Dr. Syeda Iqra Hassan

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Professional Summary

Dedicated and accomplished researcher with a strong background in Artificial Intelligence, IT, IoT, Big Data, Electronics, and Electrical Engineering. I am eager to leverage my extensive research publication, experience and passion for innovative teaching to contribute to the academic community. My goal is to inspire and mentor students, while further advancing cutting-edge research in these fields.

Work Experience

Assistant Professor (Software Engineering)
Sir Syed University of Engineering and Technology (SSUET), Karachi, Pakistan | Oct 2024 – Present

- Teaching undergraduate and postgraduate courses.
- Conducting research, and mentoring students.
- Supervise Final year Projects.
- Collaboration on interdisciplinary projects and curriculum development.
- Exam paper moderation.

Assistant Professor (Computer Science)
Muhammad Ali Jinnah University (MAJU), Karachi, Pakistan | May 2024 – Oct 2024

- Teaching undergraduate and postgraduate courses.
- Collaboration on interdisciplinary projects and curriculum development.
- Responsible for Industry collaboration and accreditation visits of governing bodies.

Assistant Professor (Computer Science)
Denning Institute of Technology and Entrepreneurship, Karachi, Pakistan | Jan 2024 – April 2024

- Responsible for teaching, research, and curriculum development.
- Engaged in mentoring students and conducting innovative research.

Assistant Professor (Electrical and Software Engineering)
Ziauddin University, Karachi, Pakistan | Jan 2022 – Dec 2023

- Delivering lectures, preparing course materials, and assessing student performance.

Visiting Faculty
Ziauddin University, Karachi, Pakistan | August 2026

Senior QEC Officer
Ziauddin University, Karachi, Pakistan | Oct 2021 – Dec 2023

- Develop, implement, and monitor quality assurance frameworks and accreditation standards.
- Conduct institutional self-assessment and program evaluation processes.
- Prepare and submit reports on quality assurance activities to regulatory bodies.
- Assist in curriculum development and compliance with accreditation requirements.
- Organize training sessions, workshops, and awareness programs on quality enhancement.
- Collaborate with faculty and administrative staff to ensure academic excellence.
- Stay updated with national and international quality assurance standards.

Senior PCB Design Engineer

Circuitree, Karachi, Pakistan | Mar 2018 – Sep 2021

- Design and develop high-speed, multi-layer PCB layouts using industry-standard CAD tools (e.g., Altium, OrCAD, Mentor Graphics).
- Perform design validation, simulation, and troubleshooting to meet performance specifications.
- Maintain and update PCB libraries, design documentation, and technical reports.
- Mentor junior engineers and provide technical guidance in PCB design best practices.

Senior PCB Design Engineer

Pacific Design Centre, Karachi, Pakistan | Jan 2016 – March 2018

- Design and develop high-speed, multi-layer PCB layouts using industry-standard CAD tools (e.g., Altium, OrCAD, Mentor Graphics).
- Perform design validation, simulation, and troubleshooting to meet performance specifications.
- Maintain and update PCB libraries, design documentation, and technical reports.

International Research Mobility — Erasmus+ KA171/ICM

Maynooth University, Ireland | August – November 2026

- Selected for a three-month Erasmus+ KA171 International Credit Mobility (ICM) research mobility at Maynooth University, Ireland.
- Conducting collaborative research under the supervision of Dr. Zain Anwar Ali, Maynooth University.
- Engaged in international research collaboration in the areas of Artificial Intelligence, Machine Learning, Computer Vision, and related research applications.
- Participating in research activities, knowledge exchange, academic discussions, and collaborative research activities with the host research group.
- Mobility supported through the Erasmus+ KA171 programme between Sir Syed University of Engineering & Technology (SSUET), Pakistan and Maynooth University, Ireland.

Education

Post Doctorate Researcher

Multimedia University, Malaysia | Feb 2025 – continue

- PhD Research: A Hybrid CNN Model for Prescription Mapping Technique in Smart Agriculture

Doctor of Philosophy

British Malaysian Institute, Universiti of Kuala Lumpur (BMI-UniKL), Kuala Lumpur, Malaysia | Feb 2020 – Nov 2023

- PhD Research: A Hybrid CNN Model for Prescription Mapping Technique in Smart Agriculture

MS Engineering Management

Institute of Business Management, Karachi, Pakistan | Sep 2016 – Aug 2018

- MS Research: Identification of Humans in a Disaster using Radio Frequency Technique.

