



Dr. MUHAMMAD SARIM

University Address

Department of Computer Science
Federal Urdu University of Arts, Science and Technology
Karachi, 75300
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Home Address

B-193, Block 5,
Gulshan-e-Iqbal,
Karachi, 75300
cell: +92 (0333) 352 1102

POSITION DESIRED

I am looking for a position of Professor / Associate Professor of Computer Science for which my teaching/research experience and publications meets the High Education Commission (HEC) criteria.

I have around 20 years of teaching and research experience at University level. Also served as Visiting faculty at different Public and Private sector Universities in Karachi including IBA, FAST NU and Bahria University to name a few. I have authored 37 articles in national and international journals and have also written 14 conference papers in international conferences. I have successfully supervised 3 PhD thesis and 7 MS thesis while 5 PhD and 3 MS students are currently under supervision.

I have also served at different administrative positions for more than five years like Head of Computer Science Department, Director I. T. and Incharge MS /PhD program.

RESEARCH INTERESTS

Image Processing, Computer Vision, Machine Learning, Pattern Recognition, Natural Language Processing, Deep Learning and Data Science.

EDUCATION



Doctor of Philosophy

Computer Vision and Machine Learning
University of Surrey
Guildford, Surrey, United Kingdom.

October, 2010
Distinguished
Research Student



Master of Science

Physics with major in Electronics
University of Karachi
Karachi, Pakistan.

December, 2000
Gold Medalist



Bachelor of Science (Hons.)

Physics
University of Karachi
Karachi, Pakistan.

December, 1999
Gold Medalist

TEACHING EXPERIENCE


Assistant Professor

Federal Urdu University of Arts, Science and Technology
Karachi, Pakistan

9 years, 3 months

Feb 2011 – present


Lecturer

Federal Urdu University of Arts, Science and Technology
Karachi, Pakistan

6 years, 2 months

Dec 2004 – Jan 2011


Full-time Co-operative teacher

University of Karachi
Karachi, Pakistan

3 years, 0 months

July 2001 – June 2004


Visiting faculty member

Institute of Business Administration
Karachi, Pakistan

Feb 2013 – present


Visiting Faculty Member

FAST NU
Karachi, Pakistan

Aug 2016 – Dec 2016

Jan 2020 – present


Visiting Faculty Member

Bahria University
Karachi, Pakistan

Sep 2011 – Present


Visiting faculty member

Mohammad Ali Jinnah University
Karachi, Pakistan

Jan 2012 – June 2012


Visiting faculty member

Jinnah University for Women
Karachi, Pakistan

July 2011 – May 2013

ADMINISTRATIVE EXPERIENCE


Registrar (Additional Charge)

Federal Urdu University of Arts, Science and Technology
Karachi, Pakistan

2 years, 9 months

April 2016 – Sep 2017

Nov 2018 – Jan 2020



Head of Computer Science Department

Federal Urdu University of Arts, Science and Technology
Karachi, Pakistan

0 years, 7 months
April 2018 – Nov 2018



Director IT (Additional Charge)

Federal Urdu University of Arts, Science and Technology
Karachi, Pakistan

2 years, 0 months
Oct 2015 – Sep 2017



Incharge MS/PhD Program (Computer Science)

