

Shervin Rahimzadeh Arashloo

CONTACT DETAILS

Department of Medical Informatics
Faculty of Medical Sciences
Tarbiat Modares University
Tehran, Iran

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RESEARCH INTERESTS

Computer Vision, Pattern Recognition, Machine Learning
Google Scholar: <https://goo.gl/zcm2tx>

ACADEMIC POSITIONS

Tarbiat Modares University, Tehran, Iran
Assistant Professor

Jan. 2016-present

University of Surrey, Guildford, UK
Visiting Research Fellow

Aug. 2017-Jul. 2020

University of Surrey, Guildford, UK
Visiting Research Fellow

Aug. 2014-Jul. 2017

Urmia University, Urmia, Iran
Assistant Professor

Oct. 2011-Jan. 2016

EDUCATION

Ph.D., Electronic engineering (Computer Vision), 2010

M.Sc., Electronic engineering, 2007

B.Sc., Electronic engineering, 2004

JOURNAL ARTICLES

J1. Arashloo, S.R. and Kittler J., "Energy Normalization for Pose-Invariant Face Recognition Based on MRF Model Image Matching", *Pattern Analysis and Machine Intelligence, IEEE Transactions on*, vol. 33, no. 6, pp. 1274-1280, Jun. 2011.

J2. Arashloo, S.R., Kittler, J. and Christmas, W.J., "Pose-Invariant Face Recognition by Matching on Multiresolution MRFs Linked by Super-coupling Transform", *Computer Vision and Image Understanding*, Elsevier, special issue on graph-based representations in computer vision, vol. 115, issue 7, pp. 1073-1083, Jul. 2011.

J3. Arashloo, S.R. and Kittler, J., "Fast Pose Invariant Face Recognition Using Supercoupled Multi-resolution Markov Random Fields on a GPU", *Pattern Recognition Letters*, Elsevier, special issue on celebrating the life and work of Maria Petrou, vol. 48, pp. 49-59, Oct. 2014.

J4. Arashloo, S.R. and Kittler, J., "Dynamic Texture Recognition Using Binarised Statistical Image Features", *Multimedia, IEEE Transactions on*, vol.16, no.8, pp. 2099-2109, Dec. 2014.

J5. Arashloo, S.R. and Kittler, J., "Class-Specific Kernel Fusion of Multiple Descriptors for Face Verification Using Multiscale Binarised Statistical Image Features", *Information Forensics and Security, IEEE Transactions on*, special issue on facial biometrics in the wild, vol.9, no.12, pp. 2100-2109, Dec. 2014.

J6. Arashloo, S.R., Kittler, J. and Christmas, W., "Face Spoofing Detection Based on Multiple Descriptor Fusion Using Dynamic Multiscale Binarized Statis-

tical Image Features”, *Information Forensics and Security, IEEE Transactions on*, vol. 10, no. 11, pp. 2396-2407, Nov. 2015.

J7. Arashloo, S.R., ”Multiscale Binarised Statistical Image Features for Symmetric Face Matching Using Multiple Descriptor Fusion Based on Class-Specific LDA”, *Pattern Analysis and Applications*, Springer, pp. 1-14, May 2015.

J8. Hamidi H., Chehel Amirani M. and Arashloo, S.R., ”Local Selected Features of Dual-Tree Complex Wavelet Transform for Single Sample Face Recognition”, *Image Processing, IET*, vol.9, no.8, pp. 716-723, Aug. 2015.

J9. Arashloo, S.R., ”Incorporating Point Distribution Model Priors into M-RFs Using Convex Quadratic Programming”, *Machine Vision and Applications*, Springer, vol. 27, no. 6, pp. 821-832, Aug. 2016.

J10. Arashloo, S.R., ”A Comparison of Deep Multilayer Networks and MRF Matching Models for Face Recognition in the Wild”, *Computer Vision, IET*, vol. 10, no. 6, pp. 466-474, Sep. 2016.

J11. Amirolad, A., Arashloo, S.R. and Amirani, M.Ch., ”Multi-layer Local Energy Patterns for Texture Representation and Classification”, *The Visual Computer*, Springer, Vol. 32, Issue 12, pp. 1633-1644, Dec. 2016.

J12. Arashloo, S.R., Amirani, M.Ch. and Noroozi, A., ”Dynamic Texture Representation Using a Deep Multi-Scale Convolutional Network”, *Visual Communication and Image Representation*, Elsevier, vol. 43, pp. 89-97, Feb. 2017

J13. Arashloo, S.R. and Kittler, J., ”An Anomaly Detection Approach to Face Spoofing Detection: A New Formulation and Evaluation Protocol”, *IEEE Access*, pp. 13868-13882, Jul. 2017.

