

# Ashfaq Ahmed

## Curriculum Vitae

Dept. of Computer & Information Engineering,  
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### Selected Achievements

- **US Patent No. 12,381,829** (issued Aug 5, 2025): *Dropped-Packets Repair & Recovery for Delay-Tolerant Wireless Systems using Retroactive Interference Cancellation* (retroactive interference cancellation for reliable wireless delivery).
- **57 peer-reviewed publications** including **40 journals (30 Q1, 8 Q2)**, across venues such as *IEEE Internet of Things Journal*, *IEEE Transactions on Vehicular Technology*, and *IEEE Communications Surveys & Tutorials*.
- **PI/Leadership on major grants** including UAV monitoring and secure communications, including **KU RIG-2024 (2024–2027)** and **Saudi RCG (2025–2029)** on RID-based UAV monitoring.
- **Hardware security and reliable communications**: SPDM-based *zero-trust* chip-to-chip authentication; asynchronous NOMA and NOM protocols for high-throughput reliable links.
- **International presence**: Exhibited/presented at *IEEE ISCAS*, *SNAMS*, *IWCMC*, *IROS 2024*, and *TII SSRC Summits*.
- **Professional standing**: *IEEE Senior Member*; reviewer for leading IEEE/Elsevier journals.
- **Best Paper Award** (ITAS 2023) and multiple institutional research, teaching and services awards and honors.
- **Scholarly impact & service**: h-index **18**, i10-index **30**; supervision of PhD/MS theses; contributions to *Washington Accord* accreditation processes.

### Patents & Innovations

- **US Patent No. 12,381,829** (Issued: Aug 5, 2025).  
*Dropped-Packets Repair & Recovery for Delay-Tolerant Wireless Systems using Retroactive Interference Cancellation*.

### Major Grants & Leadership

- 2024 – 2027 **Khalifa University (KU) Research & Innovation Grant (RIG-2024)**  
**Title:** *A System for Wide-Area Monitoring and Surveillance of UAVs in Urban Airspace*.  
**Role:** Drafted the full proposal; served as a leading researcher responsible for key technical work and coordination.
- 2025 – 2029 **Saudi Basic Science Initiative, Research Consortium Grant (RCG)**  
**Title:** *Remote Identification Based UAV Monitoring System*.  
**Role:** Co-drafted major components of the proposal; serving as a leading researcher from KU, collaborating with KSU (PI) and University of Sharjah.
- 2017–2018 **NRPU – HEC Pakistan**  
**Title:** *A System for Health Monitoring of Railway*.  
**Role:** Principal Investigator

- 2015 – 2016 **HEC Startup Grant**  
**Title:** *Advanced LDPC Decoder Targeting Gbps Throughput.*  
**Role:** Co-Principal Investigator
- 2014 – 2015 **HEC Startup Grant**  
**Title:** *Efficient Hardware Interpolation Filter for HEVC (Low-Power Mobile Devices).*  
**Role:** Principal Investigator

## Professional Experience

- 2022 – Present **Postdoc Fellow** *Center for Cyber-Physical Systems (C2PS), Dept. of Computer & Information Engineering, Khalifa University, Abu Dhabi, UAE.*
- Real-time monitoring of commercial UAVs via fusion of computer vision and RID data; protocol for remote identification and crowd-sensing.
  - SPDM *zero-trust* chip, formal verification of SPDM; secure chip-to-chip communication and authentication.
  - City-scale pathloss heatmap (Abu Dhabi) for optimal ground sensor placement for RID capture.
  - Drafting proposals (internal/external), publishing in leading venues, co-supervising graduate/undergraduate students; annual teaching.
- 2020 – 2022 **Postdoc Fellow** *C2PS, Khalifa University, Abu Dhabi, UAE.*
- Asynchronous NOMA with offline packet repair/recovery; novel NOM protocols with optimal power allocation and ARQ.
  - Publications in prestigious journals.
- 2014 – 2021 **Assistant Professor** *Dept. of Electrical & Computer Engineering, COMSATS University Islamabad (Wah), Pakistan.*
- Teaching (UG/PG), supervising FYPs, MS/PhD theses; research and grants for lab establishment.
  - Program accreditation under *Washington Accord* (Convener, accreditation committee).
- 2007 – 2008 **Junior Lecturer** *Dept. of Computer Engineering, Bahria University, Islamabad, Pakistan.*
- Lab lectures for multiple programs; lab establishment and maintenance.

