Syed Hamad Shirazi (PhD)

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Cited by	All	Since 2020
Citations	1239	1028
h-index	18	17
i10-index	30	25

Summary

▪More than **ten years of experience** in medical image processing, research and development
▪**Machine Learning, Medical Image Processing, Decision support systems, and Information Retrieval** are my current research interests.
▪Have sound background in the areas of **Machine Learning, Deep Learning, Image Processing**, **Computer vision and Information Retrieval.**
▪ Won **two Funded Project Grants** (NRPU 2022 & HED KPK 2025)
▪Got **Best Teacher Award from Government of KPK** (2018)
▪Got **Research Productivity Award from COMSATS** (2014)
▪Got **HEC Indigenous Scholarship for PhD** (2013)
▪Got **COMSATS Scholarship for MS-CS** (2009)
▪ Member **Academic Council Hazara University Mansehra** (2025)

Experience

Hazara University Mansehra (7 Years)	• Assistant Professor Computer Science (November 2018- till date) • Teaching at Masters and Doctorate Level • Supervision of Masters and Doctorate level students • Coordinator BS-AI Program, Coordinator Graduate Program • Member of GRC Committee
Higher Education Department KPK (10.5 Years)	• Assistant Professor Computer Science (April 2008- October 2018) • Worked as Controller exams for ten years • Worked as MIS In-charge for five years
CAIR- FAST University Islamabad (1Year 2month)	• Data Warehouse Programmer (February 2007- April 2008) • Design, Development, and Implementation of Data Warehouse Projects
Mile-Stone Software Solutions Islamabad (1Year 4 Months)	• Web Developer (September 2005 to January 2007) • Worked on different web-based applications usingASP.NET, C# & SQL Server

Education

1	**Hazara University, Mansehra Pakistan** Machine Learning, Image Processing **Ph.D. Computer Science**	Sep 2012- Aug 2017	CGPA: 3.55/4.00
2	**COMSATS University, Abbottabad Pakistan** Image Processing, **MS. Computer Science**	Oct 2009- Jul 2011	CGPA: 3.21/4.00
3	**IBMS Agriculture University, Peshawar Pakistan** Information Technology, BS-IT(Hons)	Nov 2001-Dec-2005	CGPA: 3.51/4.00

Technical Expertise

Machine Learning	CNN (Pytorch), GANs, GNN, Spiking Neural Networks
Libraries	Pytorch, Tensorflow, Keras, Scikit-learn, Open-cv, Numpy, Scipy
Design Methodologies:	Object Oriented Analysis and Design, UML

Professional Certifications

Coursera Certification	▪ Deep Neural Networks with PyTorch ▪ Advanced Computer Vision with TensorFlow ▪ Image Processing with Python ▪ Introduction to R: Basic R syntax

Involvement in Funded Projects

- Completed a project as a **PI** on a funded project titled "**Deep Learning Based Prediction Support System for Anaemic RBCs**" we are working on AI-ML based system for blood microscopic image analysis in collaboration with Shaukat Khanum Cancer Hospital Lahore. Our end product will be a Disease Prediction Support System/Algorithm that assists as digital pathologist to automate anemia diagnostic process. This project is funded by Higher Education Commission of Pakistan (HEC) under NRPU program. Total worth of the project is **2.4 Million Rupees**. Prototype available (**https://hvcrg.net/**) Completion date (March 2025)

- Working as a PI on a funded project titled "**Remote Sensing and Geospatial Analysis for Modeling and Predicting the Impacts of Climate Change on Glacier Water Resources and Crop Mapping in Pakistan**" The study proposes a hybrid model that combines Temporal Convolutional Networks (TCNs) with optical flow estimation for accurate crop mapping. **2.34 million Rupees. (In progress)**

- Working on a Project "**cancerous images and their analysis through CAD systems"** It can play a crucial role in enhancing the accuracy, efficiency, and effectiveness of cancer diagnosis and treatment. These technologies support radiologists and oncologists in making informed decisions, ultimately improving patient outcomes**.**

- Worked as Data Warehouse Programmer on "**Agriculture Decision Support System"** I have worked as a Data Warehouse Programmer in CAIR FAST University, my work was focused on different web and desktop applications. We have developed different tools like ADSS-Data Mining Tool, ADSS-Micro tool etc.