Bachelor of Science in Electronic Engineering

Sir Syed University of Engineering & Technology, Karachi, Pakistan | Jan 2012 – Dec 2015

- Final Year Project: Operating and Control of Autonomous Ground Vehicle

Skills

- Undergraduate and Postgraduate teaching
- Organizing Conferences
- Project Management
- Research leadership

- Continuous Learning
- Communication Skills
- Team management
- Research and publications
- Grant writing

Professional Credentials

- PLC & Industrial Automation 2016
- Python Programming 2020
- Introduction to Climate Change Adaptation and Mitigation Strategies, Pakistan, 2025
- Weather Forecasting, Pakistan, 2025
- Data Science for Climate Change, Pakistan, 2025
- Sensor Networks and Drone Technology for Data Gathering, Pakistan, 2025
- AI and Climate Change - Wind Power Estimation and Biodiversity, Pakistan, 2025
- Agile Project Management and Scrum, Pakistan, 2025

Professional Affiliations

- Signed Petition to form the IEEE Karachi Section, IEEE Oceanic Engineering Society Chapter
- External Examiner, Bahria University, Karachi, Pakistan

Awards and Honors

- Graduate with a PhD from University of (BMI-UniKL), 2023
- Highest honors certificate in the postgraduate program, 2018
- Awarded as the best performer of the year, Karachi, Pakistan, 2017
- Positions in IN HOUSE PROJECT EXHIBITIONS, Karachi, Pakistan, 2012-2015
- Winner in Sentec'15, NED Karachi, Pakistan, 2015
- Runner up in Robo-maze, NED Karachi, Pakistan, 2015
- 3rd position in SUPARCO World Space Week, Karachi, Pakistan, 2015
- LFR winner in FAST university, Karachi, Pakistan, 2014
- Best mechanical design award from NUST, Islamabad, Pakistan, 2013

List of Publications

Cumulative Journal Impact Factor: 27.17 (Q1 = 5, Q3 = 3, Q3 = 1) | Total Citations: 414, h-index 7

Journal Articles

[1] S. I. Hassan, M. M. Alam, U. Illahi, M. A. Al Ghamdi, S. H. Almotiri and M. M. Su'ud, "A Systematic Review on Monitoring and Advanced Control Strategies in Smart Agriculture," IEEE Access, vol. 9, pp. 32517-32548, 2021, doi: 10.1109/ACCESS.2021.3057865. I.F.: 4.4, Q1.

[2] Naqvi, S. M. A., Shabaz, M., Khan, M. A., Hassan, S. I. "Adversarial Attacks on Visual Objects Using the Fast Gradient Sign Method." Journal of Grid Computing, 21, 52 (2023). https://doi.org/10.1007/s10723-023-09684-9. I.F.: 3.6, Q2.

[3] Syeda I. H., Alam M. M., Illahi U., Su'ud M. M. "Advance Control Strategies using Image Processing, UAV, and AI in Agriculture: A Review." World Journal of Engineering, Vol. 18, No. 4, pp. 579-589, 2021. https://doi.org/10.1108/WJE-09-2020-0459. Q3.

[4] Hassan, S. I., Alam, M. M., Zia, M. Y. I., Rashid, M., Illahi, U., Su'ud, M. M. "Rice Crop Counting Using Aerial Imagery and GIS for the Assessment of Soil Health to Increase Crop Yield." Sensors 2022, 22, 8567. https://doi.org/10.3390/s22218567. I.F.: 3.9, Q1.

[5] Hassan, S. I., Alam, M. M., Illahi, U., Mohd Suud, M. (2023). “A New Deep Learning-Based Technique for Rice Pest Detection Using Remote Sensing.” PeerJ Computer Science, 9:e1167. https://doi.org/10.7717/peerj-cs.1167. I.F.: 3.8, Q1.

[6] Usaid, M., Asif, M., Rajab, T., Rashid, M., Hassan, S. I. “Ambulance Siren Detection using Artificial Intelligence in Urban Scenarios.” Sir Syed University Research Journal of Engineering & Technology, Vol. 12, No. 1 (2022). https://doi.org/10.33317/ssurj.467. Y Category.

