

Mahdi Orooji, Ph.D.

Assistant Professor of Biomedical Engineering
Tarbiat Modares University, Tehran, Iran

Address: Room 6/702, Department of Electrical Eng. Tarbiat Modares University, Tehran, Iran
Phone (Cellphone): +98 912 377 2561
Phone (Office): +98 21 8288 4972
Email: morooji@modares.ac.ir

Education

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| 2013-2016 | Postdoctoral of Biomedical Engineering
Center for Computational Imaging and Personalized Diagnostics (CCIPD)
Case Western Reserve University, Cleveland, OH, USA
Under the supervision of Professor Anant Madabhushi |
| 2009-2013 | PhD of Communication and Signal Processing
School of Electrical Engineering and Computer Sciences
Louisiana State University (LSU), Baton Rouge, LA, USA |
| 2009-2011 | M.Sc. of Communication and Signal Processing
School of Electrical Engineering and Computer Sciences
Louisiana State University (LSU), Baton Rouge, LA, USA |
| 2003-2006 | M.Sc. of Electrical Engineering
Department of Electrical Engineering
Iran University of Science and Technology (IUST), Tehran, Iran |
| 1998-2003 | B.Sc. of Electrical Engineering
Department of Electrical and Computer Engineering
University of Tehran, Tehran, Iran |

Research Interest

- Telemedicine
- Digital Health
- Computer Aided Diagnosis Systems
- Machine Learning and Pattern Recognition
- Image Processing
- Image Fusion
- Wireless Body Area Networks

Professional and Research Experience

2016-Present **Department of Electrical Engineering, Tarbiat Modares University**
Assistant Professor of Biomedical Engineering

Researches are mainly focused on:

1. Machine Learning, application on Computer Aided Diagnostics systems
2. Designing and implementing Craniotomy Surgery Tele-Robot
3. Analysis and evaluation of Wireless Body Area Networks (WBAN)
4. Using machine learning on E-Nose in telemedicine applications.
5. Photoacoustic beam-forming and image enhancement.

2013-2016 **Center for Computational Imaging and Personal Diagnostics, Case Western Reserve University**
Postdoctoral Fellow

1. Introduce Spatially Aware Expectation-Maximization (SpAEM) paradigm for joint parameter estimation and image segmentation, application on Transrectal Ultrasounds (TRUS) imagery.
2. Design and develop automatic and semiautomatic multi-modal fusion systems using ITK/VTK toolkits in C++. The system is optimized and implemented on High Performance Computing (HPC) clusters.
3. Employ state of the art machine learning for computerized diagnosis invasive adenocarcinoma vs. adenocarcinoma in situ in low dose CT scan.
4. Employ state of the art machine learning technology to co-register pathology and radiology data of lung nodules in order to characterize intra-tumor heterogeneity.

2009-2013 **Department of Electrical Eng. Louisiana State University (LSU), Baton Rouge, LA**
Research Assistant, PhD Student

1. Spectrum Management and Co-Channel Interference Modeling in Wireless Systems
 - 1.1. Introduced and simulated MIMO spectrum sensing for cognitive radios in low SNR regime.
 - 1.2. Designed a novel algorithm to detect license holder users during the packet reception in the cognitive user receiver.
 - 1.3. Remodeled Co-Channel-Interference (CCI) from underlay wireless networks.
2. Wireless sensor networks security
 - 2.1. Designed and evaluated a decentralized node-classifier/hypothesis-tester in distributed sensor networks in the presence of attackers and misbehaving nodes.
3. Infra-red image segmentation and registration
 - 3.1. Designed and implemented the commercial software for Infra-red back skin temperature image segmentation and registration. My software has been employed in Pennington Biomedical Research Center (PBRC), Baton Rouge, LA.

2007-2009 **Maxis Communication Bhd., Kuala Lumpur, Malaysia**
System Engineer in R&D Section.