## Education

- 01/2011 – **PhD – Electronics & Telecommunication Engineering**  
02/2014 Politecnico di Torino, Torino, Italy  
Graduation grade: Good.
- 09/2008 – **MS – Electronics Engineering**  
11/2010 Politecnico di Torino, Torino, Italy  
Graduation grade: 97/100.
- 08/2003 – **BS – Computer Engineering**  
05/2007 Bahria University, Islamabad, Pakistan  
Graduation grade: 3.43/4.00.

## Awards & Honours

- Best Paper Award (ITAS 2023), Doha, Qatar.
- Research awards (COMSATS) 2014–15, 2015–16; performance honoraria (2015–16, 2016–17).

- o Fully funded HEC Scholarship for MS-leading-to-PhD (Politecnico di Torino, 2008–2013).
- o Letters of appreciation; HEC-approved PhD supervisor.

## Publications (Selected & Metrics)

Google Scholar Scopus ORCID

	Journals (A)				Conferences (B)	
	Published					Under Review
	Q1	Q2	Q3	None	2	17
	30	8	1	1		
Total	40					
Total publications	$A + B = 40 + 17 = \mathbf{57}$					

### Journals

1. A. Akbar, S. Jangsher, A. Ahmed, and A. Zafar, "GA-Optimized JT-CoMP F-NOMA in Het-nets: Adaptive Resource Allocation with Imperfect SIC", in *Elsevier Physical Communications* (Accepted) (Impact factor: 2.0, Q2 (SJR))
2. A. Ahmed, A. Al-Dweik, Y. Iraqi, H. Yahya and E. Damiani, "Intelligent NOMA-Based Wireless Backhauling for IoT Applications Without End-Device CSI," in *IEEE Open Journal of the Communications Society*, vol. 6, pp. 1070-1090, 2025 (Impact factor: 7.9, Q1 (SJR))
3. A. Ahmed, R. Alkadi, K. Belwafi, M. Atrouz and A. Shoufan, "Real-Time Mobile Crowd Sensing Model for Remote Detection of Flying UAVs," in *IEEE Open Journal of the Communications Society*, vol. 6, pp. 1103-1128, 2025 (Impact factor: 7.9, Q1 (SJR))
4. K. Belwafi, A. Shoufan, M. Alsafi, A. Ahmed and K. Han, "Hardware/Software Implementation of a Chip-to-Chip Communication Protocol Based on SPDM," in *IEEE Access*, vol. 12, pp. 194962-194972, 2024 (Impact factor: 3.4, Q1 (SJR))
5. A. Akbar, A. Ahmed, A. Zafar, and S. Jangsher, "An Energy-Efficient JT-CoMP enabled Framework with Adaptive OMA/NOMA in HetNets", in *Elsevier Computer Networks*, Vol. 254, pp. 110733, Dec. 2024 (Impact factor: 4.4, Q1 (SJR))
6. A. Ahmed, A. Al-Dweik, Y. Iraqi and E. Damiani, "Integrated Terrestrial-Wired and LEO Satellite With Offline Bidirectional Cooperation for 6G IoT Networks," in *IEEE Internet of Things Journal*, vol. 11, no. 9, pp. 15767-15782, May. 2024 (Impact factor: 10.6, Q1 (SJR))
7. M. Ahsan, A. Ahmed, H. Fida, A. Al-Dweik, U. S. Hashmi and A. Ahmad, "Efficient Network Slicing for 5G Services in Cloud Fog-RAN Deployment Over WDM Network," in *IEEE Transactions on Vehicular Technology*, vol. 72, no. 9, pp. 12099-12112, Sept. 2023 (Impact factor: 6.8, Q1 (SJR))
8. H. Yahya, A. Ahmed, E. Alsusa, and A. Al-Dweik, "Error Rate Analysis of NOMA: Principles, Survey and Future Directions", in *IEEE Open Journal of the Communications Society*, vol. 4, pp. 1682-1727, 2023 (Impact factor: 7.9, Q1 (SJR))
9. A. Ahmed, A. Shoufan and K. Belwafi, "Light-Weight Security Protocol and Data Model for Chip-to-Chip Zero-Trust," in *IEEE Access*, vol. 11, pp. 60335-60348, 2023 (Impact factor: 3.9, Q1 (SJR))