[7] Hassan, S. I., Syed, S. A., Ali, S. W., Zahid, H., Tariq, S., Mohd Su’ud, M., Alam, M. M. (2024). “Systematic Literature Review on the Application of Machine Learning for the Prediction of Properties of Different Types of Concrete.” PeerJ Computer Science, 10:e1853. https://doi.org/10.7717/peerj-cs.1853. I.F.: 3.8, Q1.

[8] Hassan, M., Sultan, F., Kamal, M. H., Hassan, S. I., Sadiq, W. “Evaluating Strategies for Cost Reduction in Supply Chain Management Relating to Exports and Imports.” The Critical Review of Social Sciences Studies, Vol. 2, No. 2 (2024). https://doi.org/10.59075/82q0m790. Y Category.

[9] Abbas, H., Ren, S. B., Asim, M., Hassan, S. I., & Abd El-Latif, A. A. (2025). “SODU2-NET: A Novel Deep Learning-Based Approach for Salient Object Detection Utilizing U-NET.” PeerJ Computer Science, 11, e2623. https://doi.org/10.7717/peerj-cs.2623. I.F.: 3.8, Q1.

[10] Bashir, K., Maroof, A., Maqbool, F., Bashir, K., & Hassan, S. I. (2024). “Cricketing Insights Unveiled: Python-Based Information Extraction from IPL.” Journal of Independent Studies and Research Computing, 22(2), 173–180. https://doi.org/10.31645/JISRC.24.22.2.12. Y Category.

[11] Shaikh, M. M., Zia, M. Y. I., Hyder, W., Memon, K. A., Hassan, S. I., Das, B. “Impact of Various System Design Parameters on Coverage in Heterogeneous Cellular Networks.” Journal of Independent Studies and Research Computing, vol. 2, pp. 58-68, 2023. doi:10.31645/JISRC.23.21.2.9. Y Category.

[12] Zaheen, M. Y.*, Hassan, S. I.*, Ali, S. M., Sarwar, N., Aamir, M., Alam, M., Mohd Suud, M.* “Optimized Physics-Guided ARIMAX–LSTM for IoT-Enabled Urban Flood Forecasting.” Mathematical and Computational Applications (MCA), 2026. Manuscript ID: mca-4587495. Published.

[13] Hassan, S. I.*, Zia, M. Y. I., Khan, M. U., Rashid, M., Alam, M. M., Mohd Su’ud, M.* “YO-CNN: A Hybrid Deep Learning Model for Prescription Mapping in Precision Agriculture.” Mathematical and Computational Applications (MCA), 2026. Manuscript ID: mca-4618904. Revision submitted.

[14] “Domain-Guided Feature Engineering for Interpretable Surrogate Modelling of Fuzzy VIKOR in Learning Management System Evaluation.” Scientific Reports. Accepted.

[15] Zaheen, M. Y.*, Hassan, S. I.*, Ali, S. M., Sarwar, N., Aamir, M., Alam, M., Mohd Suud, M.* “Sensor-Enabled Physics-Guided Transfer Learning for Upstream-to-Downstream Flood Forecasting.” Springer Nature, 2026. Submitted.

[16] “Reinforcement Learning for Sensor-Based Remote Planning and Control.” IEEE Access, 2026. Submitted.

Conference Proceedings

[17] Hassan, S. I., Zia, M. Y. I., & Karnani, C. “YOLO-Based Object Detection for Intelligent Maritime Surveillance and Risk Identification.” Accepted and presented at the 2026 Global Conference on Wireless and Optical Technologies (GCWOT), 2026.

[18] Zia, M. Y. I., Rukaiya, R., Siddiqui, R., & Hassan, S. I. “Predictive Modeling of Solar Irradiance Under PM2.5 Pollution and AQI Variations for Energy Yield Forecasting in PV Systems.” Accepted and presented at the 8th International Multi-Topic ICT Conference (IMTIC), 2025.

[19] Hassan, S. I., Zia, M. Y. I., & Otero, P. “Identification of Humans in a Disaster using Radio Frequency Technique.” In 2023 Global Conference on Wireless and Optical Technologies (GCWOT), IEEE, pp. 1-4, 2023. doi:10.1109/GCWOT57803.2023.10064672.

[20] Hassan, S. I., Alam, M., & Qadri, M. T. (2017, April). “Designing and Controlling Autonomous Unmanned Ground Vehicle.” In 2017 International Conference on Innovations in Electrical Engineering and Computational Technologies (ICIEECT), IEEE, pp. 1-5. https://doi.org/10.1109/ICIEECT.2017.7916883.