DR. M. USMAN AKRAM

CONTACT INFORMATION

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EDUCATION

Apr 2010 – Oct 2012 PhD in **Computer Engineering,** E&ME (NUST), Rawalpindi,Pakistan   **CGPA: 4.00/4.00**

Sept 2008 – Apr 2010 Masters in **Computer Engineering,** E&ME (NUST), Rawalpindi, Pakistan   **CGPA: 4.00/4.00**

2004 – 2008 Bachelor in **Computer System Engineering**, E&ME (NUST), Rawalpindi, Pakistan   **CGPA: 3.86/4.00**

PHD THESIS

Retinal Image Analysis and Hybrid Classifier for Screening of Diabetic Retinopathy

MS THESIS

Diagnosis of diabetic retinopathy using image processing techniques

UG PROJECT

Design and Implementation of **Massively Parallel Fingerprint Recognition System for Performing Multi Million Matches Per Second**

TEACHING EXPERIENCE

- **Mar 2013 - Till Present (Assistant Professor)** College of E&ME, NUST
- **Jan 2013 – June 2013 (Assistant Professor)** Bahria University, Islamabad
- **Aug 2009- Jan 2013 (Senior Lecturer)** Bahria University, Islamabad
- **Feb 2008- July 2009 (Lab Engineer)** College of E&ME, NUST
- **March 2008- Feb 2009 (Lecturer Visiting Faculty)** Foundation University Institute of Management and Computer Sciences (FUIMCS)

INDUSTRIAL EXPERIENCE

- **July 2013 - Till date**
  Team Lead on ICT R&D Funded Project "Development of a Net Enabled Retinal Image Analysis & Screening System for Grading & Diagnosis of Diabetic Retinopathy and its Integration in i-telemedicine System", CASE, Islamabad

RESEARCH

- Won **Silver award** in **APICTA** (Asia Pacific ICT Alliance Awards) 2013 in

GRANTS, AWARDS & ACHIEVEMENTS	category of R&D, hosted by Hong Kong

- Won **P@SHA ICT award 2013** in category of R&D for product named 'i-hospital'
- **Founder and group leader** of BIOmetrics, Medical Image & Signal Analysis (BIOMISA) research group at College of E&ME, NUST
- Grant of **Rs 13.4M** received from National ICT R&D Fund for the project "Development of a Net Enabled Retinal Image Analysis & Screening System for Grading & Diagnosis of Diabetic Retinopathy and its Integration in i-telemedicine System". The project has started and I am working as team lead.
- Grant of **Rs 27500/-** for "A Secure Personal Identification System Based on Human Retina" from ICT R&D under the scheme of grass root projects
- Won **Silver award** in **APICTA** (Asia Pacific ICT Awards) 2012 in category of R&D, hosted by Brunei Darussalam
- Received **travel fellowship** of $500 from 9th International Conference on Neural Information Processing (ICONIP 2012), Qatar for paper presentation
- Won **P@SHA ICT award 2012** in category of R&D
- Received various **cash awards** from NUST and bahria University for publications in Impact factor journals
- Grant of **Rs 50000/-** for "Electro kinetic Energy Ramp System" from ICT R&D under the scheme of grass root projects
- **Gold Medal** in MS Computer Engineering
- Award for securing **3rd position in B.E.** Computer Engineering
- Award for most **research publications** in undergraduate
- **2nd Prize** in COMPPEC08 at E&ME College, NUST, Apr08
- **Nomination for best Final Year Project** in undergraduate
- **Commandant Award for outstanding Achievements** in fall 06 and fall 07 semesters
- **Winner** in All Pakistan Moblink Science Fair Project Exhibition at GIKI Pakistan, 22-24 Feb08
- **Runner-ups Research Paper Award** at 'All Pakistan Electrical Engineering Conference' (APE2C) at GIK Institute of Technology, Pakistan, Nov-2007
- **GPA Scholarship** in all semesters during Bachelor Degree
- Selected for **summer internship** in **University of Surrey**, England, July 2007
- **Position Holder** throughout in studies

EDITORIAL ACTIVITIES	**Member Technical Review Committee**. Serving on the review committee of Computer and Electrical Engineering, Journal of digital imaging, Computer methods in biology, Transaction on Medical Image Processing (TMI), Transaction on Biomedical engineering (TBME)