10. A. Ahmad, A. Ahmed, A. Al-Dweik, S. T. Ali, and A. Ahmad, "Merging Engine Implementation for Intra-Frame Sharing in Multi-Tenant Virtual Passive Optical Networks", in *IEEE/OSA Journal of Optical Communications and Networking*, Vol. 15, Issue 4, pp. 209-218, Mar 2023 (Impact factor: 5, Q1 (SJRI))
11. M. Ahsan, A. Ahmed, A. Al-Dweik and A. Ahmad, "Functional Split-Aware Optimal BBU Placement for 5G Cloud-RAN Over WDM Access/Aggregation Network", in *IEEE Systems Journal*, vol. 17, no. 1, pp. 122-133, March 2023 (Impact factor: 4.4, Q1 (SJRI))
12. B. S. Khan, S. Jangsher, A. Ahmed and A. Al-Dweik, "URLLC and eMBB in 5G Industrial IoT: A Survey", in *IEEE Open Journal of the Communications Society*, vol. 3, pp. 1134-1163, 2022 (Impact factor: 7.9, Q1 (SJRI))
13. F. Kalbat, A. Al-Dweik and A. Ahmed, "On the Performance of Precoded OFDM Systems in the Presence of Symbol Timing Offset", in *IEEE Transactions on Vehicular Technology*, vol. 71, no. 9, pp. 10120-10125, Sept. 2022 (Impact factor: 6.8, Q1 (SJRI))
14. M. Awais, M. Paara, and A. Ahmed, "Energy Efficient Design of Fast Fourier Transform using Reversible Logic", in *Elsevier Sustainable Energy Technologies & Assessments*, vol. 52, part C, pp. 102257, Aug 2022 (Impact factor: 8.4, Q1 (SJRI))
15. A. Mahmood, A. Ahmed, M. Naeem, M. R. Amirzada and A. Al-Dweik, "Weighted Utility Aware Computational Overhead Minimization of Wireless Power Mobile Edge Cloud", in *Elsevier Computer Communications*, vol. 190, pp. 178-189, Jun 2022 (Impact factor: 6, Q1 (SJRI))
16. H. Yahya, A. Al-Dweik, Y. Iraqi, E. Alsusa and A. Ahmed, "A Power and Spectrum Efficient Uplink Transmission Scheme for QoS-Constrained IoT Networks", in *IEEE Internet of Things Journal*, vol. 9, no. 18, pp. 17425-17439, Sept.15, 2022 (Impact factor: 10.8, Q1 (SJRI))
17. A. Ahmed, A. Al-Dweik, Y. Iraqi, H. Mukhtar, M. Naeem and E. Hossain, "Hybrid Automatic Repeat Request (HARQ) in Wireless Communications Systems and Standards: A Contemporary Survey", in *IEEE Communications Surveys & Tutorials*, vol. 23, no. 4, pp. 2711-2752, Fourthquarter 2021 (Impact factor: 35.6, Q1 (SJRI))
18. W. Walid, M. Awais, A. Ahmed, G. Masera, M. Martina, "Real-Time Implementation of Fast Discriminative Scale Space Tracking Algorithm", in *Journal of Real-time Image Processing*, May 2021 (Impact factor: 3, Q2 (SJRI))
19. A. Ahmed, M. Naeem, and A. Al-Dweik, "Joint Optimization of Sensors Association and UAVs Placement in IoT Applications with Practical Network Constraints", in *IEEE Access*, vol. 9, pp. 7674 – 7689, Jan. 2021 (Impact factor: 3.9, Q1 (SJRI))
20. I. Jadoon, M. A. Z. Raja, M. Junaid, A. Ahmed, A. U. Rehman, and M. Shoaib, "Design of evolutionarily optimized finite-difference based numerical computing for dust density model of nonlinear Van-der Pol Mathieu's oscillatory systems", in *Mathematics and Computers in Simulation*, vol. 181, pp. 444-470, Mar. 2021 (Impact factor: 4.6, Q2 (SJRI))
21. I. Jadoon, A. Ahmed, A. U. Rehman, M. Shoaib, and M. A. Z. Raja, "Integrated meta-heuristics finite difference method for the dynamics of nonlinear unipolar electrohydrodynamic pump flow model", in *Applied Soft Computing*, vol. 97, part A, pp. 106791, Dec. 2020 (Impact factor: 8.7, Q1 (SJRI))