MS/PhD Supervision

PhD Supervision

- **Muhammad Shehzad** "Image Segmentation of Anaemic Red Blood Cells Using Multi-Level Semantic Segmentation Network**" (Completed 2024)**
- **Muhammad Zakir "**3dcgan: 3d Conditional Generative Adversarial Network" **(Completed 2024)**
- **Assad Rasheed** "Cervical Nuclei Segmentation Through Synergic Conditional GENERATIVE Adversarial Network in Cervical Smear Images" **(Thesis Submitted)**
- **Musa Jaleeli** "Analysis of Time-Series Satellite Images of Sentinel-2 For Generating and Optimizing Crops Map in Markazi Bihsud, Afghanistan"
- **Mobina Zaka "**Thyroid Nodule Segmentation In Medical Images via An Improved UNet Model**"**
- **Syed Afsar Shah** "A Robust Method for Digital Imagery Analysis Using Classification and Segmentation Methods.
- **Muhammad Waleed** "Working on PhD Proposal"

MS Supervision

- **Faiza Habib** "Metamorphic Malware Detection in IOT Devices Using DCNN"
- **Abid Jameel** "Automatic Speech Recognition for Urdu Langue Using Deep Learning Models"
- **Rahmatullah** "Eczema Classification Using Synergic Deep Neural Network"
- **Faisal Azizi** "Pashto Signboard Classification Based on Signboard Image Using CNN"
- **Abdul Baseer** "Pashto Text to Speech Synthesis Using Smooth Ergodic Hidden Markove Model"
- **Rafiullah** "Pashto Books Classification Based on Cover Page Image Using Multi-Model Neural Network"
- **Naseer Ul Haq "**Identification Of Anemia Using Graph Convolutional Neural Networks"
- **Amanullah "**COVID AID: COVID-19 DETECTION USING CHEST X-RAYS"
- **Imranullah "**Driver drowsiness detection"
- **Rashid Minhas "**Forecasting the Crude Oil Upcoming Price of Pakistan from Sentiment Analysis Using News Headline"
- **Hafeez Ur Rehman** "Urdu Signboard Classification Using Deep Learning"
- **Danish Aziz** "Simultaneous Segmentation and Classification of Anemic RBCs From Blood Smear Images Using Deep Learning Network"

Most Relevant Research Publications Syed Hamad Shirazi - Google Scholar

(Complete publication list is separately attached)

NO	Year	Title	Date of Publication	Impact Factor
Book Chapters				
1	**2025**	AI-Powered Online System for Anemia Detection Through Advanced RBC Image Analysis Syed Hamad Shirazi*, Zakir Khan, Muhammad Shahzad*, Mushtaq Ali, Tahir Mehmood	24/04/2025 **Accepted In Press**	
2	**2018**	Automated pathology image analysis SH Shirazi, S Naz, MI Razzak, AI Umar, A Zaib Soft Computing Based Medical Image Analysis, 13-29	01/01/2018	
3	**2015**	Accurate microscopic red blood cell image enhancement and segmentation SH Shirazi, AI Umar, NU Haq, S Naz, MI Razzak Bioinformatics and Biomedical Engineering: Third International Conference Lecture Notes in Computer Science ((LNBI,volume 9043))	03/04/2015	
Journal Articles				
1	**2025**	EAPDS: Efficient Auditable and Privacy-preservation Data Sharing Scheme Based on Attribute-Based Encryption for IoMT H Wang, Y Xie, M Luo, Y Liu, SH Shirazi IEEE Internet of Things Journal	18/04/2025	10.6
2		EPRFL: An efficient privacy-preserving and robust federated learning scheme for fog computing Ke Zhijie, Xie Yong*, Syed Hamad Shirazi, Li Haifeng	24/04/2025	3.6

