

Curriculum Vitae

Personal Information

First name : Abdolhossein
Last name : Fathi
Date of birth : March 21, 1978
Place of birth : Delfan, IRAN
Marital status : Married
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Education

Ph.D. : Sep. 2007 – Sep. 2012
University : **University of Isfahan**
Major : Computer Engineering
Field : Computer System Architecture
Thesis : Automatic Blood Vessels Extraction and Their Features Measurement in Retinal Images.

M.Sc. : Sep. 2001 – Des. 2003
University : **Sharif University of Technology**
Major : Computer Engineering
Field : Computer Architecture
Thesis : Person's awakeness Detection Using Eye Status.

B.Sc. : Sep 1997 - Sep 2001
University : **Iran University of Science and Technology**
Major : Computer Engineering
Field : Computer Architecture
Thesis : Network Simulation Using NS Tool.

Research Interests

1. Image and Video Processing
2. Pattern Recognition
3. Face and Facial Expression Detection
4. Medical Image Analysis
5. Noise Removal Algorithms (Denoising)
6. Fault Tolerant Computing
7. HDLs Hardware Modeling (VHDL)
8. Biometric Analysis
9. Data Compression

Publications

Books:

1. Fathi A. and Abdali-Mohammadi F., "Web Programming", Aflak, 2006 (in Persian).
2. Abdali-Mohammadi F., Fathi A. and Farhadnia Y., "Socket Programming in TCP/IP Networks", Aflak, 2006 (in Persian).

Journal Papers:

1. Majeed Q., **Fathi A.**, "Fusing different color-space channels in a single-layer image for presentation attack detection," *Multimedia Tools and Applications*, 1-20, 2025.
2. Shafiee S., **Fathi A.**, Taherzadeh G., "Protein-peptide interaction region residues prediction using a generative sampling technique and ensemble deep learning-based models," *Applied Soft Computing*, 113603, 2025.
3. Beigzadeh N., **Fathi A.**, "Employing Deep learning-based model on printed image of ECG signals for Cardiovascular Disease Detection," *Journal of Machine Vision and Image Processing* 11 (3), 29-43, 2025.
4. **Fathi A.**, Moradi B., Zarei I., Shirbandi A., "Deep learning based System for automatic motorcycle license plates detection and recognition," *Signal, Image and Video Processing* 18 (12), 8869-8879, 2024.
5. Shafiee S., **Fathi A.**, Taherzadeh G., "DP-site: A dual deep learning-based method for protein-peptide interaction site prediction," *Methods* 229, 17-29, 2024.
6. Absetan A., **Fathi A.**, "Integration of local and global features for image retargeting quality assessment," *Signal, Image and Video Processing* 18 (4), 3577-3586, 2024.
7. Naghshbandi T., **Fathi A.**, "Diagnosing of Skin Lesions Using Deep Convolutional Neural Network and Support Vector Machines," *Computer and Knowledge Engineering* 7 (1), 37-48, 2024.
8. Absetan A., **Fathi A.**, "Quality assessment of retargeted images using deep learning capabilities," *Computers & Graphics* 120, 103914, 2024.
9. Ebrahim Ghajari N., **Fathi A.**, "Detection and Classification of Lung Cancer in Histopathology Images Using Deep Learning," *Journal of Computing and Security* 11 (1), 19-28, 2024.
10. Absetan A., **Fathi A.**, "Integration of deep learned and handcrafted features for image retargeting quality assessment," *Cybernetics and Systems* 54 (5), 673-696, 2023.
11. Dalvand M., **Fathi A.**, Kamran A., "Spiking Neural P System with weight model of majority voting technique for reliable interactive image segmentation," *Neural Computing and Applications* 35 (12), 9035-9051, 2023.
12. Majeed Q., **Fathi A.**, "A novel method to enhance color spatial feature extraction using evolutionary time-frequency decomposition for presentation-attack detection," *Journal of Ambient Intelligence and Humanized Computing* 14 (4), 3853-3865, 2023.
13. Hosseini S., **Fathi A.**, "Automatic detection of vehicle occupancy and driver's seat belt status using deep learning," *Signal, Image and Video Processing* 17 (2), 491-499, 2023.
14. Shafiee S., **Fathi A.**, Taherzadeh G., "SPPPred: sequence-based protein-peptide binding residue prediction using genetic programming and ensemble learning," *IEEE/ACM Transactions on Computational Biology and Bioinformatics* 20 (3), 2029-2040, 2022.