PRESENTATIONS	

1. IEEE Symposium on Industrial Electronics and Applications (ISIEA 2013), Kuching, Malaysia, 22-25 Sept, 2013
2. IEEE Symposium Series on Computational Intelligence (SSCI 2013), 16-19 Apr, Singapore, 2013
3. 9th IEEE International Conference on Neural Information Processing (ICONIP), 12-15 Nov, Doha, Qatar, 2012

4. 6th IEEE International Conference on Internet Technology and Secured Transactions (ICITST), 11-14 Dec, UAE, 2011
5. IEEE International Conference on Computer Networks and Information Technology (ICCNIT), July 2011, Abbottabad, Pakistan
6. IEEE Symposium on Industrial Electronics and Applications (ISIEA 2010), 3rd – 6th October 2010, Penang, Malaysia.
7. 7th ACM International Conference on Frontiers of Information Technology (FIT), Pakistan, Abbottabad, Pakistan, Dec 2009.
8. 11th IEEE International Multitopic Conference (INMIC), Karachi, Pakistan, Dec08.

POST GRADUATE STUDENTS

PHD:
1. Adeel Muzzafer: Analysis of OCT Images for Detection of Macular Edema. 2013 - Till Now
2. Samina Khalid: RPE Layer Segmentation in OCT Images for Diagnosis of AMD. 2013 - Till Now
3. Tehmina Khalil: Glaucoma Classification by Analyzing OCT Image Layers. 2013 - Till Now

MS:
1. Joddat Fatima: Retinal Blood Vascular Pattern Based Personal Identification. Feb 2013 - June 2013 **(Completed)**
2. Zainab Wajahat, Retinal Image Analysis for Diagnosis of Macular Edema using Digital Fundus Images. Mar 2013 - Oct 2013 **(Completed)**
3. Sundas Mujhtaba: Drusen Detection for Grading of Age Related Macular Degeneration in Fundus Images. Mar 2013 - Dec 2013 **(Completed)**
4. Rizwan Haider: Computer aided diagnostic system for detection of Glaucoma. April 2013 - April 2014 **(Completed)**
5. Hassan Moatasam, Person Identification Using Dorsal Hand Veins Recognition, Aug 2013 - May 2014 **(Completed)**
6. Israr ul Haq: Automated Detection of New Vessels for Classification of PDR. Apr 2013 - Jan 2014 **(Co-Supervisor)** **(Completed)**
7. Tahir Akram: Automated Detection and Grading of Diabetic Maculopathy in Digital Retinal Images. July 2013 - May 2014 **(Co-Supervisor)** **(Completed)**
8. Noor ul Huda: Abnormal blood Vessel Detection from Digital Fundus Images for Detection of Advance Diabetic Retinopathy. Sept 2013 - Aug 2014 **(Co-Supervisor)** **(Completed)**
9. Saima Wasim: Analysis of Retinal Images for Reliable Detection of Drusen. Nov 2013 - Till Now
10. Aniqa Azam: Detection of New vessels on Disc in Fundus Images. Nov 2013 - Till Now
11. M. Mohsin Malik: Automated Layer Segmentation from OCT images. Nov 2013 - Till Now
12. Sidra Rashid: Artificial Intelligence based Wireless Sensor Network for Leakage Detection in Long Range Pipelines. Nov 2013 - Mar 2014 **(Completed) (Co-Supervisor)**
13. Samra Irshad: Development of an automated system for the diagnosis of

hypertensive retinopathy. Feb 2014 - Till Now **(Co-Supervisor)**

14. Muneeba Saleem: Detection of Retinal Whitening and Hemorrhages for Diagnosis of Malarial Retinopathy. June 2014 - Till Now
15. Uzma Abbasi: Detection of Hypertensive Retinopathy using Machine Learning Techniques. Mar 2014 - Till Now
16. Faisal: Person recognition based on dental images. Mar 2014 - Till Now **(Co-Supervisor)**

RESEARCH
PUBLICATIONS

Book Chapters:

1. **M. Usman Akram,** Anam Tariq, Shafaat A Bazaz, Ubaid ullah Yasin, "Self Diagnostic and Telemedicine System for Detection and Grading of Diabetic Retinopathy", In book Ensuring Patient Safety and Confidentiality through Secure Health Information Management. Proposal accepted.
2. **M. Usman Akram,** Sarmad Abbas, Anam Usman, Ubaid ullah Yasin, "Detection of Hemorrhages in Colored Fundus Images using Non Uniform Illumination Estimation", Image analysis and Recognition, Lecture Notes in Computer Science, (Berlin, Heidelberg: Springer), LNCS, Portugal, 2014.
3. Anam Usman, Sarmad Abbas, **M. Usman Akram**, Yasser Nadeem, " A Robust Algorithm for Optic Disc Segmentation from Colored Fundus Images", Image analysis and Recognition, Lecture Notes in Computer Science, (Berlin, Heidelberg: Springer), LNCS, Portugal, 2014.
4. **M. Usman Akram**, Shehzad Khalid, "A software system for grading diabetic retinopathy by analyzing retinal images", In book "Knowledge based processes in software development", IGI Global, 2012.
5. **M. Usman Akram**, Anam Tariq, Shoab A Khan, "Detection of Neovascularization for Screening of Proliferative Diabetic Retinopathy", Image analysis and Recognition, Lecture Notes in Computer Science, (Berlin, Heidelberg: Springer), LNCS, Portugal, pp. 372-379, Portugal, June12.
6. **M. Usman Akram**, Aftab Khan, Khalid Iqbal and Wasi Haider Butt, "Retinal Image: Optic Disk Localization and Detection", Image analysis and Recognition, Lecture Notes in Computer Science, (Berlin, Heidelberg: Springer), LNCS 6112, pp.40-49, Portugal, June10.
7. Anam Tariq, **M. Usman Akram**, Sarwat Nasir, Rabia Arshad, "Fingerprint Image Postprocessing Using Windowing Technique", Image analysis and Recognition, Lecture Notes in Computer Science, (Berlin, Heidelberg: Springer), LNCS 5112, pp. 915–924, Portugal, June08.
8. Rabia Anwar**, M. Usman Akram,** Rabia Arshad**,** "A Modified Singular Point Detection Algorithm", Image analysis and Recognition, Lecture Notes in Computer Science, (Berlin, Heidelberg: Springer), LNCS 5112, pp. 905–914, Portugal, June 2008.

Journal Papers:

9. Shehzad Khalid, **M. Usman Akram,** Shahid Razzaq, "Behaviour recognition using multivariate m-Mediods based modelling of motion trajectories", Multimedia Systems, 2014 (accepted). **[impact factor: 0.43]**
10. Wasi Haider Butt, **M. Usman Akram**, Shoab A Khan, M. Yonus Javed, "Covert Network Analysis for Key Player Detection and Event Prediction Using a Hybrid Classifier," The Scientific World Journal, vol. 2014, Article ID 615431, 13 pages,

2014. doi:10.1155/2014/615431. **[impact factor: 1.730]**

11. **M. Usman Akram**, Anam Tariq, Shoab A Khan, M. Younus Javed, "Automated Detection of Exudates and Macula for Grading of Diabetic Macular Edema", Computer Methods and Programs in Biomedicines, Volume 114, Issue 2, pp. 141–152, April 2014. **[impact factor: 1.555]**

12. **M. Usman Akram**, Shehzad Khalid, Anam Tariq, Shoab A Khan, Farooque Azam, "Detection and Classification of Retinal Lesions for Grading of Diabetic Retinopathy", Computers in Biology and Medicines, Volume 45, Issue 1, pp. 161–171, , February 2014. **[impact factor: 1.162]**

13. **M. Usman Akram**, Shehzad Khalid, Anam Tariq, M. Younus Javed, "Detection of Neovascularization in Retinal Images using Multivariate m-Mediods based Classifier", Computerized Medical Imaging and Graphics, Vol 37, pp. 346-357, 2013 **[impact factor: 1.664]**

14. Anam Tariq, **M. Usman Akram**, Arslan Shaukat, Shoab A Khan, Automated Detection and Grading of Diabetic Maculopathy in Digital Retinal Images Springer Journal of Digital Imaging, Vol. 26, No. 4, pp. 803-812, 2013. **[Impact factor: 1.255]**

15. **M. Usman Akram,** Shehzad Khalid, Shoab A Khan, "Identification and Classification of Microaneurysms for Early Detection of Diabetic Retinopathy", Pattern Recognition (Elsevier), Vol 46, No.1, 107-116, 2013 **[Impact Factor: 2.63]**