I designed and implemented automatic voice recognition/speaker identification based on Hidden-Markov-Model (HMM) in portable devices.

2003-2006 **Micro-Moj Telecommunication Co., Tehran, Iran**
Wireless System Designer.

1. Designed, and implemented EDGE modem:
 - 1.1. Evaluated EDGE/GSM channel modeling (RAX, TUx, HTx, EQx).
 - 1.2. Designed and implemented equalizer/demodulator of EDGE modems.
2. Studied and designed Digital Video Broadcasting-Terrestrial (DVB-T) receiver:
 - 2.1. Simulated OFDM demodulator in DVB-T receiver.
 - 2.2. Simulated and evaluated forward error correction (FEC) channel coding used in DVB-T transmitters.

Selected Publications

Journal Papers

- [J1] Reza Akbari Movahed, Elnaz Mohammadi, Mahdi Orooji, "Automatic Segmentation of Sperm's Parts in Microscopic Images of Human Semen Smears Using Concatenated Learning Approaches", accepted on *Computers in Biology and Medicine*, Elsevier
- [J2] M. Mozaffarzadeh, A. Mahloojifar, V. Periyasamy, M. Pramanik and M. Orooji, "Eigenspace-Based Minimum Variance Combined with Delay Multiply and Sum Beamformer: Application to Linear-Array Photoacoustic Imaging," in *IEEE Journal of Selected Topics in Quantum Electronics*, vol. 25, no. 1, pp. 1-8, Jan.-Feb. 2019
- [J3] Roya Paridar, Moein Mozaffarzadeh, Vijitha Periyasamy, Manojit Pramanik, Mohammad Mehrmohammadi, Mahdi Orooji, "Sparsity-Based Beamforming to Enhance Two-Dimensional Linear-Array Photoacoustic Tomography", *Ultrasonics*, 2019
- [J4] Roya Paridar, Moein Mozaffarzadeh, Mahdi Orooji, and Mohammadreza Nasiriavanaki, "Double Minimum Variance Beamforming Method to Enhance Photoacoustic Imaging", *American Journal of Biomedical Science and Research*, Volume 1, Issue 2, January 2019
- [J5] M. Alilou, M. Orooji, N. Beig, P. Prasanna, P. Rajiah, C. Donatelli, et al., "Quantitative vessel tortuosity: A potential CT imaging biomarker for distinguishing lung granulomas from adenocarcinomas," *Scientific Reports*, vol. 8, p. 15290, 2018/10/16 2018.
- [J6] Paridar, R. , Mozaffarzadeh, M. , Periyasamy, V. , Basij, M. , Mehrmodammadi, M. , Pramanik, M. and Orooji, M. (2018), "Validation of Delay-Multiply-and-Standard-Deviation Weighting Factor for Improved Photoacoustic Imaging of Sentinel Lymph Node." *J. Biophotonics*. doi:10.1002/jbio.201800292
- [J7] Parsa Omid, Mohsin Zafar, Moein Mozaffarzadeh, Ali Hariri, Xiangzhi Haung, Mahdi Orooji, Mohammadreza Nasiriavanak, "A Novel Dictionary-Based Image Reconstruction for Photoacoustic Computed Tomography", *Journal of Applied Sciences*, Vol.8, 2018
- [J8] Roya Paridar, Moein Mozaffarzadeh, Mohammad Mehrmohammadi, and Mahdi Orooji, "Photoacoustic image formation based on sparse regularization of minimum variance beamformer," *Biomed. Opt. Express* 9, 2544-2561 (2018)