15. Molavi Vardanjani S., **Fathi A.**, Moradkhani K., "Grsnet: Gated residual supervision network for pixel-wise building segmentation in remote sensing imagery," *International Journal of Remote Sensing* 43 (13), 4872-4887, 2022.
16. Moradkhani K., **Fathi A.**, "Segmentation of waterbodies in remote sensing images using deep stacked ensemble model," *Applied Soft Computing* 124, 109038, 2022.
17. Salehnia T., **Fathi A.**, "Fault tolerance in LWT-SVD based image watermarking systems using three module redundancy technique," *Expert Systems with Applications* 179, 115058, 2021.
18. Danaee S., **Fathi A.**, "Person Identification using Local and Structural Features of Retina Vessels," *Journal of Machine Vision and Image Processing* 7 (2), 149-159, 2021.
19. Shafiee S., **Fathi A.**, "Combination of genetic programming and support vector machine-based prediction of protein-peptide binding sites with sequence and structure-based features," *Journal of Computing and Security* 8 (1), 45-63, 2021.
20. Sajadi S., **Fathi A.**, "Genetic algorithm based local and global spectral features extraction for ear recognition," *Expert Systems with Applications* vol. 159, 113639, 2020.
21. Dalvand M., **Fathi A.**, Kamran A., "Flooding region growing: a new parallel image segmentation model based on membrane computing," *Journal of Real-Time Image Processing*, 1-19, 2020.
22. Valikhani S., Abdali-Mohammadi F., **Fathi A.**, "Online continuous multi-stroke Persian/Arabic character recognition by novel spatio-temporal features for digitizer pen devices," *Neural Computing and Applications* vol. 32, no. 8, p.p. 3853-3872, 2020.
23. Salimi L., Haghghi A., Fathi A., "A novel watermarking method based on differential evolutionary algorithm and wavelet transform," *Multimedia Tools and Applications*, 1-18, 2020.
24. Albasri A., Abdali-Mohammadi F., **Fathi A.**, "ELECTROENCEPHALOGRAPHY FEATURE ENHANCEMENT BASED ON ELECTRODE ACTIVITY RATIO FOR IDENTIFICATION," *Journal of Mechanics in Medicine and Biology* vol. 20, no. 4, 2050011, 2020.
25. **Fathi A.** and Mohamadi M., "Metric-learning-based high-discriminative local features extraction for iris recognition," *PATTERN ANALYSIS AND APPLICATIONS*, vol. 22, p.p. 1427-1438, 2019.
26. Yousofvand L., **Fathi A.**, Abdali-Mohammadi F., "Person identification using ECG signal's symbolic representation and dynamic time warping adaptation," *Signal, Image and Video Processing*, vol. 13, no. 2, p.p. 245-251, 2019.
27. Albasri A., Abdali-Mohammadi F., **Fathi A.**, "EEG electrode selection for person identification thru a genetic-algorithm method," *Journal of medical systems*, vol. 43, no. 9, p.p. 1-12, 2019.
28. **Fathi A.** and Sadeghi R., "A Genetic Programming Method for Feature Mapping to Improve Prediction of HIV-1 Protease Cleavage Site," *Applied Soft Computing*, vol. 72, p.p. 56-64, 2018.
29. Alirezazadeh P., Hejrati B., Monsef-Esfehani A. and **Fathi A.**, "Representation Learning-Based Unsupervised Domain Adaptation for Classification of Breast Cancer Histopathology Images," *Biocybernetics and Biomedical Engineering*, vol. 38, p.p. 671-683, 2018.
30. Hejrati B., **Fathi A.** and Abdali-Mohammadi F., "A New Near-Lossless EEG Compression Method using ANN-Based Reconstruction Technique," *Computers in Biology and Medicine*, vol. 87, p.p. 87-94, 2017.