J14. Arashloo, S.R. and Kittler, J., ”Sparse Binarised Statistical Dynamic Features for Spatio-temporal Texture Classification”, *Computer Vision and Image Understanding*, Elsevier, under review, 2018.

J15. Arashloo, S.R. and Kittler, J., ”Class-Specific Anomaly Detection for Face Presentation Attack Detection”, *Information Forensics and Security, IEEE Transactions on*, under review, 2018.

J16. Seyfollahzadeh, H., Arashloo, S.R. and Chehel Amirani, M., ”Transfer Learning of Deep Convolutional Models for Histopathological Image Classification”, *Measurement*, Elsevier, under review 2018.

J17. Seyfollahzadeh, H., Arashloo, S.R. and Chehel Amirani, M., ”Deep Convolutional Models for Histopathological Image Classification: A Transfer Learning Approach”, *IEEE Signal Processing Letters*, under review 2018.

J18. Arashloo, S.R. and Kittler, J., ”On the Vulnerability of Client-Specific One-Class Face Recognition Systems to Presentation Attacks”, *Information Forensics and Security, IEEE Transactions on*, in preparation, 2018.

J19. Arashloo, S.R. and Kittler, J., ”Fast class-specific kernel discriminant analysis for one-shot learning”, *Pattern Recognition*, Elsevier, in preparation, 2018.

BOOKS

B1. Arashloo, S.R., Unconstrained-Pose 2D Face Recognition, *LAP publishing*, 2015, 156 pages, ISBN: 978-3-659-75936-9.

CONFERENCE
PROCEEDINGS

C1. Arashloo, S.R. and Kittler, J., "An Anomaly Detection Approach to Face Spoofing Detection", *IJCB*, 2017, Denver, Colorado, USA.

C2. Seyfollahzadeh, H., **Arashloo, S.R.** and Chehel Amirani, M., "Transfer Learning of Deep Nets for Histopathological Image Classification", *International Conference on New Perspectives in Electrical and Computer Engineering*, 2016, Tehran, Iran.

C3. Arashloo, S.R., "Multiscale Binarised Statistical Image Features for Symmetric Unconstrained Face Matching", *Electrical Engineering (ICEE), 22nd Iranian Conference on*, pp. 1377-1382, 2014, Tehran, Iran.

C4. Arashloo, S.R. and Kittler, J. "Efficient Processing of MRFs for Unconstrained-Pose Face Recognition", *Biometrics: Theory, Applications and Systems (BTAS), 2013 IEEE Sixth International Conference on*, pp. 1-8, 2013, Washington DC, USA.

C5. Arashloo, S.R. and Kittler, J. "Facial Feature Localization Using Graph Matching with Higher Order Statistical Shape Priors and Global Optimization", *Biometrics: Theory Applications and Systems (BTAS), 2010 Fourth IEEE International Conference on*, pp. 1-8, 2010, Washington DC, USA.

C6. Arashloo, S.R. and Kittler, J. "Pose-Invariant Face Matching Using MRF Energy Minimization Framework", *Energy Minimization Methods in Computer Vision and Pattern Recognition, Lecture Notes in Computer Science, Springer*, pp. 56-69, 2009, Bonn, Germany.

C7. Arashloo, S.R. and Kittler, J., "Hierarchical Image Matching for Pose-Invariant Face Recognition", *British Machine Vision Conference, BMVA*, pp. 1-11, 2009, London, UK.

C8. Arashloo, S.R. and Ahmadyfard, A., "Fine Estimation of Blur Parameters for Image Restoration", *Digital Signal Processing, 2007 15th IEEE International Conference on*, pp. 427-430, 2007, Cardiff, Wales, UK.

C9. Arashloo, S.R., Marvi, H. and Ahmadyfard, A., "Temporal and Frequency Domain Features for Personal Identification Based on Gait Recognition", *First Joint Congress on Intelligent and Fuzzy Systems, Iranian Fuzzy Systems Society (IFSS) and Intelligent Systems Scientific Society of Iran (ISSSI)*, 2007, Mashhad, Iran.

PATENTS

P1. Method for Unconstrained Face Recognition Based on Multi-resolution Image Matching via Parallel Processing of MRFs on a GPU, Iranian patent, patent no: 80485, issue date: 8-Sep-2013.

P2. Method for Biometric Authentication Based on Gait Recognition Using Adaptive Area Masks, Iranian patent, patent no: 78932, issue date: 10-Mar-2013.

P3. Method for Pose-Invariant Face Recognition by Matching Using Graphical Models, Iranian patent, patent no: 68179, issue date: 2-Jan-2011.