- [J9] Mahdi Orooji, Mahdi Orooji, Mehdi Alilou, Mehdi Alilou, Sagar Rakshit, Sagar Rakshit, Niha G. Beig, Niha G. Beig, Mohammadhadi Khorrami, Mohammadhadi Khorrami, Prabhakar Rajiah, Prabhakar Rajiah, Rajat Thawani, Rajat Thawani, Jennifer Ginsberg, Jennifer Ginsberg, Christopher Donatelli, Christopher Donatelli, Michael Yang, Michael Yang, Frank Jacono, Frank Jacono, Robert C. Gilkeson, Robert C. Gilkeson, Vamsidhar Velcheti, Vamsidhar Velcheti, Philip Linden, Philip Linden, Anant Madabhushi, "Combination of computer extracted shape and texture features enables discrimination of granulomas from adenocarcinoma on chest computed tomography," *Journal of Medical Imaging* 5(2), 024501 (18 April 2018)
- [J10] Moein Mozaffarzadeh, Masume Sadeghi, Ali Mahloojifar, Mahdi Orooji, "Double-Stage Delay Multiply and Sum Beamforming Algorithm Applied to Ultrasound Medical Imaging", *Ultrasound in Medicine & Biology*, Volume 44, Issue 3, 2018, Pages 677-686,
- [J11] Mozaffarzadeh M, Mahloojifar A, Orooji M, Adabi S, Nasiriavanaki M. Double-stage delay multiply and sum beamforming algorithm: Application to linear-array photoacoustic imaging. *IEEE Transactions on Biomedical Engineering*. 2018 Jan;65(1):31-42.
- [J12] Mozaffarzadeh M, Mahloojifar A, Orooji M, Kratkiewicz K, Adabi S, Nasiriavanaki M. Linear-array photoacoustic imaging using minimum variance-based delay multiply and sum adaptive beamforming algorithm. *Journal of biomedical optics*. 2018 Feb;23(2):026002.
- [J13] Mozaffarzadeh M, Sadeghi M, Mahloojifar A, Orooji M. Double-stage delay multiply and sum beamforming algorithm applied to ultrasound medical imaging. *Ultrasound in medicine & biology*. 2018 Mar 1;44(3):677-86.
- [J14] Mahdi Orooji, Mehdi Alilou, Sagar Rakshit, Niha Beig, Mohammad Hadi Khorrami, Prabhakar Rajiah, Rajat Thawani, Jennifer Ginsberg, Christopher Donatelli, Michael Yang, Frank Jacono, Robert Gilkeson, Vamsidhar Velcheti, Philip Linden, Anant Madabhushi, "Combination of computer extracted shape and texture features enables discrimination of granulomas from adenocarcinoma on chest computed tomography", *Journal of Medical Imaging*, Vol. 5, 024501
- [J15] Alilou, M. , Beig, N. , Orooji, M. , Rajiah, P. , Velcheti, V. , Rakshit, S. , Reddy, N. , Yang, M. , Jacono, F. , Gilkeson, R. C., Linden, P. and Madabhushi, A. (2017), An integrated segmentation and shape-based classification scheme for distinguishing adenocarcinomas from granulomas on lung CT. *Med. Phys.*, 44: 3556-3569. doi:10.1002/mp.12208
- [J16] M Peterson, C.; Orooji, M.; Johnson, D.; Naraghi-Pour, M.; Ravussin, E.; "Brown adipose tissue does not seem to mediate metabolic adaptation to overfeeding in men", *Obesity*. doi:10.1002/oby.21721
- [J17] Shaomian Y.; Rezai-Rad, M.; Bova, J.; Orooji, Mahdi; Pepping J.; Qureshi, A.; Del Piero, F.; Hayes, D.; "Evaluation of bone regeneration potential of dental follicle stem cells for treatment of craniofacial defects", *Cytotherapy*, Volume 17, Issue 11, November 2015, Pages 1572-1581, ISSN 1465-3249, <http://dx.doi.org/10.1016/j.jcyt.2015.07.013>.
- [J18] Orooji, M.; Soltanmohammadi, E.; Naraghi-Pour, M., "Improving Detection Delay in Cognitive Radios Using Secondary User Receiver Statistics," *Vehicular Technology, IEEE Transactions on* , vol. 64, no. 9, pp. 4041-4055, Sept. 2015. doi: 10.1109/TVT.2014.2364227
- [J19] Soltanmohammadi, E.; Orooji, M.; Naraghi-Pour, M.; "Spectrum Sensing Over MIMO Channels Using Generalized Likelihood Ratio Tests", *IEEE Signal Processing Letters* , vol.20, no.5, pp.439,442, May 2013

