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Research Interests

Networks/ Electrical engineering/ Synthetic Aperture Radar (SAR) /Machine Learning / Deep Learning | Medical Image Analysis | Wireless Sensor Networks | Photocatalysis & Environmental Sensing | Digital Signal Processing

Selected Journal Publications

1. **Mohammadpoor, M.**, Eshghizadeh, M. (2025). An intelligent method to identify land use changes in an urban watershed in Iran. *GeoJournal*, 90(1), 32.
2. Ramezani-Avval Reiahi, J., **Mohammadpoor, M.** (2025). Prediction of barberry witches' broom rust disease using artificial intelligence models: a case study in South Khorasan, Iran. *Scientific Reports*, 15(1), 13144.
3. Mohammadzadeh Kakhki, R., YereyehZadeh, F., **Mohammadpoor, M.** (2025). Machine Learning Optimized Photocatalytic Degradation of Tetracycline Using Sulfur-Doped Zinc oxide/Chitosan Nanocomposites. *Journal of Polymers and the Environment*, 33(12), 5042-5065.
4. **Mohammadpoor, M.** (2024). Machine learning-driven approaches for synthesizing carbon dots and their applications in photoelectrochemical sensors. *Inorganic Chemistry Communications*, 159, 111859.
5. Kakhki, R. M., **Mohammadpoor, M.** (2024). KCl mediated Ag/Co@Fe₂O₃/C₃N₄ heterojunction as a highly efficient visible photocatalyst for tetracycline degradation: Application of machine learning. *Journal of Molecular Structure*, 1299, 137139.

6. **Mohammadpoor, M.** (2023). Diagnosing Patients with Pulmonary Tuberculosis by Processing Chest X-ray Images using Deep Learning. *Journal of Biomedical Physics & Engineering*, 13.
7. Mohammadzadeh Kakhki, R., Zirjanizadeh, S., **Mohammadpoor, M.** (2023). A review of clinoptilolite, its photocatalytic, chemical activity, structure and properties: in time of artificial intelligence. *Journal of Materials Science*, 58(26), 10555-10575.
8. Mahdianfar, H., **Mohammadpoor, M.**, Mahdavi, M. (2022). Determination of alteration genesis and quantitative relationship between alteration and geochemical anomaly using support vector machines. *International Journal of Mining and Geo-Engineering*, 56(1), 33-39.
9. **Mohammadpoor, M.** (2021). A deep learning algorithm to detect coronavirus (COVID-19) disease using CT images. *PeerJ Computer Science*, 7, e345.
10. **Mohammadpoor, M.**, Eshghizadeh, M. (2021). Introducing an intelligent algorithm for extraction of sand dunes from Landsat satellite imagery in terrestrial and coastal environments. *Journal of Coastal Conservation*, 25(1), 3.
11. **Mohammadpoor, M.**, Alizadeh, A. (2021). Using support vector machines as an intelligent algorithm for detecting seizures from EEG signals. *The Neuroscience Journal of Shefaye Khatam*, 9(2), 1-9.
12. **Mohammadpoor, M.** (2021). Detection of disc destruction between lumbar vertebrae using MRI images. *Soft Computing Journal*, 9(1), 114-123.
13. Kakhki, R. M., **Mohammadpoor, M.**, Assadi, H. (2020). A Bayesian regularized artificial neural network for simultaneous determination of loratadine, naproxen, and diclofenac in wastewaters. *Current Pharmaceutical Analysis*, 16(8), 1083-1092.
14. Kakhki, R. M., **Mohammadpoor, M.**, Faridi, R., Bahadori, M. (2020). The development of an artificial neural network–genetic algorithm model (ANN-GA) for the adsorption and photocatalysis of methylene blue on a novel sulfur–nitrogen co-doped Fe₂O₃ nanostructure surface. *RSC Advances*, 10(10), 5951-5960.
15. **Mohammadpoor, M.**, Kakhki, R. M., Assadi, H. (2019). A Bayesian regularized artificial neural network for simultaneous determination of loratadine, naproxen and diclofenac in wastewaters. *Current Pharmaceutical Analysis*, 15.
16. Saneipour, K., **Mohammadpoor, M.** (2019). Improvement of MRI brain image segmentation using fuzzy unsupervised learning. *Iranian Journal of Radiology*, 16(2), e69063.

