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Yasser Baleghi (CV)

Associate Professor

Babol Noshirvani University of Technology

Education

- PhD , Sep. 2004-March 2010, [Iran University of science and Technology](#),
Electronics Engineering, Tehran, Iran.
Thesis Title: *Design & Simulation of Evolvable Hardware Modules with Emerging Communication Protocol*
Advisor: Dr. K.Mohammadi
- Master of Science, Sep.2002 - Sep. 2004, [Iran University of Science and Technology](#)
Electronics Engineering, Tehran, Iran
Thesis Title: *Speed Limit Traffic Sign Detection & Recognition*
Advisor: K.Mohammadi
- Bachelor of Science, Sep.1998 - Sep.2002, [Iran University of Science and Technology](#)
Electrical Engineering (Electronics), Tehran, Iran
Thesis Title: *Design & Implementation of a Touch Panel with IR Technology*
Advisor: K.Mohammadi

Publications (Only English Papers are Included)

- Most of my English papers can also be seen at my [Google Scholar Homepage](#).
- Journal Papers & Book Chapters:

1. Yasser Baleghi Damavandi, Karim Mohammadi “Co-evolution for Communication: An EHW Approach”,

- Journal of Universal Computer Science (JUICS), Springer, in Vol.13, Issue 9, 2007. (ISI Indexed)
2. Yasser Baleghi Damavandi, Karim Mohammadi "Fault Tolerance in Co-evolutionary Communication of EHW Modules", Journal of Computers & Mathematics with Applications, Elsevier, Volume 57, Issues 11-12, June 2009, Pages 1730-1735 (ISI Indexed)
 3. Alireza Asvadi, Mohammad Reza Karami, Yasser Baleghi, "Efficient Object Tracking using Optimized K-means Segmentation and radial Basis Function Neural Networks", International Journal of Information & Communication Technology Research, Vol 4, No 1, December 2011. Pages (29-39) (ISC Indexed)
 4. M. Gholami, Y. Baleghi, G. Ardeshir, "Design of Novel Testable and Diagnosable Phase-Frequency Detector", Journal of Circuits, Systems, and Signal Processing, Springer, Vol 33, No 4, April 2014. (ISI Indexed)
 5. Y. Baleghi Damavandi, K. Mohammadi, A. Upegi, Y. Thoma, "On Feasibility of Adaptive Level Hardware Evolution for Emergent Fault Tolerant Communication", International Journal of Engineering (IJE), 2013, Vol 27, No 1, (ISC Indexed)
 6. Mohammad Esmaeel Yahyatabar, Yasser Baleghi, and Mohammad Reza Karami. "Online Signature Verification: a Robust Approach for Persian Signatures." Information Systems & Telecommunication, Vol 3, No 2, 2015 (ISC Indexed)
 7. P. Ashooriyan, Y. Baleghi, "A Comparative Study of VHDL Implementation of FT-2D-cGA and FT- 3D-cGA on Different Benchmarks", International Journal of Engineering (IJE), Vol. 28, No. 9, 2015 (ISC Indexed)
 8. Kholerdi, Hedyeh A., Nima TaheriNejad, Reza Ghaderi, Yasser Baleghi. "Driver's drowsiness detection using an enhanced image processing technique inspired by the human visual system." Connection Science 28, no. 1 (2016): 27-46. (ISI Indexed)
 9. Iman Dostfatemeh, Yasser Baleghi, Comprehensive urban area extraction from multispectral medium spatial resolution remote-sensing imagery based on a novel structural feature, INTERNATIONAL JOURNAL OF REMOTE SENSING, 37 : 4225 - 4242, 2016. (ISI Indexed)
 10. P. Ashooriyan, Yasser Baleghi Damavandi, "Multiple-Fault Tolerant Hardware Structure for Cellular Genetic Algorithm", Journal Of Computing And Security, 3 : 27 - 42, 2016 (ISC Indexed).
 11. Mohammad Kakooei, Yasser Baleghi, Fusion of satellite aircraft and UAV data for automatic disaster damage assessment, INTERNATIONAL JOURNAL OF REMOTE SENSING, 38 : 2511 - 2534, 2017. (ISI Indexed)
 12. Ehsan Yousefi, Yasser Baleghi Damavandi, Sayed Mahmoud Sakhaei, Rotation invariant wavelet descriptors a new set of features to enhance plant leaves classification, COMPUTERS AND ELECTRONICS IN AGRICULTURE, 140 : 70 - 76, 2017. (ISI Indexed)
 13. MH Vali, A Aghagolzadeh, Y Baleghi, Optimized watermarking technique using self-adaptive differential evolution based on redundant discrete wavelet transform and singular value decomposition, Expert Systems with Applications, Vol 114, December 2018, 296-312. (ISI Indexed)
 14. SM Ghazali, Y Baleghi, Pedestrian Detection in Infrared Outdoor Images Based on Atmospheric Situation Estimation, Journal of AI and Data Mining, Volume 7, Issue 1, Winter and Spring 2019, Page 1-16. (ISC Indexed)
 15. Navid Nikbakhsh, Yasser Baleghi, Hamzeh Agahi, Maximum Mutual Information and Tsallis Entropy for Unsupervised, COMPUTERS AND ELECTRONICS IN AGRICULTURE, Vol 162, July 2019, 440-449, (ISI Indexed)
 16. H. Tavakolaee; Gh. Ardeshir; Y. Baleghi. "Fast Mux-based Adder with Low Delay and Low PDP". Journal of AI and Data Mining, 7, 3, 2019, 385-392. doi: 10.22044/jadm.2018.7177.1853. (ISC Indexed)
 17. Seyed M. Ghazali; Y. Baleghi. "Pedestrian Detection in Infrared Outdoor Images Based on Atmospheric Situation Estimation". Journal of AI and Data Mining, 7, 1, 2019, 1-16. doi: 10.22044/jadm.2018.5742.1696. (ISC Indexed)
 18. S Jabbari, Y Baleghi, "Segmentation of Skin Lesion Images Using a Combination of Texture and Color Information", JOURNAL OF SOFT COMPUTING AND INFORMATION TECHNOLOGY, (JSCIT), 8, 2019, 87-97. (ISC Indexed)
 19. N Nikbakhsh, Y Baleghi, H Agahi, "Maximum mutual information and Tsallis entropy for unsupervised segmentation of tree leaves in natural scenes", Computers and Electronics in Agriculture 162, 2019, 440-449. (ISI Indexed)
 20. M Kakooei, Y Baleghi, "Shadow detection in very high resolution RGB images using a special thresholding