- [J20] Soltanmohammadi, E.; Orooji, M.; Naraghi-Pour, M.; "Improving the Sensing-Throughput Tradeoff for Cognitive Radios in Rayleigh Fading Channel", IEEE Transactions on Vehicular Technology, March 2013
- [J21] Soltanmohammadi, E.; Orooji, M.; Naraghi-Pour, M.; "Decentralized Hypothesis Testing in Wireless Sensor Networks in the Presence of Misbehaving Nodes," IEEE Transactions on Information Forensics and Security, vol.8, no.1, pp.205-215, Jan. 2013
- [J22] Orooji, M.; Soosahabi, R.; Naraghi-Pour, M.; "Blind Spectrum Sensing Using Antenna Arrays and Path Correlation", IEEE Transactions on Vehicular Technology, vol.60, pp.3758-3767, Oct. 2011

Conference Papers

- [C1] Roya Paridar, Moein Mozaffarzadeh, Mohammad Mehrmohammadi, Maryam Basij, and Mahdi Orooji "Delay-multiply-and-standard-deviation weighting factor improves image quality in linear-array photoacoustic tomography", Proc. SPIE 10878, Photons Plus Ultrasound: Imaging and Sensing 2019, 108786N (27 February 2019); doi: 10.1117/12.2508027
- [C2] Moein Mozaffarzadeh, Moein Mozaffarzadeh, Ali Mahloojifar, Ali Mahloojifar, Mohammadreza Nasiriavanaki, Mohammadreza Nasiriavanaki, Mahdi Orooji, "Eigenspace-based minimum variance adaptive beamformer combined with delay multiply and sum: experimental study", Proc. SPIE 10467, Photonics in Dermatology and Plastic Surgery 2018, 1046717 (22 February 2018);
- [C3] Roya Paridar, Moein Mozaffarzadeh, Moein Mozaffarzadeh, Ali Mahloojifar, Ali Mahloojifar, Mohammadreza Nasiriavanaki, Mohammadreza Nasiriavanaki, Mahdi Orooji, "Three-dimensional photoacoustic tomography using delay multiply and sum beamforming algorithm", Proc. SPIE 10494, Photons Plus Ultrasound: Imaging and Sensing 2018, 1049440 (22 February 2018)
- [C4] R. Paridar, M. Mozaffarzadeh, M. Basij, M. Mehrmohammadi and M. Orooji, "Regularized Capon Beamformer Using l_1 -Norm Applied to Photoacoustic Imaging," 2018 IEEE International Ultrasonics Symposium (IUS), Kobe, 2018
- [C5] Roya Paridar, Moein Mozaffarzadeh, Maryam Basij, Mohammad Mehrmohammadi, and Mahdi Orooji "An advanced sparsity-based photoacoustic image reconstruction algorithm for linear-array transducer scenario", Proc. SPIE 10878, Photons Plus Ultrasound: Imaging and Sensing 2019, 108786O (27 February 2019); doi: 10.1117/12.2508039
- [C6] Moein Mozaffarzadeh, Moein Mozaffarzadeh, Ali Mahloojifar, Ali Mahloojifar, Mohammadreza Nasiriavanaki, Mohammadreza Nasiriavanaki, Mahdi Orooji, "Model-based photoacoustic image reconstruction using compressed sensing and smoothed L0 norm", Proc. SPIE 10494, Photons Plus Ultrasound: Imaging and Sensing 2018, 104943Z (22 February 2018);
- [C7] Roya Paridar, Moein Mozaffarzadeh, Mohammad Mehrmohammadi, Maryam Basij, and Mahdi Orooji "Artifact reduction using minimum variance-based sparse subarray technique in linear-array photoacoustic tomography", Proc. SPIE 10878, Photons Plus Ultrasound: Imaging and Sensing 2019, 108786M (27 February 2019); doi: 10.1117/12.2508004