17. **Mohammadpoor, M.**, Mehdizadeh, A., Noghabi, H. A. (2018). A novel method for Persian handwritten digit recognition using support vector machine. *Majlesi Journal of Electrical Engineering*, 12(3), 63-67.
18. Mehdizadeh, A., Nagarajan, M., Harun, H., **Mohammadpoor, M.** (2018). Congestion window scaling method to optimize delay in TCP/IP. *Wireless Personal Communications*, 101(4), 2227-2239.
19. Shoeibi, R., **Mohammadpoor, M.**, Omrani, A. S., Kianmehr, M. (2018). Design and Implement FPGA-Based Hardware and Software for Mobile Bioinformatics. *Shiraz E-Medical Journal*, 19(19), e66341.
20. **Mohammadpoor, M.**, Shoeibi, A., Shojaee, H. (2016). A hierarchical classification method for breast tumor detection. *Iranian Journal of Medical Physics*, 13(4), 261-268.
21. Mehdizadeh, A., **Mohammadpoor, M.**, Soltanian, Z. (2016). Secured route optimization and micro-mobility with enhanced handover scheme in mobile IPv6 networks. *International Journal of Engineering*, 29(11).
22. Dovlatabadi, R., **Mohammadpoor, M.** (2015). Designing a hybrid clustering routing algorithm based on cellular learning automata for optimizing lifetime of wireless sensor networks. *Advances in Computer Science: An International Journal*, 4(2), 61-69.
23. **Mohammadpoor, M.**, Abdullah, R. S. A. R., Ismail, A., Abas, A. F. (2013). Foreign object detection based on circular bistatic synthetic aperture radar. *Progress In Electromagnetics Research*, 134, 301-322.
24. **Mohammadpoor, M.**, Abdullah, R. S. A. R., Saleh, A. A., Al-Dabbagh, M. D. (2013). A bistatic linear frequency modulated radar for on-the-ground object detection. *Electromagnetics*, 33(2), 153-177.
25. **Mohammadpoor, M.**, Abdullah, R. S. A. R., Ismail, A., Abas, A. F. (2012). A circular synthetic aperture radar for on-the-ground object detection. *Progress In Electromagnetics Research*, 122, 269-292.

Conference Papers

1. **Mohammadpoor, M.**, Abdullah, R. S. A. R., Ismail, A., Abas, A. F. (2013). A ground based circular synthetic aperture radar. *2013 14th International Radar Symposium (IRS)*, 1, 521-526.

2. **Mohammadpoor, M.**, Abdullah, R. S. A. R., Ismail, A., Abas, A. F. (2011). A Linear Frequency Modulated bistatic radar for on-the-ground object detection. *2011 IEEE CIE International Conference on Radar*, 1, 63-66.
3. Abdullah, R. S. A. R., **Mohammadpoor, M.**, Ismail, A., Abas, A. F. (2011). A multistatic circular synthetic aperture radar for small object detection. *2011 IEEE RadarCon (RADAR)*, 262-266.
4. **Mohammadpoor, M.** (2025). Intelligent management of barberry witches' broom disease using deep learning algorithms: challenges and solutions. *International Conference on Artificial Intelligence and its Applications in Agriculture*.
5. **Mohammadpoor, M.** (2025). Using deep learning for automatic tracking of barberry witches' broom disease: a case study, Qaen County, South Khorasan Province, Iran. *25th Iranian Plant Protection Congress*.
6. **Mohammadpoor, M.** (2020). Diagnosis of pulmonary tuberculosis patients by processing chest X-ray images using deep learning. *5th International Congress on Mobile Health*.
7. Mehdizadeh, A., Suinggi, K., **Mohammadpoor, M.**, Harun, H. (2017). Virtual local area network (VLAN): Segmentation and security. *Third International Conference on Computing Technology and Information Management (ICCTIM2017)*, 78, 89.
8. Shoeibi, A., **Mohammadpoor, M.**, Anoosheh, H., Shoeibi, R., Ghorbani, M. (2017). An leukocytes counting system for acute lymphoblastic leukemia detection. *2nd International Congress on Mobile Health*, Shiraz, Iran (abstract).
9. Shoeibi, R., Shoeibi, A., **Mohammadpoor, M.**, Kianmehr, M. (2017). The application of wireless sensor technology in diagnosis and patient care. *2nd International Congress on Mobile Health*, Shiraz, Iran (abstract).
10. Shoeibi, R., **Mohammadpoor, M.**, Shoeibi, A., Kianmehr, M. (2017). Design and implement FPGA-based hardware and software for mobile bioinformatics. *2nd International Congress on Mobile Health*, Shiraz, Iran (abstract).
11. Yazdani, N. M., **Mohammadpoor, M.**, Zarafshan, M. (2016). Cluster selection optimization in wireless sensor networks using firefly algorithm. *Third International Conference on Applied Research in Electrical, Mechanical and Mechatronic*.
12. **Mohammadpoor, M.**, Yazdani, N. M., Zarafshan, M., Fadaee, M. (2015). Improving the performance of a digital modulations automated detection system using an

