

CURRICULUM VITAE

Maryam Monemian

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Current Position

Research Assistant Professor,
Vice-Dean for Research Affairs,
Medical Image and Signal Processing Research Center, Isfahan University of Medical Sciences.
From Jan. 2022.

Education

- **Post-Doc.** in Biomedical Engineering, Sept. 2018-August 2021.
Isfahan University of Medical Sciences
Supervisor: Dr. Hossein Rabbani
- **Ph.D.** in Electrical Engineering, Telecommunication Networks, Sept. 2010- Aug. 2016.
Isfahan University of Technology
Thesis: To propose new energy-based sensor selection algorithms for cooperative spectrum sensing in cognitive radio sensor networks
Thesis Grade: Excellent
Supervisor: Dr. Mehdi Mahdavi
Advisor: Dr. Mohammad Javad Omid
- **M.Sc.** in Electrical Engineering, Telecommunication Networks, Sept. 2007- Feb. 2010.
Isfahan University of Technology
Thesis: Fault tolerance and the betterment of bandwidth allocation in wireless cellular networks
Supervisors: Dr. Pejman Khadivi, Dr. Maziar Palhang
- **B.Sc.** in Electrical Engineering, Control, Sept. 2003- Sep. 2007.
Isfahan University of Technology
Thesis: Verification of data combining methods
Supervisor: Dr. Jafar Gheisari

Publications

- [1] [ISI, IF=5.6] **M. Monemian**, H. Rabbani, "A Computationally Efficient Red-lesion Extraction Method for Retinal Fundus Images," *IEEE Transactions on Instrumentation and Measurement*, 2022.
- [2] [ISI, IF=4.7] Mousavi, N., **Monemian, M.**, Ghaderi Daneshmand, P. *et al.* Cyst identification in retinal optical coherence tomography images using hidden Markov model. *Sci Rep* **13**, 12 (2023).
- [3] [ISI, IF=4.7] **Monemian, M.**, Rabbani, H. Detecting red-lesions from retinal fundus images using unique morphological features. *Sci Rep* **13**, 3487 (2023).
- [4] [ISI, IF=4.7] **Monemian, M.**, Rabbani, H. Exudate identification in retinal fundus images using precise textural verifications. *Sci Rep* **13**, 2824 (2023).
- [5] [ISI, IF=2.8] **Maryam Monemian**, Matin Irajpour, Hossein Rabbani, A review on texture-based methods for anomaly detection in retinal optical coherence tomography images, *Optik*, Volume 288, 2023, 171165.
- [6] [ISI, IF=5] **M. Monemian**, H. Rabbani, "Directional analysis of intensity changes for determining the existence of cyst in optical coherence tomography images," *Scientific Reports*, 2022.
- [7] [ISI, IF=5] **M. Monemian**, H. Rabbani, "Red-lesion Extraction in Retinal Fundus Images with Directional Intensity Changes' Analysis," *Scientific Reports Journal*, 2021.
- [8] [ISI, IF=5.6] **M. Monemian**, H. Rabbani, "Analysis of a novel segmentation algorithm for optical coherence tomography images based on pixels intensity correlations," *IEEE Transactions on Instrumentation and Measurement*, Vol. 70, 2020.
- [9] [ISI, IF = 2.44] **M. Monemian**, H. Rabbani, "Mathematical analysis of texture indicators for the segmentation of optical coherence tomography images", *International Journal for Light and Electron Optics (Optik)*, Vol. 219, 165227, 2020.
- [10] [ISI, IF = 3.3] **M. Monemian**, M. Mahdavi, M. J. Omid, "Improving the Lifetime of Multi-Channel Cognitive Radio Sensor Networks via New Spectrum Sensing Method", *Transactions on Emerging Telecommunications Technologies*, Wiley Online Library, 2018.
- [11] [ISI, IF = 4.3] **M. Monemian**, M. Mahdavi, M. J. Omid, "Optimum Sensor Selection Based on Energy Constraints in Cooperative Spectrum Sensing for Cognitive Radio Sensor Networks", *IEEE Sensors Journal*, Vol. 16, Issue. 6, pp. 1829-1841, 2016.
- [12] [ISI, IF = 4.3] **M. Monemian**, M. Mahdavi, "Analysis of a new energy-based sensor selection method for cooperative spectrum sensing in cognitive radio networks", *IEEE Sensors Journal*, pp. 3021-3032, 2014.
- [13] **M. Monemian**, M. Mahdavi, M. J. Omid, "A comprehensive sensor selection method based on energy constraints for cooperative spectrum sensing", *Proceeding of IEEE International Conference on Communications (ICC)*, Kuala Lumpur, Malaysia, 2016.
- [14] **M. Monemian**, M. Mahdavi, M. J. Omid, "A novel energy efficient sensor selection algorithm for a multi-channel cognitive radio network", *Proceeding of IEEE 23rd Iranian Conference on Electrical Engineering (ICEE)*, Tehran, Iran, pp. 363-367, 2015.