		China Communications, 2025, vol. 22, no. 4, pp. 202-222. DOI: 10.23919/JCC.fa.2024-0398.202504		
3		Techniques and challanges for cervical nuclie segmetnation in cervical smear images: A review Assad Rasheed, Syed Hamad Shirazi, Zakir Khan Journal of Artificial Intelligence Review	24/04/2025	14.9
4	**2024**	Blood cell image segmentation and classification: a systematic review M Shahzad, F Ali, SH Shirazi, A Rasheed, A Ahmad, B Shah, D KwakPeerJ Computer Science 10, e1813	02/02/2024	2.7
		Deep Neural Networks for Enhanced Security: Detecting Metamorphic Malware in IoT Devices F Habib, SH Shirazi, K Aurangzeb, A Khan, B Bhushan, M Alhussein IEEE Access	01/04/2024	3.9
5		A Framework for Segmentation and Classification of Blood Cells Using Generative Adversarial Networks Zakir Khan, Syed Hamad Shirazi, M.Shehzad, Asad Rasheed IEEE Access	18/03/2024	3.9
6		AneRBC- A Benchmark Dataset for Computer-Aided Anaemia Diagnosis Using RBC Images" Database: The Journal of Biological Databases and Curation (Accepted)	Accepted	5.8
7	**2023**	Cervical cell's nucleus segmentation through an improved UNet architecture Plos one 2023	10/03/2023	2.9
8		ePMLF: Efficient and Privacy-Preserving Machine Learning Framework Based on Fog Computing R Zhao, Y Xie, H Cheng, X Jia, SH Shirazi International Journal of Intelligent Systems 2023 (2), 1-16	27/02/2023	8.02
9		Telehealth for COVID-19: A Conceptual Framework W Yousaf, AI Umar, SH Shirazi, M Fayaz, M Assam, JA Khan, A Rasheed, Journal of Healthcare Engineering 2023	07/02/2023	2.87
10		Cover-based multiple book genre recognition using an improved multimodal network A Rasheed, AI Umar, SH Shirazi, Z Khan, M Shahzad International Journal on Document Analysis and Recognition (IJDAR) 26 (1), 65-88	03/03/2023	3.87
11	**2022**	Automatic eczema classification in clinical images based on hybrid deep neural network A Rasheed, AI Umar, SH Shirazi, Z Khan, S Nawaz, M Shahzad Computers in Biology and Medicine 147, 105807	01/8/2022	6.07

12		Face Recognition via Multi-Level 3D-GAN Colorization Z Khan, AI Umar, SH Shirazi, M Shahzad, M Assam, MTIM El-Wakad, IEEE Access 10, 133078-133094	02/12/2022	3.47
13		Identification of Anemia and Its Severity Level in a Peripheral Blood Smear Using 3-Tier Deep Neural Network M Shahzad, AI Umar, SH Shirazi, Z Khan, A Khan, M Assam, A Mohamed, ... Applied Sciences 12 (10), 5030	16/5/2022	2.69
14		Modified genetic algorithm for optimal classification of abnormal MRI tissues using hybrid model with discriminative learning approach SA Ali Shah Tirmzi, AI Umar, SH Shirazi, MAH Khokhar, I Younes Computer Methods in Biomechanics and Biomedical Engineering: Imaging	2/1/2022	2.26
15		QoS-Aware Cost Minimization Strategy for AMI Applications in Smart Grid Using Cloud Computing A Khan, AI Umar, SH Shirazi, W Ishaq, M Shah, M Assam, A Mohamed Sensors 22 (13), 4969	30/6/2022	4.35
16		Lung's Segmentation Using Context-Aware Regressive Conditional GAN Z Khan, AI Umar, SH Shirazi, A Rasheed, W Yousaf, M Assam, I Hassan, ... Applied Sciences 12 (12), 5768	07/06/2022	2.69
17	**2021**	A QoS-Aware Machine Learning-Based Framework for AMI Applications in Smart Grids A Khan, AI Umar, A Munir, SH Shirazi, MA Khan, M Adnan Energies 14 (23), 8171	06/12/2021	3.34
18		Semantic Segmentation of Anaemic RBCs Using Multilevel Deep Convolutional Encoder-Decoder Network M Shahzad, AI Umar, SH Shirazi, IA Shaikh IEEE Access 9, 161326-161341	30/11/2021	3.47
19		pKAS: A Secure Password-Based Key Agreement Scheme for the Edge Cloud P Liu, SH Shirazi, W Liu, Y Xie Security and Communication Networks 2021	18/10/2021	1.79
20		Lightweight healthcare wireless body area network scheme with amplified security Z Jiang, W Liu, R Ma, SH Shirazi, Y Xie IEEE Access 9, 125739-125752	09/09/2021	3.47