22. T. Akram, M. Awais, R. Naqvi, A. Ahmed and M. Naeem, "Multicriteria UAV Base Stations Placement for Disaster Management", in *IEEE Systems Journal*, vol. 14, no. 3, pp. 3475-3482, Sept. 2020 (Impact factor: 4.4, Q1 (SJRI))
23. A. Mahmood, A. Ahmed, M. Naeem and Y. Hong, "Partial Offloading in Energy Harvested Mobile Edge Computing: A Direct Search Approach", in *IEEE Access*, vol. 8, pp. 36757-36763, 2020 (Impact factor: 3.9, Q1 (SJRI))
24. M. Ahmad, M. Ali, M. Naeem, A. Ahmed, M. Iqbal, W. Ejaz and A. Anpalagan, "Device-Centric Communication in IoT: An Energy Efficiency Perspective", in *Transactions on Emerging Telecommunications Technologies*, 31(2), e3750, 2020 (Impact factor: 3.6, Q2 (SJRI))
25. M. Ahmad, F. Alam, A. Ahmed, M. Naeem, M. Iqbal and T. Umer, "Energy Efficiency in Cognitive Radio Assisted D2D Communication Networks", in *Springer Telecommunication Systems*, vol. 71, issue 2, pp. 167-180, June 2019 (Impact factor: 2.5, Q2 (SJRI))
26. A. Ahmed, M. Ali, M. Naeem, M. Iqbal, U. Pareek, and A. A. Khan, "A Non-Orthogonal Cooperative Scheme for Multi-user CRN using Probabilistic Interference Constraint", in *Transactions on Emerging Telecommunications Technologies*, vol. 30(5), pages e3568, 2019 (Impact factor: 3.6, Q2 (SJRI))
27. M. Awais, A. Razzaq, A. Ahmed and G. Masera, "LDPC check node implementation using reversible logic", in *IET Circuits, Devices & Systems*, vol. 13, no. 4, pp. 443-455, 7 2019 (Impact factor: 1.3, Q3 (SJRI))
28. A. Ahmed, M. Awais, T. Akram, S. Kulac, M. Alhussein, and K. Aurangzeb, "Joint placement and device association of UAV base stations in IoT Networks", in *Sensors*, vol. 19(9), pages 2157, May 2019. (Impact factor: 3.9, Q1 (SJRI))
29. M. Awais, A. Ahmed, S. A. Ali, M. Naeem, W. Ejaz and A. Anpalagan, "Resource Management in Multicloud IoT Radio Access Network", in *IEEE Internet of Things Journal*, vol. 6, no. 2, pp. 3014-3023, April 2019 (Impact factor: 10.8, Q1 (SJRI))
30. M. Amjad, A. Ahmed, M. Naeem, M. Awais, W. Ejaz, and A. Anpalagan, "Resource Management in Energy Harvesting Cooperative IoT Network under QoS Constraints", in *Sensors* 2018, 18, 3560. (Impact factor: 3.9, Q1 (SJRI))
31. A. Ahmed, M. Awais, M. Iqbal, M. Naeem, and A. Anpalagan, "An insight to the performance of estimation of distribution algorithm for multiple line outage identification", in *Elsevier Swarm and Evolutionary Computation*, Volume 39, Pages 114-122, 2018 (Impact factor: 10, Q1 (SJRI))
32. A. Ahmed, M. Awais, M. Naeem, M. Iqbal, W. Ejaz, A. Anpalagan, and H. Kim, "Multiple Power Line Outage Detection in Smart Grids: A Probabilistic Bayesian Approach", in *IEEE Access*, Vol. 6, Issue 1, Pages 10650-10661, 2018. (Impact factor: 3.9, Q1 (SJRI))
33. M. Iqbal, M. Naeem, A. Anpalagan, A. Ahmed, and M. Azam, "Wireless Sensor Network Optimization: Multi-Objective Paradigm", in *Sensors* 2015, 15, 17572-17620. (Impact factor: 3.9, Q1 (SJRI))
34. M. U. Shahid, A. Ahmed, M. Martina, G. Masera, and E. Magli, "Parallel H.264/AVC Fast Rate-Distortion Optimized Motion Estimation by Using a Graphics Processing Unit and

