Curriculum Vitae

NAME & SURNAME: Gholamreza Akbarizadeh

DATE OF BIRTH: 1981

ADDRESS, SUBURB, STATE, POSTAL CODE: Department of Electrical Engineering, Faculty of Engineering, Shahid Chamran University of Ahvaz, Ahvaz, Iran & Postal code: 61357-83151

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PROFESSIONAL PROFILE:

Associate Professor of Electronic Engineering in Shahid Chamran University of Ahvaz, Iran (From 2011 up to now).

- Orcid Page: https://orcid.org/ 0000-0003-0396-5601
- Google Scholar Page: https://scholar.google.com/citations?user=69gth38AAAAJ&hl=en&oi=ao
- Researchgate Page: https://www.researchgate.net/profile/Gholamreza-Akbarizadeh
- Web of Science Researcher ID: AAH-2696-2020
- Scopus ID: 57210789932

JOURNALS REFREE:

- IEEE Transactions on Geoscience & Remote Sensing, Published by IEEE, 445 HOES LANE, PISCATAWAY, USA. ISSN: 1558-0644. Website: https://ieeexplore.ieee.org/xpl/aboutJournal.jsp?punumber=36
- IEEE Transactions on Image Processing, Published by IEEE, 445 HOES LANE, PISCATAWAY, USA. ISSN: 1057-7149 . Website: https://ieeexplore.ieee.org/xpl/aboutJournal.jsp?punumber=83
- IEEE Transactions on Aerospace & Electronic Systems, Published by IEEE, 445 HOES LANE, PISCATAWAY, USA. ISSN: 1557-9603. Website: https://ieeexplore.ieee.org/xpl/aboutJournal.jsp?punumber=7
- IEEE Transactions on Industrial Informatics, Published by IEEE, 445 HOES LANE, PISCATAWAY, USA. ISSN: 1941-0050. Website: https://ieeexplore.ieee.org/xpl/aboutJournal.jsp?punumber=9424

Curriculum Vitae

EDUCATION BACKGROUND:

Ph.D.: Electronic Engineering, Iran University of Science and Technology, Tehran, Iran (2006-2011).

Thesis title:

Segmentation of SAR Satellite Images using Higher Order Statistics

M.Sc.: Electronic Engineering, Iran University of Science and Technology, Tehran, Iran (2003-2005).

Dissertation title:

Design, Simulation, and Improving a CMOS Readout Circuit in Infrared Imaging Systems

B.S.: Electronic Engineering, Khajeh Nassir Toosi University of Technology, Tehran, Iran (1999-2003).

Final Project Title:

Design and Manufacture of All-Purpose Controller System Hardware with 80C196 Microcontroller

TEACHING AND TRAINING EXPERINCE:

Undergraduate Courses:

- Electronic 1
- Electronic 2
- Electronic 3
- Radar Data Processing
- Optical Image Processing

Graduate Courses:

- Image Processing
- Machine Vision
- Digital Signal Processing
- Microwave and Radar Images
- Radar Microwave and Its Applications

HONOURS AND AWARDS:

- Being in the list of the top 2% of scientists in the world based on the number of citations to research activities in 2019.
- Top researcher of Shahid Chamran University of Ahvaz in 2017.

- Top researcher of Shahid Chamran University of Ahvaz in 2019.
- Top researcher of Shahid Chamran University of Ahvaz in 2020.
- Top researcher of Khuzestan province in 2020.
- Supervisor of the best Master's thesis in the country in 2017.
- Project manager of the best project plan in the country's electricity distribution companies in 2020.
- Top PhD student in Electronic Engineering at Iran University of Science and Technology with a grade point average of 18.05 out of 20 (2011).

INTERESTS AND RESEARCH FIELDS:

- Image Processing
- Machine Vision
- SAR Satellite Imaging Systems and Remote Sensing
- Machine Learning and Deep Learning

RESEARCH ACTIVITIES:

PUBLICATIONS:

[1] N. Davari, G. Akbarizadeh, and E. Mashhour, "Intelligent diagnosis of incipient fault in power distribution lines based on corona detection in uv-visible videos," *IEEE Transactions on Power Delivery*, In press., DOI: 10.1109/TPWRD.2020.3046161, 21 Dec. 2021.