intelligent system. *National Conference for Practical Approach for Implementation of Scientific Concepts* (Best Paper Award).

13. Yazdani, N. M., **Mohammadpoor, M.**, Zarafshan, M. (2015). Designing a smart digital modulation types detection system. *7th National Iranian Conference of Electric & Electronic Engineering*.
14. Samadzade, R., **Mohammadpoor, M.** (2015). Face recognition using wavelet transform, PCA, and neural networks. *7th National Electric and Electronic Conference*, Gonabad, Iran.
15. Noughabi, H. A., **Mohammadpoor, M.** (2015). Stream-data management in smart homes. *7th National Electric and Electronic Conference*, Gonabad, Iran.
16. **Mohammadpoor, M.**, Talebian, R. (2014). Recognition of Persian handwritten numbers using LBP-HOG descriptor. *First National Conference in Developments of Electrical Engineering*, Golestan University, Iran.
17. Esmailzadeh, M., **Mohammadpoor, M.**, Kariman, M. (2014). Investigation of SONAR channel parameters in target position detection. *16th Conference on Marine Industries*, Iran.
18. Esmailzadeh, M., **Mohammadpoor, M.**, Kariman, M. (2014). A survey of positioning algorithms in under-water wireless sensor networks. *Second Conference on Hydraulic Applications*, Iranian University of Science and Technology.
19. Sazvar, H., **Mohammadpoor, M.** (2016). Classification of hyperspectral images using spectral-spatial information. *Second International Conference on New Research Findings in Electrical Engineering and Computer Science*, Sari, Iran.
20. Siuki, M. S., **Mohammadpoor, M.** (2016). Proposing an MRI images noise reduction algorithm using adaptive threshold. *2nd National Conference on New Findings in Electric and Computer*, Esfarayen, Iran.
21. Zafari, H., **Mohammadpoor, M.** (2016). Neural network optimization using metaheuristic algorithms. *2nd National Conference on New Findings in Electric and Computer*, Esfarayen, Iran.
22. Kariminejad, M., Taherinia, R., **Mohammadpoor, M.** (2016). Hyperspectral images classification using neural networks. *2nd National Conference on New Findings in Electric and Computer*, Esfarayen, Iran.

23. **Mohammadpoor, M.**, Yazdani, N. M., Zarafshan, M. (2016). Position control of separately excited DC motor using XCSLA controller. *International Conference on Electrical Engineering*, University of Tehran, Iran.
 24. **Mohammadpoor, M.** (2019). Hand gesture recognition. *4th National Conference on Application of New Technologies in Engineering Sciences*.
 25. **Mohammadpoor, M.** (2018). Reconfiguration and optimal placement of distributed generation units in distribution network to reduce losses and improve voltage stability using harmony search algorithm. *2nd International Conference on Electrical Engineering*.
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Theses (PhD)

PhD Thesis: *Circular Synthetic Aperture Radar Systems for On-the-ground Object Detection*. Universiti Putra Malaysia, 2012.