- [C8] Alilou M., Orooji M., Madabhushi A. (2017) Intra-perinodular Textural Transition (Ipris): A 3D Descriptor for Nodule Diagnosis on Lung CT. In: Descoteaux M., Maier-Hein L., Franz A., Jannin P., Collins D., Duchesne S. (eds) Medical Image Computing and Computer-Assisted Intervention – MICCAI 2017. MICCAI 2017. Lecture Notes in Computer Science, vol 10435. Springer, Cham.
- [C9] Mozaffarzadeh M, Mahloojifar A, Orooji M. Medical photoacoustic beamforming using minimum variance-based delay multiply and sum. In Digital Optical Technologies 2017 2017 Jun 26 (Vol. 10335, p. 1033522). International Society for Optics and Photonics.
- [C10] Mozaffarzadeh M, Mahloojifar A, Nasiriavanaki M, Orooji M. “Eigenspace-based minimum variance adaptive beamformer combined with delay multiply and sum: experimental study.”, Photonics in Dermatology and Plastic Surgery 2018 2018 Feb 22 (Vol. 10467, p. 1046717). International Society for Optics and Photonics.
- [C11] Mozaffarzadeh M, Mahloojifar A, Orooji M. “Image enhancement and noise reduction using modified delay-multiply-and-sum beamformer: Application to medical photoacoustic imaging.”, Electrical Engineering (ICEE), 2017 Iranian Conference on 2017 May 2 (pp. 65-69). IEEE.
- [C12] Mozaffarzadeh M, Mahloojifar A, Nasiriavanaki M, Orooji M. “Model-based photoacoustic image reconstruction using compressed sensing and smoothed L_0 norm.” Photons Plus Ultrasound: Imaging and Sensing 2018 2018 Feb 22 (Vol. 10494, p. 104943Z). International Society for Optics and Photonics.
- [C13] Mahdi Orooji, Mehdi Alilou, Niha Beig, Sagar Rakshit, Prabhakar Rajiah, Michael Yang, Frank Jacono, Robert Gilkeson, Philip Linden, Vamsidhar Velcheti, Anant Madabhushi, “A Combination of Shape and Texture Features Enables Discrimination of Benign Fungal Infection from Non-Small Cell Lung Adenocarcinoma on Chest CT”, 103rd Annual meeting of Radiological Society of North America (RSNA), Chicago, IL. Dec 2016
- [C14] Mahdi Orooji, Sagar Rakshit, Niha Beig, Mehdi Alilou, Nathan A. Pennell, James Stevenson, Marc A. Shapiro, Prabhakar Rajiah, Anant Madabhushi, Vamsidhar Velcheti, “Computerized Textural and Shape Analysis of Lung CT Enables Prediction of Extent of Tumor Infiltrating Lymphocytes (TIL) in Non-Small Cell Lung Cancer”, American Society of Clinical Oncology (ASCO) 2016 Annual Meeting, Chicago, IL, Jun 2016
- [C15] Sagar Rakshit, Mahdi Orooji, Niha Beig, Mehdi Alilou, Nathan A. Pennell, James Stevenson, Marc A. Shapiro, Prabhakar Rajiah, Anant Madabhushi, Vamsidhar Velcheti, “Radiomic Features on Baseline Non-Contrast CT Predict Clinical Benefit for Pemetrexed Based Chemotherapy in Metastatic Lung Adenocarcinoma”, American Society of Clinical Oncology (ASCO) 2016 Annual Meeting, Chicago, IL, Jun 2016
- [C16] Mahdi Orooji, Mehdi Alilou, Rachel Sparks, Mirabela Rusu, B Nicolas Bloch, Ernest Feleppa, Dean Barratt, Lee Ponsky, Anant Madabhushi, “A Combination of Radiomic Features from MRI and Ultrasound Appears to better predict presence of prostate cancer: Validation against whole mount pathology”, 24th Annual Meeting of International Society of Magnetic Resonance in Medicine (ISMRM), Singapore, May 2016
- [C17] Orooji, M.; Rusu, M.; Rajiah, P.; Yang, M.; Jacono, F.; Gilkeson, R.; Linden, P.; Madabhushi, A.; “Computer Extracted Texture Features on CT Predict Level of Invasion in Ground Glass Non-Small Cell Lung Nodules”, Radiological Society of North America (RSNA), Chicago, IL.