[2] Z. Tirandaz and G. Akbarizadeh, H. Kaabi, "PolSAR image segmentation based on feature extraction and data compression using Weighted Neighborhood Filter Bank and Hidden Markov random field-expectation maximization," *Measurement*, vol. 153, no. 107432, pp. 1-15, March 2020, DOI: https://doi.org/10.1016/j.measurement.2019.107432.

[3] M. Modava, G. Akbarizadeh, and M. Soroosh, "Integration of spectral histogram and level set for coastline detection in SAR images," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 55, no. 2, pp. 810-819, April 2019.

[4] A. Raeisi, G. Akbarizadeh, and A. Mahmoudi, "Combined Method of an Efficient Cuckoo Search Algorithm and Nonnegative Matrix Factorization of Different Zernike Moment Features for Discrimination Between Oil Spills and Lookalikes in SAR Images," *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, vol. 11, no. 11, pp. 4193-4205, Nov. 2018.

[5] F. Taibi, G. Akbarizadeh, and E. Farshidi, "Robust reservoir rock fracture recognition based on a new sparse feature learning and data training method," *Multidimensional Systems and Signal Processing*, pp. 1–34, April 2019.

[6] A. E. Moghaddam, G. Akbarizadeh, and H. Kaabi, "Automatic detection and segmentation of blood vessels and pulmonary nodules based on a line tracking method and

generalized linear regression model," *Signal, Image and Video Processing*, vol. 13, no. 3, pp. 457–464, April 2019.

[7] F. Samadi, G. Akbarizadeh, and H. Kaabi, "Change Detection in SAR Images using Deep Belief Network: a New Training Approach based on Morphological Images," *IET Image Processing*, 2019, DOI:10.1049/iet-ipr.2018.6248.

[8] N. Ahmadi, and G. Akbarizadeh, "Iris tissue recognition based on GLDM feature extraction and hybrid MLPNN-ICA classifier," *Neural Computing and Applications*, vol. 32, no. 7, pp. 2267- 2281, April 2020, DOI:10.1007/s00521-018-3754-0.

[9] M. Modava, G. Akbarizadeh, and M. Soroosh, "A Novel Hierarchical Coastline Detection in SAR Images Based on Spectral-Textural Features and Global-Local Information," *IET Radar Sonar & Navigation*, vol. 13, no. 12, pp. 2183- 2195, August 2019, DOI:10.1049/iet-rsn.2019.0063.

[10] F. Sharifzadeh, G. Akbarizadeh, and Y. Seifi Kavian, "Ship Classification in SAR Images Using a New Hybrid CNN–MLP Classifier," *Journal of the Indian Society of Remote Sensing*, Vol. 47, No. 6, 2018, DOI:10.1007/s12524-018-0891-y.

[11] M. Norouzi, G. Akbarizadeh, and F. Eftekhar, "A hybrid feature extraction method for SAR image registration," *Signal, Image and Video Processing*, vol. 12, no. 8, pp. 1559–1566, November 2018.

[12] M. Farbod, G. Akbarizadeh, A. Kosarian, and K. Rangzan,"Optimized fuzzy cellular automata for synthetic aperture radar image edge detection," *Journal of Electronic Imaging*, vol. 27, no. 1, pp. 013030-1: 013030-11, February 2017.

[13] N. Ahmadi, and G. Akbarizadeh, "A Hybrid Robust Iris Recognition Approach Using Iris Image Preprocessing, 2D Gabor Features and MLPNN/PSO," *IET Biometrics*, vol. 7, No. 2, pp. 153-162, 2018.

[14] D. Karimi, G. Akbarizadeh, K. Rangzan, and M. Kabolizadeh, "Effective Supervised Multiple-Feature Learning for Fused Radar and Optical Data Classification," *IET Radar, Sonar & Navigation*, vol. 11, no. 5, pp. 768-777, 2017.