Dedicated Hardware", in *IEEE Transactions on Circuits and Systems for Video Technology*, vol. 25, no. 4, pp.701,715, April 2015 (Impact factor: 8.4, Q1 (SJR))

35. A. Ahmed, A. U. Rehman, M. U. Shahid, "N-Point DCT Architecture for H265/HEVC", in *Hindawi VLSI Design*, 2012. <https://www.hindawi.com/journals/vlsi/2012/752024/>

### Preprints

1. F. Shahzad, A. Ahmed , H. M. U. Rahman, et al. "PHY Aware Virtual Network Embedding using Time-Domain Hybrid Modulation Formats in Optical Networks", *TechRxiv*. August 11, 2025. doi: 10.36227/techrxiv.175492094.40706246/v1
2. Akbar, Aamina and Jangsher, Sobia and Ahmed, Ashfaq and Zafar, Adnan, "GA-Optimized JT-CoMP F-NOMA in Hetnets: Adaptive Resource Allocation with Imperfect SIC". SSRN: <https://ssrn.com/abstract=5023137>
3. A. Ahmed, A. Al-Dweik, Y. Iraqi, H. Yahya, and E. Damiani, "Intelligent NOMA-Based Wireless Backhauling for IoT Applications without End-Device CSI", *TechRxiv*, Feb 13, 2024. doi: 10.36227/techrxiv.170779832.29157587/v1
4. Ahmed, A. and Alkadi, R. and Belwafi, K. and Shoufan, A., "Real-Time Mobile Crowd Sensing Model for Remote Detection of Flying UAVs". SSRN: <https://ssrn.com/abstract=4909953>
5. Akbar, Aamina and Ahmed, Ashfaq and Zafar, Adnan and Jangsher, Sobia, "An Energy-Efficient JT-Comp Enabled Framework with Adaptive OMA/NOMA in Hetnets". SSRN: <https://ssrn.com/abstract=4820783>

### Conference Proceedings

1. A. Ahmed and A. Shoufan, "Monitoring of UAVs Through Remote Identification and Mobile Crowd Sensing," *26th IEEE International Conference on Mobile Data Management (MDM)*, Irvine, CA, USA, 2025, pp. 240-245
2. A. Alhashmi, K. Belwafi, A. Ahmed and A. Shoufan, "Secure Authentication for Remote Drone Identification using ASTM Standards," *International Wireless Communications and Mobile Computing (IWCMC)*, Abu Dhabi, United Arab Emirates, 2025, pp. 883-889,
3. M. Ahsan, A. Ahmed, S. Ekin, J. O'Hara and A. Ahmad, "Traffic-Aware Network Slicing for 5G Networks in Cloud Fog-RAN over WDM Architecture," *International Conference on Smart Applications, Communications and Networking (SmartNets)*, Harrisonburg, VA, USA, 2024, pp. 1-6,
4. K. Belwafi, H. Alshamsi, A. Ahmed and A. Shoufan, "Enhancing Circuit Authentication through Secure Isolation," *IEEE International Symposium on Circuits and Systems (ISCAS)*, Singapore, Singapore, 2024, pp. 1-5.
5. A. Ahmed, M. Naeem, A. Ahmad and S. Ahmed, "Joint Trajectory, Power Profile and Harvested Energy Management in Cooperative UAVs," *Tenth International Conference on Social Networks Analysis, Management and Security (SNAMS)*, Abu Dhabi, United Arab Emirates, 2023, pp. 1-8.
6. K. Belwafi, H. Alshamsi, A. Ahmed and A. Shoufan, "Zero-Trust Communication between Chips," *IFIP/IEEE 31st International Conference on Very Large Scale Integration (VLSI-SoC)*, Dubai, United Arab Emirates, 2023, pp. 1-5.

