Sahar Shah

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Gender: Male **Date of birth:** 24/04/1993 **Nationality:** Pakistani

ABOUT ME

I am currently enrolled in my PhD at the Department of Computer Science, University of Milano-Bicocca, Italy. I am working with Explainable Artificial Intelligence Models. However, I earned my Master Degree in Electronics, from the Department of Electronics, Quaid-i-Azam University, Islamabad, Pakistan. My research area was Wireless Sensor Networks and I published four (04) International journal research articles in well reputed journals and a book chapter.

EDUCATION AND TRAINING

[05/02/2017 – 18/04/2019]

M.Phil (Master) in Electronics (18 Years Education)

Department of Electronics, Quaid-i-Azam University, Islamabad, Pakistan

Final grade: 3.9/5

Thesis: Localization Free Energy Efficient and Cooperative Routing Protocols for Underwater Wireless Sensor Networks..

Designed two routing protocols for data communication in Underwater Wireless Sensor Networks using MATLAB simulator. These protocols outperform in terms of energy consumption and data transmission.

[16/09/2013 – 06/04/2016]

Master of Science (Bachelor) in Electronics (16 Years Education)

Institute of Physics and Electronics, University of Peshawar, Peshawar, Pakistan

Final grade: 737/1100

Thesis: Survey of Power Control Schemes for Wireless Sensor Networks.

During the Bachelor Degree Program, chose the field of Wireless Sensor Networks (WSNs) and thoroughly learned the literature in Power Control aspect of the Wireless Sensor Networks.

[17/06/2011 – 09/09/2013]

Bachelor of Science in Electronics (14 Years Education)

Abdul Wali Khan University, Mardan, Pakistan

Final grade: 330/550

Learned the advanced and basic concepts of the subjects of Physics, Electronics, and Mathematics.

PUBLICATIONS

[2022]

To Investigate the Dust Particles and Improve the Performance of Photo Voltaic Panels by Using Sliding Cleaning Technique

Reference: 3rd International Modern Scientific Research Congress, Gedik University, Istanbul, Turkey

Shah, Javeria, Marwa Behroz, Hina Iqbal, Sana Shafi, and Sahar Shah "To Investigate the Dust Particles and Improve the Performance of Photo Voltaic Panels by Sliding Cleaning Technique" Istanbul International Modern Scientific Research Congress-III (May-2022).

[2022]

MuLSI-Co: Multi Layers Sinks and Cooperation based Data Routing Techniques for AWSNs

Reference: https://doi.org/10.1155/2022/4840481

Ali, Munsif, Sahar Shah, Mahnoor Khan, Ihsan Ali, Roobaea Alroobaea, Abdullah M. Baqasah, and Muneer Ahmad. "MuLSi-Co: Multilayer Sinks and Cooperation-Based Data Routing Techniques for Underwater Acoustic Wireless Sensor Networks (UA-WSNs)." *Wirel ess*

Communications and Mobile Computing 2022 (2022).

[2021]

Synthesis, Characterization, and Applications of Silver Nano Fibers in Humidity, Ammonia, and Temperature Sensing

Reference: https://doi.org/10.3390/mi12060682

Rashid, Haroon-Ur, Muhammad Ali, Mahidur R. Sarker, Sawal Hamid Md Ali, Naseem Akhtar, Nadir Ali Khan, Muhammad Asif, and Sahar Shah. "Synthesis, Characterization, and Applications of Silver Nano Fibers in Humidity, Ammonia, and Temperature Sensing." *Micromachines* 12, no. 6 (2021): 682.

[2020]

Security Measurement in Industrial IoT With Cloud Computing Perspective: Taxonomy, Issues and Future Directions

Reference: https://doi.org/10.1155/2020/8871315

Shah, Sahar, Mahnoor Khan, Ahmad Almogren, Ihsan Ali, Lianwen Deng, Heng Luo, and Muazzam A. Khan. "Security measurement in industrial IoT with cloud computing perspective: taxonomy, issues, and future directions." *Scientific Programming* 2020 (2020).

[2018]

Localization Free Energy Efficient and Cooperative Routing Protocols for Underwater Wireless Sensor Networks.

Reference: https://doi.org/10.3390/sym10100498

Shah, Sahar, Anwar Khan, Ihsan Ali, Kwang-Man Ko, and Hasan Mahmood. "Localization free energy efficient and cooperative routing protocols for underwater wireless sensor networks." *Symmetry* 10, no. 10 (2018): 498.

WORK EXPERIENCE

[01/10/2021 – Current]

Lecturer

Punjab Group of College, Risalpur, Nowshera, Pakistan

Serving as a Lecturer in Physics.

[11/09/2019 – 11/06/2021]

Electronics Lecturer

Higher Education Archives and Libraries Department of Pakistan

Taught the courses to Bachelor Degree (BS) students at Government Post Graduate College Nowshera, i.e., Analog and Digital Electronics, Digital Logic Design, Semi-conductor Devices, and Methods of Experimental Physics. Moreover, supervised the two research groups. As well as served as a controller of examination at the Department of Physics, Government Post Graduate College Nowshera, Pakistan.

