Modeler.
- o **Image/Sound/Text Processing:** OpenCV, Open3D, Librosa, Beautiful Soup
- o **Visualization:** Matplotlib, Plotly, Seaborn
- o **GPU/Edge:** Cuda, ONN, TensorRT, NVIDIA Jetson edge devices
- o **ML/DL Models** MLP, SVM, RF, DT, XGBoost, LSTM, CNNs, ViTs, DRL, FL

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