7. S. Tariq, U. Saleem, S. Jangsher, A. Ahmed, and A. AlDweik, "Joint Power Allocation and Power Splitting Ratio for SWIPT-Enabled UAV Assisted Time-Shared Cooperative NOMA", *Innovation and Technological Advances for Sustainability (ITAS) 2023*, Doha, Qatar [Best Paper Award]
8. M. F. Khan, M. Azam, A. Ahmed, A. A. Khan, M. Naeem, and I. Alam, "Joint User Selection and Base Station Assignment Strategy in Smart Grid", *ICAETA*, 2021
9. S. Zeb, A. Ahmad, A. Ahmed, and A. Bianco, "Power Aware Data Center Placement in WDM Optical Networks", *IEEE CCNC*, 2021
10. M. Ali, M. Ahmad, M. Naeem, A. Ahmed, M. Iqbal, W. Ejaz, and A. Anpalagan, "Devices to Devices (Ds2Ds) Communication: Towards Energy Efficient IoT", *IEEE GLOBECOM*, Abu Dhabi, UAE, 2018, pp. 1-6
11. M. Ahmad, M. Naeem, A. Ahmed, M. Iqbal, and A. Alpalagan, "Utility based Resource Management in D2D Networks using Mesh Adaptive Direct Search Method", *VTC*, 19–21 Sept 2016
12. A. Ahmed, M. Awais, M. Naeem, M. Iqbal, and A. Alpalagan, "Efficient multiple lines outage detection in SmartGrid", *PGSRET*, 10–11 June 2015
13. M. U. Shahid, A. Ahmed, and E. Magli, "Parallel rate-distortion optimized fast motion estimation algorithm for H.264/AVC using GPU", *PCS*, 8–11 Dec 2013
14. A. Ahmed, M. U. Shahid, M. Martina, E. Magli, and G. Masera, "VLSI Architecture for Low-Complexity Motion Estimation in H.264 Multiview Video Coding", *Euromicro DSD*, 4–6 Sept 2013
15. A. Ahmed, M. Martina, and G. Masera, "Turbo decoder VLSI architecture with non-recursive max\* operator for 3GPP LTE standard", *SPACOMM*, Apr 21–26, 2013, pp. 40-45
16. A. Ahmed, M. Awais, A. U. Rehman, M. Maurizio, and G. Masera, "A High Throughput Turbo Decoder VLSI Architecture for 3GPP LTE Standard", *IEEE INMIC*, Dec 22–24, 2011, Karachi, Pakistan
17. A. Ahmed, M. Awais, M. Maurizio, and G. Masera, "VLSI Implementation of 16-point DCT for H.265/HEVC using Walsh Hadamard Transform and Lifting Scheme", *IEEE INMIC*, Dec 22–24, 2011, Karachi, Pakistan

## Supervision

### PhD

- o E. Jadoon, *Design of Meta-Heuristic Computing Paradigm for the Analysis of Nonlinear Electrohydrodynamic Models* – Completed (Co-Supervised).
- o M. Amjad, *Resource Management in Energy Harvested Cooperative IoT Network* – Completed (Co-Supervised).