[05/03/2018 – 15/04/2019]

Visiting Senior Instructor

Bhara Kahu Polytechnic College, Islamabad, Pakistan

Taught the courses of Telecommunication, Electronic Devices, Optical Fiber, Electric Circuit Analysis, and Applied Physics to Electronics/Electrical Associate Engineers.

[05/07/2017 – 06/06/2018]

Teaching and Research Assistant

Department of Electronics, Quaid-i-Azam University, Islamabad, Pakistan

My duties included guiding of students and share new ideas in research fields to help them in theoretical as well as practical and simulation-based research work/projects. Moreover, taught the few courses related to Electronics as well.

[12/09/2015 – 05/04/2016]

Lecturer

Future Grooming College, Nowshera

Taught a text book of Physics to the Higher Secondary students.

SUPERVISION

[07/09/2020 – 21/11/2021]

Investigating the Dust Particles and Improve the Performance of Photo Voltaic Panels by Sliding Cleaning Technique.

This idea was suggested by me to my Bachelor Degree students and deal them as a Supervisor in this research project. The students did the investigation and measure the Power, Current and Voltage of the coated and un-coated solar panels. Then individual graphs are plotted for coated and un-coated panels for comparison. In order to enhance the performance the students designed a code based on Arduino-Uno which drives the stepper motor and hence clean the dusted panel by an automatic wiper after an hour.

[07/09/2020 – 21/11/2021]

Digital Voting Machine Based on Fingerprint Sensor by Using Arduino Uno.

This was a final year research project of Bachelor Degree students. I have evaluated the thesis and analyze the circuit as a Supervisor. Arduino-Uno module was used with a micro-controller which saves the data of the citizens based on finger print sensor module. Then voters are able to cast their votes. Every citizen can pole its vote at once.

PROJECTS

[15/10/2017 – 05/03/2018]

Object Detection and Recognition Using MATLAB Simulator

Worked on object detection and recognition during M.Phil. studies and extracted different features and used distance classifier for improving the object detection and classification.

[10/11/2014 – 25/03/2015]

Home Security System based on Logic Gates

Designed an automatic electronic circuit with AND-OR-Logic gates, Seven Segment Display, and Light Dependent Resistor (LDR) in order to detect the presence of any person.

CONFERENCES AND SEMINARS

[19/06/2023 – 23/06/2023]

Topics in Modern Machine Learning- An Advanced Machine Learning Course-Summer School

University Of Genoa, Italy

In this summer school I have learned the advance concepts of the Topics with lab skills: Statistical Learning Theory, Optimization for Machine Learning, Sketching, Implicit Regularization, Reinforcement Learning, Optimal Transport for Machine Learning, Learning in Interpolation Regimes, Sampling as First Order Optimization Over a Space of Measure and the Labs- Sketching, Implicit Regularization, Reinforcement Learning, Machine Learning for Inverse Problems, Optimal Transport for Machine Learning, Fairness,

Link: https://malga.unige.it/education/schools/modml

[06/05/2022 – 08/05/2022]

3rd International Modern Scientific Research Congress, Gedik University, Istanbul, Turkey

Participate in oral and technical presentation, recognition and appreciation of research contributions.

[07/05/2018 – 08/05/2018]

Advanced Computational Electromagnetics: from Conventional Fast Solvers to the Novel Fractional Formulations and Their Applications

Department of Electronics, Quaid-i-Azam University, Islamabad, Pakistan.

I was an active member of this two days seminar series.

[15/05/2017 – 10/04/2018] **Introduction to MATLAB for Scientific Data Analysis**

Department of Electronics, Quaid-i-Azam University, Islamabad, Pakistan.

I was an active member of this Seminar series, held at the Department of Electronics, Quaid-i-Azam University, Islamabad Pakistan.

HONOURS AND AWARDS

[17/10/2018] **Journal Articles Publication Certificate** **Awarding institution:** International Journal of Multidisciplinary Digital Publishing Institute

Publication Certificate.

[07/10/2018] **Awarded a Laptop by Prime Minister Laptop Scheme** **Awarding institution:** Quaid-i-Azam University, Islamabad, Pakistan

Based on my academic performance, I have been awarded by a Laptop, through Prime Minister Laptop Scheme.

[05/07/2017] **National Youth Training and Internship Program** **Awarding institution:** Quaid-i-Azam University, Islamabad, Pakistan

Selected as a paid internee (Teaching and Research Assistant) under the Supervision of Professor Dr. Hassan Mahmood at the Department of Electronics, Quaid-i-Azam University, Islamabad, Pakistan.

[05/02/2017] **M.Phil (Master) Fellowship** **Awarding institution:** Quaid-i-Azam University, Islamabad, Pakistan

Awarded the fellowship at the Quaid-i-Azam University, based on academic performance from 05/02/2017 to 18/04/2019.

COMMUNICATION AND INTERPERSONAL SKILLS

Python, PyTorch, MATLAB, C++, and LaTex.

English, and Urdu

RECOMMENDATIONS

Professor and Supervisor

Name: Dr. Hasan Mahmood
Email: hassan.qau.edu@gmail.com

Professor and Master Degree (M.Phil) research supervisor.

Associate Professor

Name: Dr. Naeem Ali Bhatti
Email: naeem.qau.edu@gmail.com

Professor at Master Degree (M.Phil) Program.