31. Hejrati B., **Fathi A.** and Abdali-Mohammadi F., "Efficient lossless multi-channel EEG compression based on channel clustering," *Biomedical Signal Processing and Control*, vol. 31, pp. 295–300, 2017.
32. **Fathi A.** and Faraji-Kheirabadi F., "ECG compression method based on adaptive quantization of main wavelet packet subbands," *Signal, Image and video Processing*, vol. 10, pp. 1433- 1440, 2016
33. **Fathi A.**, Alirezazadeh P. and Abdali-Mohammadi F., "A New Global-Gabor-Zernike Feature Descriptor and its Application to Face Recognition," *Journal of Visual Communication and Image Representation*, vol. 38, pp. 65- 72, 2016.
34. Alirezazadeh P., **Fathi A.** and Abdali-Mohammadi F., " A Genetic Algorithm-Based Feature Selection for Kinship Verification," *IEEE SIGNAL PROCESSING LETTERS*, vol. 22, no. 12, pp. 2459- 2463, 2015.
35. **Fathi A.** and Abdali-Mohammadi F., " Improving face recognition systems security using local binary patterns," *Journal of Computing and Security*, vol. 2, no. 1, pp. 55- 62, 2015.
36. Abdali-Mohammadi F., Bajelan V. and **Fathi A.** " Toward a Fault Tolerant Architecture for Vital Medical-Based Wearable Computing," *Journal of Medical Systems*, DOI 10.1007/s10916-015-0347-7, 2015.
37. **Fathi A.** and Abdali-Mohammadi F., "Camera-based eye blinks pattern detection for intelligent mouse," *Signal, Image and video Processing*, DOI 10.1007/s11760-014-0680-1, 2015.
38. **Fathi A.** and Abdali-Mohammadi F., "Fuzzy Expert Ants to speed up big TSP Problems using ACS," *Computer Engineering and Applications*, vol.3 , no. 3, pp. 131-138, 2014.
39. Salehi M., **Fathi A.** and Abdali-Mohammadi F., "ANTSREC: A Semantic Recommender System Based on Ant Colony Meta-Heuristic in Electronic Commerce," *International Journal of Advanced Science and Technology*, vol. 56, p.p.119-130, 2013.
40. **Fathi A.** and Naghsh-Nilchi A.R., "General Rotation-Invariant Local Binary Patterns Operator with Application to Blood Vessel Detection in Retinal Images," *Patt. Anal. App.*, vol. 17, p.p. 69-81, 2014.
41. **Fathi A.** and Naghsh-Nilchi A.R., "Automatic Wavelet-Based Retinal Blood Vessels Segmentation and Vessel Diameter Estimation," *Biomedical Signal Processing and Control*, vol. 8, p.p. 71– 80, 2013.
42. **Fathi A.**, Naghsh-Nilchi A.R. and Abdali-Mohammadi F., "Automatic vessel network features quantification using local vessel pattern operator," *Computers in Biology and Medicine*, vol. 43, p.p. 587–593, 2013.
43. **Fathi A.** and Naghsh-Nilchi A.R., "Integrating Adaptive Neuro-Fuzzy Inference System and Local Binary Pattern Operator for Robust Retinal Blood Vessels Segmentation," *Neur. Compu. App.*, vol. 22, p.p. S163-S174, 2013.
44. **Fathi A.** and Naghsh-Nilchi A.R., "Efficient Image Denoising Method Based on a New Adaptive Wavelet Packet Thresholding Function," *IEEE Trans. Imag. Proc.*, vol. 21, no. 9, p.p. 3981-3990, 2012.
45. **Fathi A.** and Naghsh-Nilchi A.R., "Noise tolerant local binary pattern operator for efficient texture analysis," *Patt. Rec. Lett.*, vol. 33, p.p. 1093–1100, 2012.

Conference Papers:

1. Shafiee S., **Fathi A.**, Safari F., "Integrating Structural Information: Comparing Classification-Based and Segmentation-Based Predictors in Bioinformatics (Case Study: Protein-Peptide Region Residue-Level Interaction) Using Structural Information," 2025 29th International Computer Conference, Computer Society of Iran (CSICC), 1-7, 2025.
2. Shafiee S., **Fathi A.**, "Leveraging a Structure-Based and Learning-Based Predictor Using Various Feature Groups in Bioinformatics (Case Study: Protein-Peptide Region Residue-Level Interaction)," 14th International Conference on Computer and Knowledge Engineering (ICCKE), 391-397, 2024.
3. Shafiee S., **Fathi A.**, "Prediction of protein-peptide-binding amino acid residues regions using machine learning algorithms," 26th International Computer Conference, Computer Society of Iran (CSICC), 1-6, 2021,
4. Shafiee S., **Fathi A.**, Abdali- Mohammadi F., "Prediction of protein-peptide binding residues using classification algorithms," 2020 IEEE 20th International Conference on Bioinformatics and Bioengineering (BIBE), Cincinnati, OH, USA, p.p.29-34, 2020.
5. Poostashkan F., **Fathi A.** and Abdali-Mohammadi F., "Design and Implementation of Bloom Filter on FPGA", National Conference on Computer Engineering and Information Technology Management, Tehran, Iran, may 2014 (in Persian).
6. Rashidpoor F., Abdali-Mohammadi F. and **Fathi A.**, "Review of Fall Detection methods that used Body Sensors", National Conference on Computer Engineering and Information Technology Management, Tehran, Iran, may 2014 (in Persian).
7. Niazi N. Abdali-Mohammadi F. and **Fathi A.**, "A new Method for Similar Web Document Detection", National Conference on Computer Engineering and Information Technology Management, Tehran, Iran, may 2014 (in Persian).
8. Salehi M., **Fathi A.**, and Abdali-Mohammadi F., "Automatic Optic Disk Detection in retinal Images", National Conference on Computer Engineering and Information Technology Management, Tehran, Iran, may 2014 (in Persian).
9. Moradi-MohammadAbadi M., Javadi H.H.S., **Fathi A.**, and Hashemi S.M., "Design a Model for Increasing Reliability of Service Oriented Architecture", 2nd National Conference on Computer, Sanandej, Iran, Nov. 2013 (in Persian).
10. **Fathi A.**, Monadjemi S.A. and Naghsh-Nilchi A.R., " Eye Detection and its Open or Close State Detection in Video Streams", 5th Iranian Conference on Machine Vision and Image Processing, p.p.221-227, Tabriz, Iran, Nov. 2008 (in Persian).
11. Abdali-Mohammadi F., Nematbakhsh N., and **Fathi A.**, "Distributing of ACS Algorithm using Delayed Ferment Updating Method for Parallel Implementation", 16th Iranian Conference on Electrical Engineering, p.p.116-121, Tehran, Iran, May 2008 (in Persian).
12. **Fathi A.** and Abdali-Mohammadi F., "Design and implementation of Square/Square Root Circuit on FPGA", 5th Iranian Conference on Basic Sciences, p.p.58-65, Ghaem-Shahr, Iran, Nov. 2006 (in Persian).
13. Farhadnia Y., Abdali-Mohammadi F., and **Fathi A.**, "Optimizing ACS Algorithm by Modifying Ferment Updating Method", 5th Iranian Conference on Basic Sciences, p.p.230-236, Ghaem-Shahr, Iran, Nov. 2006 (in Persian).
14. **Fathi A.**, Abdali-Mohammadi F. and Manzuri M.T., "The Eyelids Distance Detection in Gray Scale Images", International Symposium on Communications and Information Technologies (ISCIT2006), p.p. 937 – 940, Bangkok, Thailand, Oct. 2006.
15. Abdali-Mohammadi F., **Fathi A.** and Manzuri M.T., "Optimising ACS for Big TSP Problems Distributing Ant", International Symposium on Communications and Information Technologies (ISCIT2006), p.p. 839 – 842, Bangkok, Thailand, Oct. 2006.
16. Almasi S.N., **Fathi A.** and Pazoki A., "Software Framework for Engineering Categorization of Rocks (FAPRock)", 5th Iranian Conference on Mine Engineering, Lahijan, Iran, Jul. 2006 (in Persian).
17. **Fathi A.** and Manzuri M.T., "Eye Detection and Tracking in Video Streams", International Symposium on Communications and Information Technologies (ISCIT04), Vol.2, p.p. 1258 – 1261, Japan, Oct. 2004.
18. **Fathi A.** and Manzuri M.T., "Person Awakness Detection using Eye Status", 9th Iranian Conference on Computer Engineering, Tehran, Iran, Feb. 2003 (in Persian).

Awards

1. **The Best Researcher** of Faculty of Computer Engineering, Razi University, **2021**.
2. **The Best Researcher** of Faculty of Computer Engineering, Razi University, **2016**.
3. **The Best PhD graduate** of Faculty of Computer Engineering, Isfahan University, **2014**.
4. **The Best MSc graduate** of Computer Architecture, Sharif University, **2003**.
5. **The Best Student** of Hardware Engineering, Iran University of Science & Technology, **2001**.

Academic Experience

1. Associate Professor: Department of Computer Engineering, Razi University, Kermanshah, Iran, July 2018 - present.
2. Head of Computer Engineering Department, Razi University, Kermanshah, Iran, July. 2015 – May 2018.
3. Assistant Professor: Department of Computer Engineering, Razi University, Kermanshah, Iran, Sep. 2012 – July 2018.
4. Lecturer: Department of Computer Engineering, Lorestan University, Lorestan, Iran, Sep. 2004 – Sep. 2007.

Teaching Interests and Experiences

My teaching interests are:

1. Postgraduate Courses
 - 1.1 Machine Vision
 - 1.2. Pattern Recognition
 - 1.3. Data Compression
 - 1.4. Digital Image Processing
 - 1.5. HDLs Hardware Modeling (VHDL)
2. Undergraduate Courses
 - 2.1. Logic Circuits
 - 2.2. Computer Architecture
 - 2.3. Electrical Circuits