[15] M. Modava and G. Akbarizadeh, "Coastline Extraction from SAR Images using Spatial Fuzzy Clustering and the Active Contour Method," *International Journal of Remote Sensing*, vol. 38, no. 2, pp. 355-370, 2017.

[16] D. Karimi, K. Rangzan, G. Akbarizadeh, and M. Kabolizadeh,"Combined algorithm for improvement of fused radar and optical data classification accuracy," *Journal of Electronic Imaging*, vol. 26, no. 1, pp. 1-10, 2017.

[17] H. Ramezani, H. ZakiDizaji, H. Masoudi, and G. Akbarizadeh, "A new DSWTS algorithm for real-time pedestrian detection in autonomous agricultural tractors as a computer vision system," *Measurement*, vol. 93, pp. 126-134, July 2016.

[18] Z. Tirandaz and G. Akbarizadeh, "A Two Phase Algorithm Based on Kurtosis Curvelet Energy and Unsupervised Spectral Regression for Segmentation of SAR Images," IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing

(IEEE J-STARS), In press., accepted for publication in October 2015.

[19] M. Rahmani and G. Akbarizadeh, "Unsupervised Feature Learning Based on Sparse Coding and Spectral Clustering for Segmentation of SAR Images," IET Computer Vision, vol. 9, no. 5, pp. 629-638, October 2015.

[20] Z. Tirandaz and G. Akbarizadeh, "Unsupervised Texture-Based SAR Image Segmentation Using Spectral Regression and Gabor Filter Bank," Journal of the Indian Society of Remote Sensing, Springer, vol. 44, no. 2, pp. 177-186, August 2016.

[21] G. Akbarizadeh, "A New Statistical-Based Kurtosis Wavelet Energy Feature for Texture Recognition of SAR Images," *IEEE Transactions on Geoscience and Remote Sensing*, Vol. 50, No. 11, pp. 4358-4368, November 2012.

[22] G. Akbarizadeh and A. E. Moghaddam, "Detection of Lung Nodules in CT-Scans Based on Unsupervised Feature Learning and Fuzzy Inference," Journal of Medical Imaging and Health Informatics, Vol. 6, No. 2, pp. 477-483, April 2016.

[23] G. Akbarizadeh, Z. Tirandaz, and M. Kooshesh, "A New Curvelet-Based Texture Classification Approach for Land Cover Recognition of SAR Satellite Images," Malaysian Journal of Computer Science, Vol. 27, No. 3, pp. 218-239, September 2014.

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[25] N. Ahmadi and G. Akbarizadeh, "A Review of Iris Recognition Based on Biometric Technologies," *Transylvanian Review*, Vol. XXIV, No. 4, pp. 151-163, December 2015.

[26] F. Cheraghi, M. Soroosh, and G. Akbarizadeh, "An ultra-compact all optical full adder based on nonlinear photonic crystal resonant cavities," *Superlattices and Microstructures*, Vol. 113, pp. 359-365, 2018.

[27] N. Raeisi, A. M. Meymand, and G. Akbarizadeh, "Scour Depth Prediction in Sand Beds using Artificial Neural Networks and ANFIS Methods," *Indian Journal of Science and Technology*, Vol. 8, No. 19, pp. 1-9, August 2015.

[28] G. Akbarizadeh, "A New Recognition Approach Based on Genetic Algourithm for Classifying Textures in Satellite SAR Images," *International Journal of Remote Sensing Applications*, Vol. 2, No. 4, pp. 7-19, December 2012.

[29] G. Akbarizadeh, "Segmentation of SAR Satellite Images Using Cellular Learning Automata and Adaptive Chains," *Journal of Remote Sensing Technology*, Vol. 1, No. 2, pp. 44-51, August 2013.

[30] G. Akbarizadeh, "A New Feature Extraction Method Using Genetic Optimization for Texture Recognition of Satellite Images," *Journal of Agricultural Engineering and Biotechnology*, Vol. 1, No. 3, pp. 68-73, November 2013.