- on a new spectral–spatial index", *Journal of Applied Remote Sensing* 14 (1), 2020. (ISI Indexed)
21. M Kakooei, Y Baleghi, "A two-level fusion for building irregularity detection in post-disaster VHR oblique images", *Earth Science Informatics*, 1-19, 2020. (ISI Indexed)
 22. M Kakooei, Y Baleghi, "VHR Semantic Labeling by Random Forest Classification and Fusion of Spectral and Spatial Features on Google Earth Engine", *Journal of AI and Data Mining*, 2020. (ISC Indexed)
 23. N Nikbakhsh, Y Baleghi Damavandi, H Agahi, "Plant Classification in Images of Natural Scenes Using Segmentations Fusion", *International Journal of Engineering* 33 (9), 1743-1750, 2020. (ISC Indexed)
 24. N Nikbakhsh, Y Baleghi, H Agah, "A novel approach for unsupervised image segmentation fusion of plant leaves based on G-mutual information", *Machine Vision and Applications* 32 (1), 1-12, 2020. (ISI Indexed)
 25. I Iraei, M Sharifi, Y Baleghi, "A new approach to enhance the estimation of blur parameters in blurred images", *Optik* 224, 2020. (ISI Indexed)
 26. Tavakkolai, Hamid, Gholamreza Ardeshir, and Yasser Baleghi. "Fast adder with the ability of multiple faults detection and correction." *International Journal of Nonlinear Analysis and Applications* 12. Special Issue, 937-950. 2021. (ISC Indexed)
 27. Dadgar, A., Y. Baleghi, and M. Ezoji. "Improved Object Matching in Multi-Objects Tracking Based on Zernike Moments and Combination of Multiple Similarity Metrics." *International Journal of Engineering*, 34.6, 1445-1454. 2021. (ISC Indexed)
 28. Kakooei, Mohammad, Yasser Baleghi, and Meisam Amani. "Adaptive thresholding for detecting building facades with or without openings in single-view oblique remote sensing images." *Journal of Applied Remote Sensing* 15.3, 036511. 2021. (ISI Indexed).
 29. Baleghi, Yasser, and David Rousseau. "An analytical proof on suitability of Cauchy-Schwarz Divergence as the aggregation criterion in Region Growing Algorithm." *Image and Vision Computing* 115 , 104312. 2021. (ISI Indexed).
 30. Kakooei, M., Ghorbanian, A., Baleghi, Y., Amani, M., & Nascetti, A. "Remote sensing technology for postdisaster building damage assessment." In *Computers in Earth and Environmental Sciences* (pp. 509-521). Elsevier. 2022 (Book Chapter)
 31. Kakooei, Mohammad, and Yasser Baleghi. "Automatic Shadow Direction Determination using Shadow Low Gradient Direction Feature in RGB VHR Remote Sensing Images." *Journal of AI and Data Mining*, 2022. (ISC Indexed).
 32. A. Parnak; Y. Baleghi Damavandi; S. J. Kazemitabar. "A Novel Image Splicing Detection Algorithm Based on Generalized and Traditional Benford's Law". *International Journal of Engineering*, 35, 4, 2022, 626-634. doi: 10.5829/ije.35.04A.02, 2022. (ISC Indexed).
 33. Shojaiee, F., & Baleghi, Y., Pedestrian head direction estimation using weight generation function for fusion of visible and thermal feature vectors. *Optik*, 254, 168688, 2022. (ISI Indexed).
 34. Soroush, R., & Baleghi, Y. NIR/RGB image fusion for scene classification using deep neural networks. *The Visual Computer*, 1-15, 2022, (ISI Indexed).
 35. Dadgar, A., Baleghi, Y., & Ezoji, M. Multi-View Data Fusion in Multi-Object Tracking with Probability Density-Based Ordered Weighted Aggregation. *Optik*, 169279, 2022, (ISI Indexed).
 36. Soroush, R., & Baleghi, Y. Ensemble Learning for Multispectral Scene Classification. *International Journal of Pattern Recognition and Artificial Intelligence*, 2022, (ISI Indexed).
 37. Nouri, M., & Baleghi Damavandi, Y. A New Texture Segmentation Method with Energy-driven Parametric Active Contour Model Based on Jensen-Tsallis Divergence. *International Journal of Engineering*, 35(7), 1257-1267, 2022, (ISC Indexed).
 38. Zamani, S. A., & Baleghi, Y. Early/late fusion structures with optimized feature selection for weed detection using visible and thermal images of paddy fields. *Precision Agriculture*, 1-29, 2022, (ISI Indexed).
 39. Khandouzi, A., Ariaifar, A., Mashayekhpour, Z., Pazira, M., & Baleghi, Y. (2022). Retinal vessel segmentation, a review of classic and deep methods. *Annals of Biomedical Engineering*, 1-23, 2022, (ISI Indexed).
 40. Ghazali, S. M., Alizadeh, M., Mazloum, J., & Baleghi, Y. Modified binary salp swarm algorithm in