- [15] **M. Monemian**, M. Mahdavi, “Sensing user selection based on energy constraints in cognitive radio networks”, *Proceeding of IEEE Wireless Communication and Networking Conference (WCNC)*, Istanbul, Turkey, pp. 3379-3384, 2014.
- [16] **M. Monemian**, P. Khadivi, “A novel CAC algorithm based on bandwidth degradation for more efficient provision of the requirements of multimedia applications”, *Proceeding of IEEE International Symposium on Telecommunications (IST)*, Tehran, Iran, pp. 754-759, 2012.
- [17] **M. Monemian**, P. Khadivi, M. Palhang, “Cost calculation in bandwidth degradation schemes in cellular networks”, *Proceeding of IEEE 18th Iranian Conference on Electrical Engineering (ICEE)*, Tehran, Iran, pp. 162-166, 2010.
- [18] **M. Monemian**, P. Khadivi, M. Palhang. “Bandwidth degradation for dropping rate reduction in cellular networks”, *Proceeding of IEEE Malaysian International Conference on Communications (MICC)*, Kuala Lumpur, Malaysia, pp. 613-617, 2009.
- [19] **M. Monemian**, P. Khadivi, M. Palhang. “Analytical model of failure in LTE networks”, *Proceeding of IEEE Malaysian International Conference on Communications (MICC)*, Kuala Lumpur, Malaysia, pp. 821-825, 2009.
- [20] **M. Monemian**, H. Rabbani, “A new texture-based segmentation method for optical coherence tomography images”, *IEEE Engineering in Medicine and Biology Conference (EMBC)*, 2019.
- [21] **M. Monemian**, P. Khadivi, “A New Approach for the Betterment of Wireless Network Performance Using Bandwidth Degradation and Ad-hoc Relaying”, *Majlesi Journal of Electrical Engineering*, Vol. 7, No. 2, pp. 48-57, 2013.

Invited Book Chapters

- **M. Monemian**, H. Rabbani, Texture modelling in optical coherence tomography images, Taylor & Francis Group, CRC press, 2020.

Computer skills

- Office
- MATLAB
 - Sample projects: All the computer simulations of Master PhD, post-doc thesis were done with MATLAB.
- C, C#, LINQ, Entity Framework, SQL server
- Python
- PHP, MYSQL, Wordpress, CodeIgniter, Bootstrap
- HTML, CSS, JQuery, Javascript

Teaching experiences

Graduate teaching experiences

- **Digital Signal Processing (DSP)**, Islamic Azad University of Majlesi, 2013.
- **Stochastic processes**, Islamic Azad University of Majlesi, 2013.

Undergraduate teaching experiences

- **C programming**, Isfahan University of Technology, 2011.
- **NGN networks**, Jahad University, Branch of Isfahan University of Technology, 2010.
- **Computer networks**, Jahad University, Branch of Isfahan University of Technology, 2010.
- **Electronic I**, Islamic Azad University of Najafabad, 2011.
- **Signals and systems**, Islamic Azad University of Majlesi, 2010.
- **Digital communication**, Foulad Institute of Technology, 2012.
- **Mobile communication**, Foulad Institute of Technology, 2012.
- **Internet engineering**, Foulad Institute of Technology, 2012.

Languages

- English
 - TOEFL iBT score: 95
- Farsi (Persian): Maternal Tongue

Research Projects and Grants

- Real time defogging of laparoscopic videos (Image processing project with MATLAB), SaIran Medical Equipments Industry, Iran.
- Analysis of hemorrhage in fundus images, NIMAD Institute, Iran.
- Identification of cysts in OCT B-scan using Hidden Markov Model, NIMAD Institute, Iran.

Honors and Awards

- Recipient of Student Travel Grant at WCNC 2014.
- The paper “*Analysis of a new energy-based sensor selection method for cooperative spectrum sensing in cognitive radio networks*” was in top 25 most downloaded paper at August 2014.
- Ranked 432 in 2003 Universities Entrance Examination for Bachelor’s Degree.
- Ranked 146 in 2007 Universities Entrance Examination for Master’s Degree.

Supervising experiences

- BS thesis, “Path-finder robots”, Foulad Institute of technology.
- BS thesis, “To control step motor with ARM microcontroller”, Foulad Institute of technology.

Fields of interest

- Image processing
- Software Development
- Medical image detection and segmentation
- Cognitive radio networks
- Wireless mobile sensor networks
- Mathematical modelling with application in biomedical engineering
- Machine learning
- Cooperative communication
- Web programming and design

References

- Dr. Hossein Rabbani, Professor, Isfahan University of Medical Sciences,
Email: Rabbani.h@gmail.com
- Dr. Mehdi Mahdavi, Associate Professor, Isfahan University of Technology,
Email: m_mahdavi@cc.iut.ac.ir
- Dr. Mohammad Javad Omid, Professor, Isfahan University of Technology.
Email: omidi@cc.iut.ac.ir
- Dr. Jafar Gheisari, Associate Professor, Isfahan University of Technology.
Email: gheisari@cc.iut.ac.ir
- Dr. Mohammad Davarpanah Jazi, Assistant Professor, Isfahan University of Technology.
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