- [C18] Orooji, M., Sparks R.; Blohc, N.; Feleppad, E.; Barratte, D.; Madabhushia, A.; “Spatially Aware Expectation-Maximization (SpAEM): Application to Prostate TRUS Segmentation”, The International Society for Optics and Photonics (SPIE) Medical Imaging, San Diego, CA, Feb 2014
- [C19] Orooji, M.; Soltanmohammadi, E.; Naraghi-Pour, M.; “Evaluating the Effect of Co-Channel Interferer Signals in the Wireless Networks”, ICASSP 2013, Vancouver, Canada.
- [C20] Rad, M.; Orooji, M.; Mazloom, S.; Perkins, D.; Bayoumi, M.; “A Novel Clustering Paradigm for Key Pre-distribution: Toward a Better Security in Homogenous WSNs”, IEEE Consumer Communications and Networking Conference (CCNC) 2013, Nevada, USA.
- [C21] Orooji, M.; Soltanmohammadi, E.; Naraghi-Pour, M.; “Performance Analysis of Spectrum Monitoring for Cognitive Radios”, MILCOM, 2012, Orlando, Florida, USA.
- [C22] Soltanmohammadi, E.; Orooji, M.; Naraghi-Pour, M.; “Distributed Detection in Wireless Sensor Networks in the Presence of Misbehaving Nodes”, MILCOM, 2012, Orlando, Florida, USA.
- [C23] Soltanmohammadi, E.; Orooji, M.; Naraghi-Pour, M.; “Spectrum Monitoring for Cognitive Radios in Rayleigh Fading Channel”, MILCOM, 2012, Orlando, Florida, USA.
- [C24] Orooji, M.; Soosahabi, R.; Naraghi-Pour, M.; “Multi-Antenna Blind Spectrum Sensing for Cognitive Radios Using Path Correlations,” Global Telecommunications Conference (GLOBECOM), 2011, Houston, Texas.
- [C25] Orooji, M.; Mowlae, P.; Kahaei, M.H.; “Removing the GSC Noise Reduction deficiencies in Reverberant Environments by Proposing Joint AEC-GSC algorithm”, IEEE/ACS International Conference on Computer Systems and Applications 2007 (AICCSA '07).
- [C26] Orooji, M.; Jamali, Sh.; Analoui M.; Shahhoseini, H.Sh; “Pre-Authenticated Light Weight Single Sign On Protocol (PALWSSO)”, the 2nd International Conf. on Information & Knowledge Technology, May 2007.
- [C27] Mahale, P.M.B.; Orooji, M.; “Proposing SVS-PNLMS algorithm for sparse echo cancellation”, IEEE Sarnoff Symposium 2007.
- [C28] Taki, M.; Orooji, M.; “A simple algorithm to design irregular LDPC codes for finite length,” IEEE 10th International Conference on Communication systems (ICCS) 2006, Singapore.
- [C29] Orooji, M.; Beheshti, A.; “A Novel Image Subband Coding Scheme Based on Correlation of PR Decomposition Filter Outputs”, IEEE 2nd International Computer Engineering Conference, (ICENCO'06), Dec. 2006.
- [C30] Orooji, M.; Abolhassani, B.; “New Method for Estimation of Mobile Location Based on Signal Attenuation and Hata Model Signal Prediction”, IEEE 27th Annual International Conference of the Engineering in Medicine and Biology Society (IEEE-EMBS), Shanghai, China 2005.