Federal Urdu University of Arts, Science and Technology
Karachi, Pakistan

2 years, 3 months
Sep 2016 – Nov 2018

RESEARCH & INDUSTRIAL LINKAGE



HEC Approved Supervisor

Higher Education Commission
Islamabad, Pakistan

May 2011 – present



Research Consultant

United Medical and Dental College
Karachi, Pakistan

July 2017 – present



IT Research Consultant

The Indus Hospital
Karachi, Pakistan

May 2012 – present



Member Graduate Research Management Council

Federal Urdu University of Arts, Science and Technology
Karachi, Pakistan

June 2011 – Aug 2017



Member Advisory Board

Institute of Business and Management
Karachi, Pakistan

August 2014 – present



Visiting Post-Doctoral Research Fellow

University of Surrey
Guildford, United Kingdom

Feb 2011 – Jan 2012



Research Fellow
University of Surrey
Guildford, United Kingdom

June 2010 – Dec 2010

JOURNAL PUBLICATIONS

Summary

Total : 38 International: 16 Local: 22

International

1. S Rizwan Ali, Farah Naz, Humaira Akber, M Naeem, S Imran Ali, S Abdul Basit, M Sarim, and Sadaf Qaseem, Effect of particle size distribution on magnetic behavior of Nanoparticles with uni-axial anisotropy, Chinese Physics B, 27(9), 2018.
2. Naeem Ahmed, Abdul Basit Shaikh and Muhammad Sarim, Critical Success Factors Plays a Vital Role in ERP Implementation in Developing Countries: An Exploratory Study in Pakistan. International Journal of Advanced Computer Science and Applications, Vol. 8, No. 10, 2017.
3. Muhammad Ashraf, Muhammad Sarim and Abdul Basit Shaikh, Cellular-Cut-Interactive n-Dimensional Image Segmentation Using Cellular Automata, International Journal of Pattern Recognition and Artificial Intelligence, 31, 2017.
4. Naveed Alam, Muhammad Sarim, Abdul Basit Shaikh, Sheikh Kashif Raffat, Adnan Nadeem and Kamran Ahsan, Face Recognition Using Non-negative Matrix Factorization (NMF) An Analysis of Order of Decomposition on Recognition Rate, Research Journal of Recent Science, Vol.4, Issue.4, 77-82, April 2015.
5. Farhan Shafiq, Kamran Ahsan, Adnan Nadeem, Muhammad Sarim, Abdul Basit Shaikh and Muhammad Siddiq, Role of ICT in Climate Change Monitoring: A review Study of ICT based Climate Change Monitoring Services, Research Journal of Recent Science, Vol.3, Issue.12, 123-130, December 2014.
6. Shahab Uddin, Muhammad Sarim, Abdul Basit Shaikh and Sheikh Kashif Raffat, Offline Urdu Numeral Recognition Using Non-Negative Matrix Factorization, Research Journal of Recent Science, Vol.3, Issue.11, 98-102, November 2014.
7. Wafa Qaiser Khan, Reema Qaiser Khan, Muhammad Sarim, Abdul Basit Shaikh and Sheikh Kashif Raffat, An Assistive Model for ICT Applications for Color Blindness, Research Journal of Recent Science, Vol.3, Issue.10, 63-68, October 2014.
8. S. Azfar, A. Nadeem, K. Ahsan and M. Sarim, Impact Analysis and a Detection Method for Misbehaving Nodes in MANETs, Journal of Basic and Applied Scientific Research, Vol.4, No.8, 26-39, August 2014.
9. A. Salam, A. Nadeem, K. Ahsan and M. Sarim, A Class based QoS mechanism for Body Area Sensor Networks, Research Journal of Recent Science, ISSN: 2277 2502, 69-78, Vol.3, Issue.7, July 2014.
10. A. Salam, A. Nadeem, K. Ahsan, M. Sarim and K. Rizwan, A novel QoS algorithm for Health Care applications of Body Area Sensor Networks, Journal of Basic and Applied Scientific Research, Vol.4, No.7, 169-178, July 2014.
11. A. B. Sheikh, M. Sarim, A. Mosteret, A. Nadeem and K.Ahsan, Integrating Entrepreneurship into the Teaching of IT, Research Journal of Recent Science, Vol.3, Issue.6, 112-115, June 2014.

12. M. A. Nisar, A. Mehmood, A. Nadeem, and M. Sarim, A Two dimensional Performance Analysis of Mobility Models for MANETs and VANETs, Research Journal of Recent Science, ISSN : 2277 2502, Vol.3, Issue.5, 94-103, May 2014.
13. K. Ahsan, S. Iqbal, A. Nadeem and M. Sarim, UniCon Remote Control Model - A Mobile System for Assistive Technology, Research Journal of Recent Science, ISSN:2277 2502, Vol.3, Issue.4, 95-102, April 2014.
14. A. B .Sheikh, M. Sarim, S. K. Riffat, K. Ahsan and A. Nadeem. Artificial Neural Network: A Tool for Diagnosing Osteoporosis, Research Journal of Recent Science, ISSN: 2277 2502, Vol.3(2), 87-91, February 2014.
15. A. B., Shaikh, M. Sarim, S. K., Raffat, M. Khan and A. Chinoy. Bone Mineral Density Correlation Against Bone Radiograph Texture Analysis: An Alternative Approach, Research Journal of Recent Sciences, 2, 2013.
16. Hansung Kim, Jean-Yves Guillemaut, Takeshi Takai, Muhammad Sarim and Adrian Hilton. Outdoor Dynamic 3-D Scene Reconstruction. IEEE Transactions on Circuits and Systems for Video Technology, vol pp, no.99, 2012.