21		Deep transfer learning for alzheimer neurological disorder detection A Ashraf, S Naz, SH Shirazi, I Razzak, M Parsad Multimedia Tools and Applications, 1-26	01/08/2021	2.10
22		Innovation performance in digital economy: does digital platform capability, improvisation capability and organizational readiness really matter? W Jun, MH Nasir, Z Yousaf, A Khattak, M Yasir, A Javed, SH Shirazi European Journal of Innovation Management, 1-19	11/05/2021	2.50
23		Patch-CNN: Deep learning for logo detection and brand recognition W Yousaf, A Umar, SH Shirazi, Z Khan, I Razzak, M Zaka Journal of Intelligent & Fuzzy Systems 40 (Preprint), 3849-3862	03/03/2021	1.84
24		Image based analysis of meibomian gland dysfunction using conditional generative adversarial neural network ZK Khan, AI Umar, SH Shirazi, A Rasheed, A Qadir, S Gul BMJ Open Ophthalmology 6 (1), e000436	01/02/2021	---
25	**2020**	Robust method for semantic segmentation of whole-slide blood cell microscopic images M Shahzad, AI Umar, MA Khan, SH Shirazi, Z Khan, W Yousaf Computational and mathematical methods in medicine 2020	21/12/2020	1.84
26	**2017**	Extreme learning machine based microscopic red blood cells classification SH Shirazi, AI Umar, NU Haq, S Naz, MI Razzak, A Zaib Cluster Computing 20 (76), 1-11	03/07/2017	2.10
27		Urdu Nasta'liq text recognition system based on multi-dimensional recurrent neural network and statistical features S Naz, AI Umar, R Ahmad, SB Ahmed, SH Shirazi, MI Razzak Neural computing and applications 28, 219-231	01/02/2017	4.2
28	**2016**	Efficient leukocyte segmentation and recognition in peripheral blood image SH Shirazi, AI Umar, S Naz, MI Razzak Technology and Health Care 24 (3), 335-347	01/01/2016	0.69
29		Segmentation techniques for recognition of Arabic-like scripts: A comprehensive survey S Naz, AI Umar, SH Shirazi, SB Ahmed, MI Razzak, I Siddiqi Education and Information Technologies 21, 1225-1241	01/09/2016	2.01
30		Offline cursive Urdu-Nastaliq script recognition using multidimensional recurrent neural networks	12/02/2016	3.31

		S Naz, AI Umar, R Ahmad, SB Ahmed, SH Shirazi, I Siddiqi, MI Razzak Neurocomputing 177, 228-241		
31	**2014**	Curvelet based offline analysis of SEM images SH Shirazi, N Haq, K Hayat, S Naz, I Haque PloS one 9 (8), e103942	04/08/2014	3.53
32		Challenges of Urdu named entity recognition: a scarce resourced language S Naz, AI Umar, SH Shirazi, SA Khan, I Ahmed, AA Khan Research Journal of Applied Sciences, Engineering and Technology 8 (10)	15/09/2014	
Conference Articles				
1	**2014**	An Ocr system for printed Nasta'liq script: A segmentation based approach S Naz, AI Umar, SB Ahmed, SH Shirazi, MI Razzak, I Siddiqi 17th IEEE International Multi Topic Conference 2014, 255-259	08/12/2014	
2	**2011**	Segmentation through DWT and adaptive morphological closing N ul Haq, K Hayat, SH Sherazi, W Puech 2011 19th European Signal Processing Conference, 31-35	29/08/2011	

References:

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