[31] A. Barzegar, S. Hashemi, and G. Akbarizadeh, "Float-based Pipeline Monitoring Network," *International Journal of Computer Applications Technology and Research*, Vol.

3, No. 1, Dec. 2013.

[32] N. Ahmadi and G. Akbarizadeh, "Iris Recognition System based on Canny and LoG Edge Detection Methods," *Journal of Computing and Decision Support Systems*, Vol. 2, No. 4, pp. 26-30, July 2015.

[33] G. Akbarizadeh, G. Rezai-Rad, and Sh. B. Shokouhi, "A New Region-Based Active Contour Model with Skewness Wavelet Energy for Segmentation of SAR Images," *IEICE Transactions on Information and Systems*, Vol. E93-D, No. 7, pp. 1690-1699, July 2010.

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[35] G. Akbarizadeh, and G. Rezai-Rad, "A new Algorithm for Reconstruction of Scrambled Images with Cut and Rotate Method," *International Journal of Mathematical Methods and Models in Applied Science*, Vol. 10, No. 2, February 2008.

[36] A. Askarian, G. Akbarizadeh, and M. Fartash, "A novel proposal for all optical half-subtractor based on photonic crystals," *Optical and Quantum Electronics*, Vol. 51, No. 8, 2019, DOI:10.1007/s11082-019-1978-6.

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[40] N. Chegeni, M. J. Tahmasebi Birgani, F. Farhadi, D. Fatehi, G. Akbarizadeh, and M. Tahmasbi, "Introduction of a Simple Algorithm to Create Synthetic-computed Tomography of the Head from Magnetic Resonance Imaging," *Journal of Medical Signals & Sensors*, Vol. 9, No. 2, 2019, DOI:10.4103/jmss.JMSS_26_18.

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[42] H. Rashidizad, M. Sheikhi, and G. Akbarizadeh, "Efficient point cloud lossless data compression method based on an embedded Gray code structured light pattern sequence," *Applied Optics*, Vol. 57, No. 29, 2018, DOI:10.1364/AO.57.008766.

[43] N. Aghaei, G. Akbarizadeh and A. Kosarian, "GreyWolfLSM: an accurate oil spill detection method based on level set method from synthetic aperture radar imagery," *European Journal of Remote Sensing*, DOI: 10.1080/22797254.2022.2037468, Feb. 2022.

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[45] N. Davari, G. Akbarizadeh and E. Mashhour, "Corona Detection and Power Equipment Classification based on GoogleNet-AlexNet: An Accurate and Intelligent Defect Detection Model based on Deep Learning for Power Distribution Lines," *IEEE Transactions on Power Delivery*, In press., DOI: 10.1109/TPWRD.2021.3116489, September 2021.

[46] A. Askarian and G. Akbarizadeh, "A novel proposal for all optical 2 × 4 decoder based on photonic crystal and threshold switching method," *Optical and Quantum Electronics*, Vol. 84, No. 54**,** pp. 1-15, Jan. 2022, DOI: https://doi.org/10.1007/s11082-021-03443-4.

[47] N. Pirzad Mashak, G. Akbarizadeh, and E. Farshidi, "A new approach for data augmentation in a deep neural network to implement a monitoring system for detecting prostate cancer in MRI images," *Journal of Intelligent & Fuzzy Systems*, pp: 1-16, In press., DOI: 10.3233/JIFS-212990, March 2022.

CONFERENCE PRESENTATIONS:

[1] M. Kooshesh, and G. Akbarizadeh, "Despeckling Algorithm for Remote Sensing Synthetic Aperture Radar Images using Multi-scale Curvelet Transform", International Symposium on Artificial Intelligence and Signal Processing (AISP 2015), Ferdowsi University of Mashhad, March 3-5, 2015.

[2] A. Mirkazemi, S. E. Alavi, and G. Akbarizadeh, "Fast Image Segmentation Based on Adaptive Histogram Thresholding", International Symposium on Artificial Intelligence and Signal Processing (AISP 2015), Ferdowsi University of Mashhad, March 3-5, 2015.