National

1. Faheem Ali, Muhammad Naeem Arbab, Gulzar Ahmed, Majid Ashraf, Muhmmad Sarim, An SVC controller for Power Quality Improvement of a Heavily Loaded Grid. Mehran University Research Journal of Engineering and Technology, 39(2), 2020.
2. Gulzar Ahmad, Asif Sultan, Tariqullah Jan, Majid Ashraf, and Muhammad Sarim, A Novel Low Profile Rectangular Microstrip Patch Antenna for L-Band Applications Using High Permittivity Substrate. Mehran University Research Journal of Engineering and Technology, 38(4), 2019.
3. Muhammad Shumail Naveed and Muhammad Sarim, Didactic Strategy for Learning Theory of Automata & Formal Languages, Proceedings of the Pakistan Academy of Sciences, 55(2), 2018.
4. Muhammad Shumail Naveed, Muhammad Sarim and Adnan Nadeem, C in CS1: Snags and Viable Solution, Mehran University Research Journal of Engineering and Technology, 37(1), 2018.
5. Naveed Alam, Muhammad Sarim and Abdul Basit Shaikh, A Global Sampling Based Image Matting Using Non-Negative Matrix Factorization, Mehran University Research Journal of Engineering and Technology, 36(4), 2017.
6. Muhammad Ashraf, Muhammad Sarim and Abdul Basit Shaikh, A New Framework for Interactive Image Segmentation, Mehran University Research Journal of Engineering and Technology, 36(3), 2017.
7. Anam Akbar, Muhammad Sarim and Abdul Basit Shaikh, Coherent Spatial and Colour Blended Exemplar Inpainting, Mehran University Research Journal of Engineering and Technology, 36(2), 2017.
8. Adnan Nadeem, Kamran Ahsan and Muhammad Sarim, Illustration, Detection & Prevention of Sleep Deprivation Anomaly in Mobile Ad Hoc Networks, Mehran University Research Journal of Engineering and Technology, 36(1), 2017.
9. M A Hussain, K Ahsan, A Nadeem, M Sarim, A Basit, M Siddique and Q ul Arifeen, Remote Control Model for Smart Living A Mobile Technology Approach, Sindh University Research Journal, 49(1), 2017.
10. Muhammad Sajid, Kamran Ahsan and Muhammad Sarim, M-Health Service for Train Passengers Using Mobile GPS System: An ArchiMate Service Layer Model, Mehran University Research Journal of Engineering and Technology, 36(1), 2017.
11. Anam Akbar, Muhammad Sarim and Abdul Basit Shaikh, Non Blinded Image Inpainting With Low Rank Non-Negative Matrix Factorization, Sindh University Research Journal, 48(4), 2016.
12. Muhammad Shumail Naveed, Muhammad Sarim and Kamran Ahsan, Learners Programming Language a Helping System for Introductory Programming Courses, Mehran University Research Journal of Engineering and Technology, 35(3), 2016.