EEG signal classification for epilepsy seizure detection. *Biomedical Signal Processing and Control*, 78, 103858, 2022, (ISI Indexed).

41. Soroush, R., & Baleghi, Y. Scene Recognition in New Multi-Spectral Dataset (RGB-IR) and Deep Convolutional Networks with Transfer Learning Approach. *Journal of Machine Vision and Image Processing*, 9(4), 15-30, 2022, (ISC Indexed).

42. Vatanpour, V. S., Sakhaei, S. M., Baleghi, Y., & Banimostafavi, E. S. Improving the automatic diagnosis of benign and malignant masses in breast ultrasound images using an optimal segmentation method. *Journal of Machine Vision and Image Processing*, 9(4), 79-91, 2022, (ISC Indexed).

43. Shojaiee, F., & Baleghi, Y. EFASPP U-Net for semantic segmentation of night traffic scenes using fusion of visible and thermal images. *Engineering Applications of Artificial Intelligence*, 117, 105627, 2023, (ISI Indexed).

44. Kakooei, M., & Baleghi, Y. (Fusion of vertical and oblique images using Intra-Cluster-Classification for building damage assessment. *Computers and Electrical Engineering*, 105, 108536, 2023, (ISI Indexed).

45. Nouri, M., & Baleghi, Y. An active contour model reinforced by convolutional neural network and texture description. *Neurocomputing*, 2023, (ISI Indexed).