Supervised MSc Theses (Selected – 27+ Students)

- Supervisor: Classification of English wolves (F. Arbabi, 2015)
- Supervisor: Positioning in underwater wireless sensor networks using linear frequency modulation (M.E. Bahabadi, 2014)
- Supervisor: Face recognition using neural networks and PCA (R. Samadzadeh, 2015)
- Supervisor: Face recognition using neural networks and PCA (M.S. Siuki, 2015)
- Supervisor: Recognition of Persian handwritten numbers using SIFT algorithm (R. Talebian, 2015)
- Supervisor: Designing an intelligent algorithm for target tracking in WSN (M.R. Sahih, 2015)
- Supervisor: Classification of hyperspectral images using spectral-spatial information (H. Sazvar, 2016)
- Supervisor: Designing a method for Persian handwritten letter recognition (H. Zafari, 2016)
- Supervisor: Review and improve NGN implementation in Iranian telecommunications network (J. Divandari, 2016)

- Supervisor: Intelligent detection of brain tumors from MRI images (S. Yusofpur, 2016)
- Supervisor: An energy-aware routing protocol to extend WSN lifetime (R. Dowlatabadi, 2016)
- Supervisor: Face segmentation using skin color model for real-time video coding (S.M. Najafi, 2017)
- Supervisor: Designing a new energy-aware routing protocol for WSN (M. Zarafshan, 2017)
- Supervisor: MRI image segmentation using non-supervised fuzzy techniques (K. Saneipoor, 2017)
- Supervisor: Predicting Iranian population using neural networks (A. Shafeepur, in progress)
- Supervisor: Driver drowsiness and fatigue detection using image processing (N. Khosravi, in progress)
- Supervisor: Detection of discoloration between lumbar vertebrae using MRI (A. Mirzakhani, in progress)
- Supervisor: Clustering and routing using smart methods in WSN (A. Fazaeli, 2019)
- Supervisor: Introducing a new method to increase capacity of two-layer cellular systems (H. Dehghani Nughabi, 2018)

Co-Supervised MSc Theses (Selected)

- Increasing capacity of two-layer cellular networks using fuzzy logic (H. Fathnia, 2018)
- An efficient multi-objective tracking algorithm in WSN (M. Feyzipur Namaghi, 2017)
- Speech correction using spectral subtraction with cascade median filters (A. Khodabandeh, 2017)
- Power management to reduce energy consumption in WSN (M. Khosravi, 2016)
- A new method of data integration in WSN (N. Nurian Aval Nughabi, 2017)
- Optimal access to secondary users using collaborative sensing (S.A. Pishbin, 2018)

- Optimal routing in WSN (R. Sedaghati Nughabi, 2018)
 - Design of an optimal MAC protocol for WSN (F. Tavasoli Mendi, 2018)
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Book Chapter

Mohammadpoor, M., Ranjkeshan, R., Mehdizadeh, A. (2018). A multi-objective distribution network reconfiguration and optimal use of distributed generation units by harmony search algorithm. In *Fundamental Research in Electrical Engineering* (pp. 997-1008). Springer, Singapore.

Technical Skills

- **Radar Systems:** Synthetic Aperture Radar (SAR), Bistatic & Circular SAR, LFM radar
 - **Machine Learning / AI:** Deep Learning (CNN), SVM, Bayesian Regularized ANN, Genetic Algorithm, Fuzzy Unsupervised Learning, Metaheuristics (Firefly, Harmony Search)
 - **Image & Signal Processing:** Medical imaging (MRI, CT, X-ray), Hyperspectral imaging, EEG seizure detection, Persian handwritten recognition
 - **Networks:** Wireless Sensor Networks (WSN), TCP/IP optimization, Mobile IPv6, Routing protocols
 - **Programming:** MATLAB, Python, FPGA (basic)
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Awards & Honors

- **Best Paper Award** – National Conference for Practical Approach for Implementation of Scientific Concepts (2015)