13. Muhammad Azhar Hussain, Kamran Ahsan, Sarwat Iqbal, Adnan Nadeem and Muhammad Sarim, Assisting Disabled Persons in Online Shopping: A Knowledge-Based Process Model, *Journal of Basic and Applied Sciences*, 12, 2016.
14. Muhammad Shahzad, Kamran Ahsan, Adnan Nadeem and Muhammad Sarim, Gene Ontology Tools: A Comparative Study, *Journal of Basic and Applied Sciences*, 11, 2015.
15. Sheikh Kashif Raffat, Muhammad Sarim, Abdul Basit Shaikh and Mansoor Ali, Bone Microarchitecture: An Alternate Approach for Fracture Risk Estimation, *FUUAST Journal of Biology*, 52, 2015.
16. Syed Ikhtlaq Hussain, Muhammad Zahid, Imtiaz Ahmad and Muhammad Sarim, Toxicity of Deltamethrin and Biosal Against *Eysarcoris Modestus* (distant) by Filter Paper Impregnation Method, *FUUAST Journal of Biology*, 52, 2015.
17. Sheikh Kashif Raffat, Muhammad Sarim, Salwa Iqbal, and Muhammad Shahab, OBO EDIT: A Tool For Classifying The Biological Data, *FUUAST Journal of Biology*, 52, 2015.
18. Muhammad Shumail Naveed, Muhammad Sarim and Kamran Ahsan, On the Felicitous Applications of Natural Language, *Science International (Lahore)*, 27(3), 2643-2644, 2015.
19. Sheikh Kashif Raffat, Muhammad Sarim, Abdul Basit Shaikh and Akhter Raza Syed, Bone Mineral Density Comparison of total body, Lumber and Thoracic: An exploratory study, *Journal of Pakistan Medical Association*, Vol. 65, No. 4, April, 2015.
20. Sheikh Kashif Raffat, Khawaja Fahad Jawed, Muhammad Siddiq and Muhammad Sarim, Impact of Multimedia on Society, *Science International (Lahore)*, 27(1), 545-547, 2015.
21. Salwa Iqbal, Sheikh Kashif Raffat, Muhammad Sarim and Muhammad Siddiq, Carrer Commitment: A Positive Relationship with Employee's Performance, *Science International (Lahore)*, 26(5), 2415-2418, 2014.
22. S. Iqbal, S. K. Raffat, M. Sarim, A. B. Shaikh, Integration Management: A Report On The Construction Projects, *Science International (Lahore)*, 26(3), 1079-1081, 2014.

CONFERENCE PUBLICATIONS

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1. Usman khan, Maaz bin Ahmed, Farhan Shafiq, Muhammad Sarim, Urdu Language Processing Issues and Challenges: A Review Study. *In proceedings of Springer International Conference on Intelligent Technologies and Applications*, May 2020. (Part of the Communications in Computer and Information Science book series CCIS vol 1198)
 2. Usman khan, Muhammad Sarim, Maaz bin Ahmed, Farhan Shafiq, Feature Extraction and Modeling Techniques in Speech Recognition: A Review. *In proceedings of IEEE International Conference on Information Systems Engineering (ICISE)*, May 2019.
 3. N. Alam, M. Sarim and A. B. Shaikh. A global non-parametric sampling based image matting. *In proceedings of IEEE International Conference on Emerging Technologies.*, December 9-10, 2013.
 4. Muhammad Ashraf, Zubair Sajid, Muhammad Sarim and Abdul Basit Shaikh. Face recognition using weighted distance transform. *In proceedings of IEEE International Bhurban Conference on Applied Sciences and Technology.*, January, 2013.
 5. Muhammad Sarim, Adrian Hilton and Jean-Yves Guillemaut. Temporal trimap propagation for video matting using inferential statistics. *In proceedings of IEEE International Conference on Image Processing*, 2011.
 6. Muhammad Sarim, Adrian Hilton, Jean-Yves Guillemaut, Hansung Kim and Takeshi Takai. Multiple view wide-baseline trimap propagation for natural video matting. *In Proceedings of European Conference on Visual Media Production*, London, United Kingdom, November 17-18, 2010, ISBN: 978-1-4244-8872-8.