16. **M. Usman Akram** and Shoab A. Khan, "Multilayered Thresholding Based Blood Vessel Segmentation for Screening of Diabetic Retinopathy", Springer journal of Engineering with Computers (EWCO), Vol. 29, No. 2, pp. 165-173, 2013. **[Impact factor:0.739]**

17. **M. Usman Akram**, Anam Tariq, M. Almas Anjum, M. Younus Javed, "Automated Detection of Exudates in Colored Retinal Images for Diagnosis of Diabetic Retinopathy", OSA Journal of Applied Optics, Vol. 51 No. 20, 4858-4866, 2012**. [Impact factor: 1.748]**

18. **M. Usman Akram** and Shoab A. Khan, "Automated detection of dark and bright lesions in retinal images for early detection of diabetic retinopathy", Springer Journal of Medical Systems (JOMS), Vol. 36, No. 5, 3151-3162, 2012. **[Impact factor:1.783]**

19. Safia Shabbir, Anam Tariq and **M. Usman Akram**, "A Comparison and Evaluation of Computerized Methods for Blood Vessel Enhancement and Segmentation in Retinal Images", International Journal of Future Computer and Communication, Vol. 2, No. 6, 600-603, 2013.

20. Kiran Yaseen, Anam Tariq and **M. Usman Akram**, "A Comparison and Evaluation of Computerized Methods for OD Localization and Detection in Retinal Images", International Journal of Future Computer and Communication, Vol. 2, No. 6, 613-616, 2013.

21. Ibaa Jamal, **M Usman Akram**, Retinal Image Preprocessing: Background and Noise Segmentation , TELKOMNIKA Indonesian Journal on Electrical Engineering, Vol. 10, No. 3, pp. 537-544, 2012

22. **M. Usman Akram**, Ibaa Jamal, Anam Tariq, "Blood Vessel Enhancement and Segmentation for Screening of Diabetic Retinopathy", TELKOMNIKA Indonesian Journal on Electrical Engineering, Vol. 10, No. 2, pp. 327-334, 2012

23. Anam Tariq, **M, Usman Akram**, Personal Identification using Ear Recognition, TELKOMNIKA Indonesian Journal on Electrical Engineering, Vol. 10, No. 2, pp. 321-326, 2012

24. **M. Usman Akram**, Assia Khanum, Khalid Iqbal, "An automated System for Liver CT Enhancement and Segmentation", ICGST-GVIP Journal, Vol. 10, No. 4, pp. 17-22, October 2010 **[ISSN # 1687-4005]**

25. **M. Usman Akram**, Anam Tariq, Sarwat Nasir, Shoab A. Khan, "Fingerprint Image: Pre and Post-Processing", International **Journal** of Biometrics, Inderscience, Vol.1, No.1, pp. 63-80, May2008 **[ISSN # 1755-8301]**

Conference Proceedings:

26. S. Ayaz, S. Sahar, M. Zafar, **M. U. Akram**, Y. Nadeem "Analysis of OCT Images for Detection of Choroidal Neovascularization in Retinal Pigment Epithelial Layer", 21st International Conference on Neural Information Processing, Malaysia, Nov 2014.

27. M. U. Azhar, M. D. Ashraf, A. Haider, S. O. Maruf, M. Naqvi, S. G. Khawaja, M. U. **Akram,** "Separation and Classification of Crackles and Bronchial Breath Sounds from Normal Breath Sounds Using Gaussian Mixture Model", 21st International Conference on Neural Information Processing, Malaysia, Nov 2014.

28. M. D. Ashraf, M. U. Azhar, A. Haider, S. O. Maruf, S. G. Khawaja, **M. U. Akram,** M. Naqvi, "Crackle Separation and Classification from Normal Respiratory Sounds Using Gaussian Mixture Model", 12th International Conference on Signal Processing, China, Oct 2014.

29. A. F. Gill, S. A. Fatima, A. Nawaz, A. Nasir, **M. U. Akram**, S. G. Khawaja, S. Ejaz, "Time Domain Analysis of EEG Signals for Detection of Epileptic Seizure", 2014 IEEE Symposium on Industrial Electronics & Applications (ISIEA2014), Malaysia, Sept 2014.