AWARDS AND
DISTINCTIONS

- Recipient of the Prestigious Iranian National Elite Foundation Research Grant (2011)
- British Machine Vision Association (BMVA) Sullivan Best Doctoral Thesis Award Candidate (2010)
- Recipient of PhD Scholarship Award at CVSSP, University of Surrey (2007-2010)

- Member of the "Intelligent Mouse Team", Ranked 1st. in the Nationwide Contest (2003)
- Ranked 577th among 350,000+ Participants in the Nationwide University Entrance Exam (1999)
- Studied at the Exceptional Talents School for Both Junior and Senior High School (1992-1999)

TEACHING EXPERIENCE

- Advanced Signal Processing (M.Sc.& B.Sc.) -Lab. Instructor (2009), @University of Surrey
- Digital Image Processing (M.Sc.) -Lecturer (2016, 2017) @Tarbiat Modares University
- Neural Networks (M.Sc.) -Lecturer (2015, 2017), @Tarbiat Modares University
- Linear and Non-linear Optimization (M.Sc.& Ph.D.) -Lecturer (2014), @Urmia University
- Digital Image Processing (M.Sc.& B.Sc.) -Lecturer (2015), @Urmia University
- Signals and Systems (B.Sc.) - Lecturer (2015, 2014, 2013), @Urmia University
- Numerical Methods (B.Sc.) - Lecturer (2012), @Urmia University
- Computer Architecture (B.Sc.) - Lecturer (2012, 2013), @Urmia University
- Electronic Circuits (B.Sc.) -Lecturer (2012), @Urmia University
- Digital Design (B.Sc.) - Lecturer (2012, 2013), @Urmia University

PROFESSIONAL ACTIVITIES

- Member of the Iranian Society of Machine Vision and Image Processing (ISMVIP)
- Member of the organizing committee and multimedia track chair for the international conference on Information and Knowledge Technology, 2015 (IKT 2015)
- Publications chair for the International Conference on Information and Knowledge Technology, 2015 (IKT 2015)
- Served as a Reviewer for:
 - IEEE Transactions on Pattern Analysis and Machine Intelligence
 - IEEE Transactions on Information Forensics and Security
 - IEEE Transactions on Image Processing
 - IEEE Transactions on Multimedia
 - IEEE Access
 - Pattern Recognition
 - IET Computer Vision
 - IET Biometrics
 - Journal of Real-Time Image Processing
 - IEEE Canadian Journal of Electrical and Computer Engineering
 - Iranian Journal of Electronics Industries
 - Journal of Artificial Intelligence and Data Mining
 - ICEE 2014
 - IKT 2015
 - ICSPIS 2017

STUDENT ADVISING

Completed:

- H. Hamidi, "Local Features of Dual-Tree Complex Wavelet Transform for Single Sample Face Identification", 2012-2013, Master thesis, co-adviser.
- H. Ghaffary, "Class-Specific Linear Discriminant Transformation for Face Verification Using Regional Multi-scale Local Binary Pattern Histograms", 2012-2013, Master thesis, co-adviser.
- F. Nasiri, "An Efficient Method for Improved Copy-Move Forgery Detection", 2012-2013, Master thesis, co-adviser.
- A. Amirolad, "Multi-layer Local Energy Patterns for Texture Representation and

- Classification”, 2014-2015, Master thesis, co-advisor.
- A. Noroozi, ”Multiscale Deep PCA network for Texture Categorization”, 2014-present, master thesis, co-advisor.
- H. Seyfollahzadeh, Histopathological Image Classification Using Deep Convolutional Networks, Master thesis, 2015-present, co-advisor.
- N. Osmani, Fusion of Deep Convolutional Features for Histopathological Image Classification, Master thesis, 2016-present, adviser.

Ongoing:

- R. Fooladvand, Nurse Scheduling by Taking into Account Individual Preferences for Working/Not Working Together, 2017-present, Master thesis, adviser.
- F.D. Semnani, A BCI System Based on Non-Invasive EEG Signal Analysis for Subjects with Movement Disabilities Using Deep Neural Networks, 2017-present, Master thesis, adviser.
- S. Abdolmaleki, Classification of Alzheimers Disease’s MRI Data Using Convolutional Networks, 2017-present, Master thesis, adviser.

TECHNICAL SKILLS

- Experience with Nvidia DIGITS
- Experience with CUDA C
- Experience with OpenCV
- Experience with C, C++
- Matlab : vision, statistics, optimization and related toolboxes
- Computer Applications: TEX (LATEX, BibTEX, PSTricks), most common productivity packages (for Windows and Linux Packages)
- Operating Systems: Microsoft Windows family, Linux and UNIX variants

LANGUAGE SKILLS

- English
- Turkish
- Azeri
- Persian