7. Muhammad Sarim, Adrian Hilton, Jean-Yves Guillemaut, Hansung Kim and Takeshi Takai. Wide-Baseline Multi-View Video Segmentation For 3D Reconstruction. In *Proceedings of ACM Multimedia International Workshop on 3D Video Processing*, Florence, Italy, October 25-29, 2010, ISBN: 978-1-4503-0159-6.
8. Jean-Yves Guillemaut, Muhammad Sarim and Adrian Hilton. Stereoscopic content production of complex dynamic scenes using a wide-baseline monoscopic camera set-up. In *proceedings of IEEE international Conference on Image Processing*, September 26-29, 2010, ISBN: 978-1-4244-7992-4.
9. Muhammad Sarim, Adrian Hilton, Jean-Yves Guillemaut, Takeshi Takai, Hansung Kim. Natural image matting for multiple wide-baseline views. In *proceedings of IEEE International Conference on Image Processing*, September 26-29, 2010, ISBN: 978-1-4244-7992-4.
10. Hansung Kim, Muhammad Sarim, Takeshi Takai, Jean-Yves Guillemaut and Adrian Hilton. Dynamic 3D scene reconstruction in outdoor environments. In *proceedings of 3D Data Processing, Visualization and Transmission*, May 17-20, 2010.
11. Muhammad Sarim, Adrian Hilton and Jean-Yves. Wide-baseline matte propagation for indoor scenes. In *proceedings of European Conference on Visual Media Production*, November 12-13, 2009, ISBN: 978-1-4244-5257-6.
12. Muhammad Sarim, Adrian Hilton and Jean-Yves Guillemaut. Non-parametric patch based video matting. In *proceedings of British Machine Vision Conference*, September 7-10, 2009.
13. Muhammad Sarim, Adrian Hilton and Jean-Yves Guillemaut. Alpha matte estimation of natural images using local and global template correspondence. In *proceedings of IEEE International Conference on Emerging Technologies*, October 19-20, 2009, ISBN: 978-1-4244-5630-7.
14. Muhammad Sarim, Adrian Hilton, Jean-Yves Guillemaut and Hansung Kim. Non-parametric natural image matting. In *proceedings of IEEE International Conference on Image Processing*, November 7-10, 2009, ISBN: 978-1-4244-5653-6.

CONFERENCES and SEMINARS

-
- Attended more than two dozen international conferences, workshops and seminar around the world related to topics on Image Processing, Computer Vision and Machine Learning.
 - Publication Chair of 1st International Conference on Information and Communication Technology Trends, 2013.

RESEARCH SUPERVISION

Successfully Supervised

PhD Thesis: 3

MS Thesis: 7

PhD Titles:

1. Image and video segmentation using cellular automata with global constraints.
2. Enterprise Resource Planning (ERP) Implementation in Small and Medium Sized Enterprises (SMEs) in Pakistan.
3. Ceremonial syntax and semantic structure of naturalistic programming language for apprentices.

MS Titles:

1. Image matting based on Super-pixel model of foreground and background regions
2. Handwritten Urdu numeral recognition.
3. Expression Recognition using Facial Curvatures.
4. Face recognition using weighted distance transform.

5. Wide-baseline video segmentation using global and local parametric models.
6. Retina verification and identification using Hough transform and shape probability optimisation
7. Video Segmentation using non-parametric template optimisation.

Current Supervision

PhD Thesis: 5

MS Thesis: 3

PhD Titles:

1. Fracture risk estimation using texture analysis of bone micro-architecture.
2. Explorations of techniques in pre-processing and feature extraction of Electroencephelographic data from brain computer interfaces.
3. Image and video matting using Non-negative Matrix Factorization.
4. Image inpainting using global template search based on non-negative matrix factorization.
5. Human activity recognition for sports analysis.

MS Titles:

1. Automatic Micro-fossil Recognition from SEM images.
2. Urdu handwriting recognition using external shape analysis.
3. Disease Classification based on Hematological Findings.

ACHIEVEMENTS and AWARDS

- | | |
|---|------|
| • Nominated for the best paper award in European Conference on Visual Media Production. | 2010 |
| • Awarded Higher Education Commission Foreign PhD scholarship. | 2006 |
| • Awarded Dr. Abdul Qadir Khan gold medal. | 2002 |
| • Awarded Nishan-e-Sipas by the Jang Group. | 2002 |
| • Awarded a Gold Medal by Philips Electrical Company. | 2001 |
| • Secured First class First position in M.Sc. | 2000 |
| • Secured First class First position in B.Sc.(Hons.). | 1999 |

AFFILIATIONS



REFERENCES

Will be provided upon request.