

Muhammad Asif Khan

Research Scientist at Qatar Mobility Innovations Center, Qatar.

Associate Editor of IEEE (TNNLS, TCE, TTS, SPL)

Web: <https://muasifk.github.io/>

Google Scholar: <https://scholar.google.com/citations?user=BgUrPm8AAAAJ&hl>

CONTACT DETAILS

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RESEARCH INTERESTS

LLMs, Tiny ML, edge-AI, neuromorphic computing, IoT, autonomous vehicles, mobile computing.

EDUCATION

Ph.D. in Electrical Engineering 2014 - 2019

Qatar University, Doha, Qatar

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 2005 - 2009

University of Engineering and Technology Peshawar, Pakistan

RESEARCH EXPERIENCE

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

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

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

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

GRANTS & AWARDS

- o **Best Presenter**, at IEEE ICFTSS, Kuala Lumpur, Malaysia, Aug 2024
- 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)

PROJECTS SUPERVISED

1. **RoadSense: Road condition monitoring using smartphone sensors**
[Brief] Collect dataset of mobile sensor data (accelerometer, gyroscope, GPS), camera footage (video), and CAN bus data (brake, speed), to design an AI to automatically detect and record road surface anomalies.
2. **Acoustic detection and localization of noisy vehicles**
[Brief] Design an AI-based system to detect and localize noisy cars and motorbikes on roads.
3. **Intelligent construction safety violation system (iVDS).**
[Brief] Design an AI-based system to automatically detect safety violations (e.g., not wearing PPEs) in construction sites in Qatar.
4. **Crowd queue length (counting) estimation for metro stations**
[Brief] Develop crowd counting and queue length estimation model and deployment over NVIDIA edge devices for real-time crowd statistics.

COURSES TAUGHT	<ul style="list-style-type: none"> o STAT-819 Advanced Machine Learning (Spring-2024) o STAT-836 Advanced Techniques and Logical Reasoning (Fall-2023)
THESIS SUPERVISED	<ul style="list-style-type: none"> o Co-Supervisor (Thesis title: "Curriculum Learning for Monocular Depth Estimation in Disaster Management using UAVs", by Mr. Jorge Turriate, Master M2 EEEA MMVAI), Université d'Evry Paris-Saclay, France. (2025) o Thesis Co-advisor (Thesis title: "", by Mr. Samiullah), Abdul Wali Khan University, Mardan, Pakistan. (2023-24)
MENTORSHIP	<ul style="list-style-type: none"> 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)
KEYNOTES & TALKS	<ul style="list-style-type: none"> 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] 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
PUBLICATIONS	
UNDER REVIEW	<p>[R1] M. A. Khan, H. Menouar and M. Abdallah, Adaptive Resource Allocation in V2X Network Slice, <i>IEEE Transactions on Vehicular Technology</i>, 2025 [Submitted].</p> <p>[R2] M. A. Khan and H. Menouar, Trust and Privacy in Route Planning for Amateur and Commercial Drones, <i>IEEE Transactions on Technology and Society</i>, 2025 [Submitted].</p> <p>[R3] M. A. Khan, LLM-Driven Real-Time Threat Prediction and Response for Internet of Energy (IoE), <i>IEEE Network</i>, 2025 [Submitted]</p> <p>[R4] M. A. Khan, H. Menouar and M. Abdallah, Revisiting the Intrusion Detection in In-Vehicle Networks, <i>IEEE Transactions on Intelligent Transportation Systems</i>, 2024 [Submitted].</p> <p>[R5] M. A. Khan and L. Hamad, On the Capability of LLMs in Combinatorial Optimization, <i>Annals of Mathematics and Artificial Intelligence</i>, 2025 [Submitted].</p> <p>[R6] M. A. Khan, H. Menouar, and M. Abdallah, Autonomous Systems Need Theory-of-Mind Models for Pedestrian Hazard Prediction, in International Conference on Computer Vision (ICCV2025) [Submitted]</p> <p>[R7] J. Khan and M. A. Khan, Drone-aided Plants Health Monitoring using Enhanced Vision Transformer, <i>IEEE Transactions on Consumer Electronics</i>, 2025 [Submitted]</p> <p>[R8] 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) [Submitted]</p>
JOURNAL ARTICLES	<p>[J1] M. A. Khan, H. Menouar and R. Hamila, Crowd Counting at the Edge using Weighted Knowledge Distillation, in <i>Nature Scientific Reports</i>, Feb 2025.</p>