30. Sabeen Basit, Shoab A Khan, **M. Usman Akram,** "Segmentation of Coronary Arteries", 2014 IEEE Symposium on Industrial Electronics & Applications (ISIEA2014), Malaysia, Sept 2014.

31. **M. Usman Akram**, Hassan Moatasam Awan, Abdullah Amaan Khan, "Dorsal Hand Veins Based Person Identification", 4th International Conference on Image Processing Theory, tools and applications, France, Oct 2014.

32. Sarmad Khitran, **M. Usman Akram**, Anam Usman, Ubaidullah Yasin, "Automated System for the Detection of Hypertensive Retinopathy", 4th International Conference on Image Processing Theory, tools and applications, France, Oct 2014.

33. Hassan Wahab, Syed Rizwan Haider, Sarmad Khitran, Noor ul Huda, M. Usman Akram, "Bright Region and Vessel Density based Robust Optic Disc Segmentation", 4th International Conference on Image Processing Theory, tools and applications, France, Oct 2014.

34. S. Rashid, **M. Usman Akram**, S. Khan, "Wireless Sensor Network for Distributed Event Detection based on Machine learning", 2014 IEEE International Conference on Green Computing and Communications (GreenCom 2014), Taiwan, 2014.

35. Y. Zaidi, **M. Usman Akram**, Anam Tariq, "Retinal Image Analysis for Diagnosis of Macular Edema using Digital Fundus Images", 2013 IEEE Jordan Conference on Applied Electrical Engineering and Computing Technologies (AEECT), Jorden, Dec 2013.

36. Ghazanfer Raza, Majid Rafique, Anam Tariq, **M. Usman Akram**, "Hybrid Classifier Based Drusen Detection in Colored Fundus Images", 2013 IEEE Jordan Conference on Applied Electrical Engineering and Computing Technologies (AEECT), Jorden, Dec 2013.
37. Khawar Ali, Shoab A Khan, **M. Usman Akram**, "Aircraft Tracking Based on KLT Feature Tracker and Image Modeling", 2013 IEEE Jordan Conference on Applied Electrical Engineering and Computing Technologies (AEECT), Jorden, Dec 2013.
38. **M. Usman Akram**, Sundus Mujtaba and Anam Tariq, "Automated Drusen Segmentation in Fundus Images for Diagnosing Age Related Macular Degeneration", 10th IEEE International Conference on Electronics, Computer and Computation, pp. 21-24, Turkey, Nov, 2013.
39. **M. Usman Akram**, Anam Tariq, Shoab Khan and Shafaat Bazaz, "Microaneurysm Detection for Early Diagnosis of Diabetic Retinopathy", 10th IEEE International Conference on Electronics, Computer and Computation, pp.25-28, Turkey, Nov, 2013.
40. Joddat Fatima, Adeel M Syed, **M. Usman Akram**, "Feature Point Validation for Improved Retina Recognition", 2013 IEEE Workshop on Biometrics Measurements and Systems for Security and Medical Applications, pp. 13-16, Italy, Sept 2013.
41. Joddat Fatima, Adeel M Syed, **M. Usman Akram**, "A Secure Personal Identification System Based on Human Retina", 2013 IEEE Symposium on Industrial Electronics and Applications (ISIEA 2013), pp. 90-95, Malaysia, Sept 2013.
42. **M. Usman Akram**, Anam Tariq, Zabeel Bashir, Shoab A Khan, "Gaussian Mixture Model Based Handwritten Numeral Character Recognition", 2013 IEEE Symposium on Industrial Electronics and Applications (ISIEA 2013), pp. 81-85, Malaysia, Sept 2013.
43. **M. Usman Akram**, Zabeel Bashir, Anam Tariq, Shoab A Khan "Geometric Feature Points Based Optical Character Recognition", 2013 IEEE Symposium on Industrial Electronics and Applications (ISIEA 2013), pp. 86-89, Malaysia, Sept 2013.
44. Anam Tariq, **M. Usman Akram**, and M. Younus Javed, "Lung Nodule Detection in CT Images using Neuro Fuzzy Classifier", IEEE Symposium Series on Computational Intelligence (SSCI), pp. 49-53, Singapore, 2013.
45. Anam Tariq, **M. Usman Akram**, and M. Younus Javed, "Computer Aided Diagnostic System for Grading of Diabetic Retinopathy", IEEE Symposium Series on Computational Intelligence (SSCI), pp. 30-35, Singapore, 2013.
46. Anam Tariq, **M. Usman Akram**, Arslan Shaukat, Shoab A Khan, "A Computer Aided System for Grading of Maculopathy", 6th Cairo International Conference on Biomedical Engineering, pp. 31-34, Egypt, 2012.
47. Umer Aftab, **M. Usman Akram**, "Automated Identification of Exudates for Detection of Macular Edema", 6th Cairo International Conference on Biomedical Engineering, pp. 27-30, Egypt, 2012.
48. Sana Qamber, Zahra Waheed, **M. Usman Akram**, "Personal Identification System Based on Vascular Pattern of Human Retina", 6th Cairo International Conference on Biomedical Engineering, pp.64-67, Egypt, 2012.
49. **M. Usman Akram**, Mahmood Akhtar, M. Younus Javed, "An Automated