### MS

- o A. Iqbal, *Optimal PMU Placement in Smart Grid for Line Outage Detection*.
- o S. Iqbal, *Flexible Reference Model for LTE/UMTS Turbo Codes*.
- o N. Irshad, *A Hardware Accelerator for the Line Outage Detection*.

- o M. Y. Madni, *Shielding effectiveness of metallic cavity with slots on multiple sidewalls using FDTD*.
- o Q. Ahmad, *Multi-Tier IoT Nodes Deployment for Energy Efficiency*.
- o Salman, *Efficient Charging Stations Placement in Smart City*.
- o S. Mehmood, *Efficient PMU Placement for Complete System Observability in Power Grids*.
- o M. Amin, *Multi-Resource Power Generation Scheduling*.
- o M. Hussain, *Renewable Energy Assisted Stochastic Multi-Objective Long Term Hydrothermal Cooperation*.
- o M. A. Khan, *Efficient Method for PMU Placement: A Non-Linear Modeling Approach*.
- o B. Emanuel, *Optimal Power Generation in Islandic Micro Grid*.
- o J. Ali, *Budget Constrained Electric Charging Terminal Placement*.
- o A. Mahmood, *Energy Harvested Assisted Data Offloading in IoT Enabled Mobile Edge Cloud*.
- o K. Shahzad, *Task Scheduling for Energy Efficiency using Mobile Edge Computing*.

## BS

- o K. Rana, W. Ahmad, *Highly parallel GPU based motion tracking algorithm*.
- o A. Niaz, I. Elahi, *Environmental management in the broiler house, an optimized solution*.
- o M. Talha, W. Malik, *Railway monitoring system*.
- o A. Ahmad, M. Zeeshan, M. Uzair, M. Muneeb, *Hybrid car using solar and wind power*.
- o A. Mannan, M. A. Awan, M. Afzal, A. Saeed, *Design of smart switch*.
- o M. M. Safdar, M. Zeeshan, M. Uzair, A. Ahmad, *Solar powered electric car*.
- o A. Fraz, A. Hadi, U. Ahmed, S. Batool, *Smart card based prepaid energy meter & wireless home-load control*.
- o H. M. Naeem, A. Raza, G. Akbar, A. Munir, *Remote health monitoring & automated building supervision*.
- o Omer, A. Ali, S. Imam, N. Anwar, *Test bed for electrical energy storage in power generation*.

## Professional Memberships & Service

- o IEEE Senior Member (No. 92086166).
- o Registered Engineer, Pakistan Engineering Council (PEC) – COMP/7566.

Reviewership IEEE TVLSI, IEEE IoT-J, IEEE Communications Letters, Journal of Circuits, Systems & Computers, IEEE Sensors Journal, IEEE Access, Elsevier Applied Soft Computing, IEEE VTC, FIT conference.

## Skills

Programming C/C++, Python, Visual Studio, Eclipse, NetBeans  
 Tools MATLAB, Synopsys Design Vision, Mentor Graphics, Xilinx, L<sup>A</sup>T<sub>E</sub>X, LyX, Visio  
 Hardware VHDL, Verilog HDL, FPGA Implementation, ASICs, 8051/89C51

## Languages

Urdu Native  
 English Fluent (speaking, writing, reading)



Arabic Fluent (reading)

### Conferences, Talks & Exhibitions (Selected)

- o IROS-2024 (exhibitor), Singapore; TII SSRC Summits (2022, 2024), Abu Dhabi.
- o IEEE ISCAS 2024 (poster), Singapore; IEEE SNAMS 2023, Abu Dhabi.
- o IEEE GLOBECOM 2018, Abu Dhabi; PCS 2013, Euromicro DSD 2013, SPACOMM 2013.
- o Workshops & outreach: HEVC workshop (2015), multiple national/institutional events.

### Administrative Activities

- o Convener and member on multiple committees: PEC documentation; industrial visits; graduate program; internal audit; orientation; IEEE student chapter (founding counselor); career counseling; internships & alumni; tree plantation & clean/green drives; ISO QMS trainings; accreditation focal roles..

### References

References available upon request.