[3] K. Jamalzadeh, and G. Akbarizadeh, " A new Evolutionary Neural Networks Training Algorithm for Image Compression ", 14th Iranian Conference on Fuzzy Systems, August 2014.

[4] E. Sobhanifar, G. Akbarizadeh, and K. Ansari-Asl, " SAR Image Segmentation Based on a New Clustering Algorithm ", 14th Iranian Conference on Fuzzy Systems, August 2014.

[5] M. Poodanchi, G. Akbarizadeh, E. Sobhanifar, and K. Ansari-Asl, " SAR Image Segmentation Using Morphological Thresholding", 6th Information and knowledge Conference, June 2014.

[6] G. Akbarizadeh, "A New Kurtosis Wavelet Energy for Segmentation of SAR Images," 2nd National Conference on Soft Computing and Information Technology (NCSCIT 2012), Islamic Azad University of Mah shahr, March 8, 2012.

[7] Gholamreza Akbarizadeh and Gholam Ali Rezai-Rad, "A New Cumulant-based Active Contour Model with Wavelet Energy for Segmentation of SAR Images," sixth Iranian Machine Vision & Image Processing Conference (MVIP 2011), University of Isfahan, Isfahan, October 27-28, 2010.

[8] Gholamreza Akbarizadeh, Gholamali Rezai Rad, and Mahmood Fathi, "A MAC Protocol to educe Sensor Network Power Consumption: Simulation of DMD Protocol," DCDIS Proceedings of the International Conference on Life System Modeling and Simulation (LSMS2007), Shanghai, China, pp 732-736, 2007.

[9] Gholamreza Akbarizadeh and Gholam ali Rezairad, "A New Algorithm to Reconstruction of Scrambled Images with Cut and Rotate Method," 3rd Inter national Conference on Computer Vision Theory and Applications (VISAPP2008), Funchal, Madeira, Portugal, 22-25 January 2008.

[10] Gholam Ali Rezai-Rad and Gholamreza Akbarizadeh, "A New Readout Circuit for Infrared Imaging Sensors," 3rd Inter national Conference on New Trends in Information and Service Science (NISS 2009), Beijing, China, June 30-July 2, 2009.

[11] Gholam Ali Rezai-Rad and Gholamreza Akbarizadeh, "A New Cumulant-based Active Contour Model with Wavelet Energy for Segmentation of SAR Images," 2nd Inter national Conference on Bioinformatics and Computational Biology (BICoB-2010), Honolulu, Hawaii, USA, March 24-26, 2010.

[12] Gholamreza Akbarizadeh and Gholam Ali Rezai-Rad, "A New Readout Circuit for Infrared Imaging Sensors," First IEEE Latin Americans Symposium on Circuits and Systems (LASCAS 2010), Lguacu Falls, Brazil, February 24-26, 2010.

RESEARCH PROJECTS:

1. Akbarizadeh, G., (2021), The main executor of the industrial demand project entitled “A software product based on image processing for evaluating the isolation of distribution lines”, between the Shahid Chamran University of Ahvaz and Khouzestan Electricity Power Distribution Company.
2. Akbarizadeh, G., (2015), The main executor of the industrial demand M.S. Thesis entitled “Extraction of geological features from gamma images and signals for MWD and LWD system optimization”, between the Shahid Chamran University of Ahvaz and National Iranian South Oil Company.
3. Akbarizadeh, G., (2017), The main executor of the industrial demand M.S. Thesis entitled “Interpret and evaluate the quality of cement bonding intelligently”, between the Shahid Chamran University of Ahvaz and National Iranian Drilling Company.
4. Akbarizadeh, G., (2017), The main executor of the industrial demand M.S. Thesis entitled “Detection and classification of types of reservoir rock fractures in imaging logs”, between the Shahid Chamran University of Ahvaz and National Iranian Drilling Company.

PROFESSIONAL MEMBERSHIPS:

- Member of Iranian Society of Machine Vision and Image Processing.

LANGUAGES:

PERSIAN: Native

ENGLISH: Good