System for the Grading of Diabetic Maculopathy in Fundus Images", 19th International Conference on Neural Information Processing, LNCS 6666, pp. 36-43, Nov 2012, Qatar

50. **M. Usman Akram**, Ibaa jamal, Anam Tariq and Junaid Imtiaz, "Automated Segmentation of Blood Vessels for Detection of Proliferative Diabetic Retinopathy", IEEE-EMBS International Conference on Biomedical and Health Informatics, pp. 232-235, Hong Kong, Jan 2012.

51. Anam Tariq, M. A. Anjum, **M. Usman Akram,** "Personal Identification using Computerized Human Ear Recognition System", IEEE International Conference on Computer Science and Network Technology (ICCSNT 2011), pp. 50-54, Dec 2011, China.

52. **M. Usman Akram**, Anam Tariq and Shoab A Khan, "Retinal Recognition: Personal Identification using Blood Vessels", 6th International Conference on Internet Technology and Secured Transactions (ICITST 2011), pp. 180-184, 11-14 Dec, UAE

53. Anam Tariq, **M. Usman Akram** and Shoab A Khan, "An Automated System for Fingerprint Classification using Singular Points for Biometric Security", 6th International Conference on Internet Technology and Secured Transactions (ICITST 2011), pp. 170-175, 11-14 Dec, UAE

54. **M. Usman Akram** and Anam Usman, "Computer Aided System for Brain Tumor Detection and Segmentation", IEEE International Conference on Computer Networks and Information Technology (ICCNIT), pp. 299-302, July 2011, Abbottabad, Pakistan

55. **M. Usman Akram**, Anuam Ayaz and Junaid Imtiaz, "Morphological and Gradient Based Fingerprint Image Segmentation", IEEE ICICT, July 2011, Karachi, Pakistan

56. Maryam Mubbashar, Anam Usman and **M. Usman Akram**, "Automated System for Macula Detection in Digital Retinal Images", IEEE ICICT, July 2011, Karachi, Pakistan

57. **M. Usman Akram** and Assia Khanum, "Retinal Images: Blood Vessel Segmentation by Threshold Probing", IEEE Symposium on Industrial Electronics and Applications (ISIEA 2010), pp.475-479, 3rd – 6th October 2010, Penang, Malaysia.

58. Anam Tariq**, M. Usman Akram**, "An Automated System for Colored Retinal Image Background and Noise Segmentation", IEEE Symposium on Industrial Electronics and Applications (ISIEA 2010), pp. 405-409, 3rd – 6th October 2010, Penang, Malaysia.

59. **M. Usman Akram** and Anam Tariq, "Automated Optic Disk Localization and Detection in Colored Retinal Images", ACM FIT, Pakistan, Dec 2009.

60. **M. Usman Akram**, Sarwat Nasir, Shoab A. Khan, "Comparison of Matched Filter and Wavelet Based Blood Vessel Enhancement", 11th IASTED Conference on Signal and Image Processing (SIP), pp. 260-264, USA, 17-19 August, 2009.

61. **M. Usman Akram**, Anam Tariq, Shoab A. Khan, "Retinal Images Blood Vessel Segmentation", 3rd IEEE International conference on Information and Communication Technologies, pp. 181-186, Pakistan, 15-16 August, 2009.

62. **M. Usman Akram**, Anam Tariq, "Cooperative Friendship Networks through SLAC and Newscast"**,** 3rd IEEE International conference on Information and Communication Technologies, pp. 31-34, Pakistan, 15-16 August, 2009.