▪ Conference Papers:

1. Yasser Baleghi Damavandi, Karim Mohammadi, "Speed Limit Traffic Sign Detection & Recognition", Proceedings of the 2004 IEEE Conference on Cybernetics and Intelligent Systems Singapore, 1-3 December, 2004 – pp. 796-801

2. Yasser Baleghi Damavandi, Ahmad Akbari, Karim Mohammadi, "Automatic Gender Identification via Sentence Independent Speech Processing", Proceedings of Computer Engineering Student Conference, Iran University of Science & Technology, 18-19 May 2005. (Gained best paper award)

3. Yasser Baleghi Damavandi, Karim Mohammadi, "On Feasibility of Common Language Development among Intelligent Agents Using Evolvable Hardware Simulation with Inspiration from Origin of Language", 3rd International conference of cognitive science, 2009

4. Yasser Baleghi Damavandi, Karim Mohammadi, "Emergence of Optimized Communication in Simulation of EHW Modules", Third International Conference on Modeling, Simulation and applied optimization ICMSAO'09, 2009

5. Alireza Asvadi, MohammadReza Karami-Mollaie, Yasser Baleghi, Hosein Seyyedi-Andi, "Improved Object Tracking Using Radial Basis Function Neural Networks" ,The 7th Iranian Conference on Machine Vision and Image Processing, (IEEE Indexed), November 2011.

6 Alireza Asvadi, MohammadReza Karami-Mollaie, Yasser Baleghi, " Object Tracking Using Adaptive Object Color Modeling", 4th Conference on Information and Knowledge Technology, IKT2012, 2011.

7. M.E. Yahyatabar, Y.Baleghi, M.R. Karami, "Online Signature Verification: A Persian-Language Specific Approach", 21st Iranian Conference on Electrical Engineering (ICEE), (IEEE Indexed) 2013.

8. Pegah Nouri, Yasser Baleghi, Maryam Khademi, "Curvature Correction and Shadow Images of Scanned Documents based on Boundary Lines of Text and Brightness Estimation Function", 7th International Symposium on Advances in Science & Technology, March 2013.

9. Alireza Asvadi, Hami Mahdavinataj, Mohammadreza Karami, Yasser Baleghi "Incremental Discriminative Color Object Tracking", International Symposium on Artificial Intelligence and Signal Processing, Sharif University of Technology, December 2013.

10. Mohammad Kazemi, Yasser Baleghi, " L*a*b* Color Model based Road Lane detection in Autonomous Vehicles", 2nd International Conference on Pattern Recognition and Image analysis (IPRIA2015), 2015

11. Javad Rahimi, Ali Aghagolzadeh, Yasser Baleghi, " A New Modified Directional weighted Median Filter for Random value Impulse Noise Removal", 2nd International Conference on Pattern Recognition and Image analysis (IPRIA2015), 2015.

12. SA Mahdiraji, Y Baleghi, SM Sakhaei, Skin lesion images classification using new color pigmented boundary descriptors, 3rd International Conference on Pattern Recognition and Image Analysis (IPRIA), 2017.

13. SA Mahdiraji, Y Baleghi, SM Sakhaei, BIBS, a New Descriptor for Melanoma/Non-Melanoma Discrimination, Iranian Conference on Electrical Engineering (ICEE), 2018.
14. Mohammad Kakooei, Yasser Baleghi, Leaf-Less-Tree feature for semantic labeling applications on Google Earth Engine, 2018 9th International Symposium on Telecommunications (IST), 609-613.
15. Mohammadpour, Elham, and Yasser Baleghi. "Retinal Blood Vessel Segmentation Based on Vessel Branch Width Adaptation." *2018 25th National and 3rd International Iranian Conference on Biomedical Engineering (ICBME)*. IEEE, 2018.
16. M Kakooei, Y Baleghi, Spectral Unmixing of Time Series Data to Provide Initial Object Seeds for Change Detection on Google Earth Engine, 2019 27th Iranian conference on electrical engineering (ICEE), 1402-1407, 2019.
17. N Nikbakhsh, Y Baleghi, A New Fast Method of Image Segmentation Fusion Using Maximum Mutual Information, 2019 27th Iranian Conference on Electrical Engineering (ICEE), 1584-1588, 2019.
18. A Parnak, Y Baleghi, J Kazemitabar, A Novel Forgery Detection Algorithm Based on Mantissa Distribution in Digital Images, 2020 6th Iranian Conference on Signal Processing and Intelligent Systems (ICSPIS). IEEE. 2020.
19. M Najafi, Y Baleghi, SA Gholamian, SM Mirimani, Fault Diagnosis of Electrical Equipment through Thermal Imaging and Interpretable Machine Learning Applied on a Newly-introduced Dataset, 2020 6th Iranian Conference on Signal Processing and Intelligent Systems, 2020.
20. Pazira, M., Baleghi, Y., & Akbari, A. Hardware Trojan Detection Using Thermal Imaging in FPGAs with Combined Features. In *2021 7th International Conference on Signal Processing and Intelligent Systems (ICSPIS)* (pp. 1-5). IEEE, 2021.
21. Dadgar, A., Baleghi, Y., & Ezoji, M. Improvement of Human Tracking Based on an Accurate Estimation of Feet or Head Position. In *2022 International Conference on Machine Vision and Image Processing (MVIP)* (pp. 1-7). IEEE, 2022.
22. Naghshbandi, H., & Damavandi, Y. B. Automated Cell Tracking Using Adaptive Multi-stage Kalman Filter In Time-laps Images. In *2022 International Conference on Machine Vision and Image Processing (MVIP)* (pp. 1-8). IEEE, 2022.