- [J2] **M. A. Khan**, H. Menouar and R. Hamila, Accelerating Learning with Fixed Time Budget, *Neural Computing and Applications*, 37, 4869–4879 (2025).
- [J3] **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
- [J4] 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.
- [J5] M. Ishtiaq, N. Saeed and **M. A. Khan**, Edge Computing in IoT: A 6G Perspective, *IEEE IT Professional*, 2024.
- [J6] 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.
- [J7] 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" 2023 Nov 30;18(11).
- [J8] **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.
- [J9] **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.
- [J10] **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.
- [J11] **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.
- [J12] **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
- [J13] **M. A. Khan**, A. Erbad, R. Hamila and E. Baccour, "CODE: Computation Offloading in D2D-Edge System for Video Streaming" in *IEEE Systems journal*.
- [J14] **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.
- [J15] **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
- [J16] 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
- [J17] **M. A. Khan**, R. Hamila, N. A. Al-Emadi, M. S. Kiranyaz, and M. Gabbouj, "Real-time Throughput Prediction for Cognitive Wi-Fi Networks", *J. Netw. Comput. Appl.*, vol. 150, pp. 245-258, Sep. 2020.
- [J18] **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.
- [J19] 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.
- [J20] **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.
- [J21] 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.
- [J22] **M. A. Khan**, W. Cherif, F. Filali and R. Hamila, "Wi-Fi direct research-Current status and future perspectives", *J. Netw. Comput. Appl.*, vol. 93, pp. 245-258, Sep. 2017.

- [C1] **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]
- [C2] **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 (ICFTSS), Kuala Lumpur, Malaysia, 2024, pp. 165-168
- [C3] 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 (ICFTSS), Kuala Lumpur, Malaysia, 2024, pp. 106-111
- [C4] 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 (i-ETC), Utah, USA, 2024.
- [C5] **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, 2024.
- [C6] **M. A. Khan**, H. Menouar, and R. Hamila, Multimodal Crowd Counting with Pix2Pix GANs, in 19th International Conference on Computer Vision Theory and Applications (VISAPP 2024), Rome, Italy, 2024.
- [C7] 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 (ICCE), Las Vegas, NV, USA, 2024, pp. 1-6.
- [C8] **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 (VISAPP 2024), Rome, Italy, 2024.
- [C9] 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 (ISCC) 9 -12 July, Tunis Tunisia.
- [C10] **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 (BigComp), Jeju, Korea, Republic of, 2023, pp. 34-39.
- [C11] **M. A. Khan**, H. Menouar, and R. Hamila, "Crowd Density Estimation Using Imperfect Labels" , 2023 IEEE International Conference on Consumer Electronics (ICCE), Las Vegas, NV, USA, 2023, pp. 1-6.
- [C12] **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 (CCNC), Las Vegas, NV, USA, 2023, pp. 455-460.
- [C13] **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 (ICIT), Shanghai, China, 2022, pp. 1-6.
- [C14] **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
- [C15] 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
- [C16] 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.
- [C17] 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. (WCNC), pp. 1-6, Mar. 2017.
- [C18] **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.

- [C19] **M. A. Khan**, W. Cherif, F. Filali, "Group Owner Election in Wi-Fi Direct", Proc. IEEE Annu. Ubiquitous Comput. Electron. Mobile Commun. Conf. (UEMCON), pp. 1-9, Oct. 2016.
- [C20] **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.
- [C21] K. Shaaban, **M. A. Khan**, and R. Hamila, "Literature Review of Advancements in Adaptive Ramp Metering", *Procedia Computer Science* 83 (2016): 203-211.
- [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 (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 (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 (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] Nasir Saeed and **M. A. Khan**, "*Localization in Wireless Networks, Technologies, and Applications*", Wiley-IEEE Press, 2024 [In preparation]

BOOK CHAPTERS

- [B1] **M. A. Khan**, N. Saeed, and H. Menouar, "Localization Technologies" in Localization in Wireless Networks - Technologies and Application, 2025 [In Press]
- [B2] **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
- [B3] **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.

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**) **June 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 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 (6GloTT 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), 2021-2025
- o IEEE Vehicular Technology Conference (VTC), 2023-Fall
- o IEEE International Conference on Consumer Electronics (ICCE-Berlin), 2023
- o IEEE International Conference on Consumer Electronics (ICCE-Taiwan), 2024
- 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

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

REFERENCES

- o Prof. Ridha Hamila
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