63. **M. Usman Akram**, Ali Atzaz, M. Younus Javed, Umair Ali khan Niazi, **"**Preprocessing and Blood Vessel Segmentation of Retinal Images", IASTED conference on Visualization, Imaging and Image Processing (VIIP), pp. 13-18, UK, 13-15 July 2009.

64. **M. Usman Akram**, Anam Tariq, Sarwat Nasir, Shoab A. Khan**,** "Gabor Wavelet Based Vessel Segmentation in Retinal Images", IEEE CIIP, Tennessee, pp. 116-119, USA, 29, April, 09.

65. **M. Usman Akram**, Sarwat Nasir, M. Almas Anjum, M Younus Javed, "Background and Noise Extraction from Colored Retinal Images", IEEE CSIE, IEEE Computer Society, LosAngeles, pp. 573-577, USA, April, 09.

66. **M. Usman Akram**, Ali Atzaz, Syed Farrukh Aneeque, Shoab A. Khan**,** "Blood Vessel Enhancement and Segmentation Using Wavelet Transform", IEEE ICDIP, pp. 30-34, Thailand, March 2009.

67. **M. Usman Akram**, Anam Tariq, Sarwat Nasir, "Retinal Image: noise Segmentation"**,** IEEE INMIC, pp. 116-119, Pakistan, Dec08.

68. Sarwat Nasir, Imtiaz khokhar, **M. Usman Akram**, "Optimum Filter Overlapping Scheme For Deriving Speaker Dependent Mel Frequency Cepstral Coefficients", 10th IASTED Conference on Signal and Image Processing (SIP), USA, August08.

69. **M. Usman Akram**, Sarwat Nasir, Anam Tariq, Irfan Zafar, "Improved Fingerprint Image Segmentation using New Modified Gradient Based Technique", 21st IEEE Canadian conference on Electrical and Computer Engineering, pp. 1967-1971, Canada, May08.

70. Aasia Khanum, **M. Usman Akram,** "Fuzzy Based Facial Expression Recognition", IEEE Congress on Image and Signal Processing(CISP 2008), IEEE Computer Society, pp. 598-602, China, May 2008.

71. **M. Usman Akram**, Anam Tariq, Sarwat Nasir, Aasia Khanum, "Core Point Detection Using Improved Segmentation and orientation", The 6th ACS/IEEE International Conference on Computer Systems and Applications (AICCSA08), pp.637-644, Qatar, April 2008.

72. **M. Usman Akram**, Anam Tariq, Shahida Jabeen, Shoab A. Khan, "Fingerprint Image Segmentation Based on Boundary Values", 3rd International Conference on Computer Vision Theory and Applications (VISAPP08), Vol.1, pp. 134-138, Portugal, Jan 2008.

73. **M. Usman Akram,** Sarwat Nasir**,** Rabia Anwer, Rabia Arshad, Shoab A. Khan, "Core Point Detection Using Fine Orientation Field Estimation", 3rd International Conference on Computer Vision Theory and Applications (VISAPP08), Portugal, Vol.1, pp. 351-356, Jan 2008.

74. **M. Usman Akram,** Irfan Zafar, Wasim Siddique, Zohaib Mushtaq, "Facial Expression Recognition Based on Fuzzy Logic", 3rd International Conference on Computer Vision Theory and Applications (VISAPP08), Vol.1, pp. 383-388, Portugal, Jan 2008.

75. **M. Usman Akram**, Assia Khanam, "Optimal Core Point Detection", 3rd all Pakistan Electrical Engineering Conference (APE^{2}C), Pakistan, Nov. 2007 **(Runner-ups Paper Award)**

PROFESSIONAL MEMBERSHIPS	Member IEEE, Member IEEE Computational Society, Pakistan Engineering Council, HEC Approved PhD Supervisor

RESEARCH INTERESTS	• Medical Image Analysis • Pattern Recognition • Biometrics

MAJOR SUBJECTS

- Digital Image Processing
- Digital Signal Processing
- Artificial Intelligence
- Machine Learning
- Computer Vision
- Pattern Recognition

TECHNICAL SKILLS

- MATLAB
- Latex
- FPGA & DSP Kits
- Xilinx ISE 10.1

REFERENCES

Dr. Shoab A. Khan, (HoD Computer Department),
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