Professional Service

- Co-Chair in section program committee of BICT2007 Conference.
- Editorial Board Member of [Journal of Soft Computing & Information Technology](#).

Reviewer of the:

- Journal of IEEE Transaction on Pattern Analysis & Machine Intelligence (TPAMI).
- Machine Vision and Applications Journal (MVA), Springer.
- Informatics in Medicine Unlocked.
- Computers and Electronics in Agriculture.
- Biomedical Signal Processing and Control.
- IEEE Transactions on Device and Materials Reliability.
- and ,

Language Skills

- Farsi: Mother Tongue
- English: Advanced, Scored 75/100 in MCHE exam (English test held by Iran ministry of educations for scholarship), Presented some talks in English in international conferences.
- French: Basic
- Arabic: Basic

Academic/Work Experience

Undergraduate: Electronics I & II, Digital Circuits Design, VHDL, Electronics Lab, Statistics and Probabilistic.

- **Teaching:**

Graduate: Image Processing, Advanced Image Processing, Fault Tolerant System Design, ASIC/FPGA.

- **Projects:**

- *Image Transmission Through Phone Line*, TAM IKCO Company, 2002
- *Industrial Design & Implementation of an Instrumentation Amplifier for Single Sheet Tester (SST)*, High Voltage Research Center of Iran University of Science & Technology, 2003
- *Design & Implementation of a Broadcast Standard Video Mixer*, Technical Research Center of IRI Broadcasting (IRIB), 2003-2005
- *Design & Implementation of Serializer & Deserializer parts of Broadcast Standard DVB_ASI/SDI Satellite Receiver*, FaraAfrand Company, 2006-2007
- On Board Computer (OBC) Group Supervisor of IUST *Student Satellite* Team, 2007
- 22nd Khwarizmi International Award, Third Laureate of Research & Development, Project Title: Design and of Develop Digital Television Set Top Boxes for Satellite, Terrestrial and Cable Reception, 2009
- EHW-Based On Board Computer (OBC) for Satellites, Research Project under a contract with Babol University of Technology, 2012.
- Designing the monitoring system of the germinating powder nozzle with the help of video processing and in the casting process, 2022-2023.

Positions

- Visiting fellow during sabbatical leave, University of west Switzerland, Yverdon, Switzerland, 2009
- Assistant Professor, Electrical & Computer Engineering Department, [Babol Noshirvani University of Technology](#), from 2010 to November 2016.
- Head of electronics group from December 2010 to December 2012.
- Head of electronics Laboratory from April 2011 to March 2014.
- Head of Talented Students Office from November 2014 to present.
- Associate professor, Electrical & Computer Engineering Department, [Babol Noshirvani University of Technology](#), from November 2016 to present.
- Simultaneous Post-doc position, University of Angers, France, 2019, Topic: image processing applications in agriculture

Relevant Computer Experience

- **Packages or CAD tools:** MATLAB (SimuLink).
- **VHDL, Verilog and related software:** MODELSIM, ISE.
- **Programmable Hardware:** FPGA.

Research Interests

Image Processing, Fault Tolerant Electronic Circuit Design, Evolutionary Algorithms, Neural Networks.