US Patents

- [P1] "Computerized analysis of computed tomography (CT) imagery to quantify tumor infiltrating lymphocytes (tills) in non-small cell lung cancer (NSCLC)", A Madabhushi, V Velcheti, M Orooji, S Rakshit, M Alilou, N Beig, US Patent App. 15/613,751
- [P2] "Predicting response to pemetrexed chemotherapy in non-small cell lung cancer (NSCLC) with baseline computed tomography (CT) shape and texture features" A Madabhushi, V Velcheti, M Orooji, S Rakshit, M Alilou, N Beig, US Patent App. 15/612,467
- [P3] "Textural analysis of lung nodules", A Madabhushi, M Rusu, M Orooji, M Alilou, US Patent 9,595,103
- [P4] "Characterizing disease and treatment response with quantitative vessel tortuosity radiomics", A Madabhushi, M Orooji, M Rusu, P Linden, R Gilkeson, NM Braman, US Patent App. 15/226,148
- [P5] "Decision support for disease characterization and treatment response with disease and peri-disease radiomics", A Madabhushi, M Orooji, M Rusu, P Linden, R Gilkeson, NM Braman, US Patent App. 15/226,124

Selected Presentations and Talks

- 2016 "A Combination of Shape and Texture Features Enables Discrimination of Benign Fungal Infection from Non-Small Cell Lung Adenocarcinoma on Chest CT", Chicago, IL, Dec 2016
- 2015 "Evaluation of radiomic features on baseline CT scan to predict clinical benefit for pemetrexed based chemotherapy in metastatic lung adenocarcinoma", Chicago, IL, Dec 2015
- 2015 "Computerized Textural and Shape Analysis of Lung CT Enables Prediction of Extent of Tumor Infiltrating Lymphocytes in Non-Small Cell Lung Cancer", Chicago, IL, Dec 2015
- 2014 "Spatially Aware Expectation-Maximization (SpAEM): Application to Prostate TRUS Segmentation", SPIE image processing conference, San Diego, CA, Feb 2014
- 2013 "Binary Hypothesis Testing in the Presence of Unreliable Information"; Literary Guide, School of Engineering, Case Western Reserve University, Cleveland, OH
- 2013 "Seeing the Forest Tree by Tree: Super-Resolution Light Microscopy"; Literary Guide, School of Engineering, Case Western Reserve University, Cleveland, OH
- 2012 "Blind Spectrum Sensing", Electrical and Computer Engineering Seminar, LSU, Baton Rouge, LA
- 2011 "Multi-Antenna Blind Spectrum Sensing for Cognitive Radios Using Path Correlations", IEEE GLOBECOM 2011, Dec 2011, Houston, Texas, USA
- 2007 "Pre-Authenticated Light Weight Single Sign On Protocol", The 2nd International Conference on Information & Knowledge Technology, Tehran, Iran, May 2007
- 2006 "A Simple Algorithm to Design Irregular LDPC Codes for Finite Length", 10th IEEE International Conference on Communication systems (ICCS) 2006, Singapore
- 2005 "New Method for Estimation of Mobile Location Based on Signal Attenuation and Hata Model Signal Prediction", IEEE 27th Int. Conf. of Eng. in Medicine and Biology Society, Shanghai, China

Funding and Awards

- [G1] Linda K. Arena Endowed Award, Seidman Cancer Center, Cleveland, Ohio, USA.
Total award: **6500\$** for one year.
Role: Principal Investigator (PI)
- [G2] Postdoctoral Training Award, Congressionally Directed Medical Research Programs, “*Computerized Fusion of Multi Parametric Magnetic Resonance Imaging and Prostate Mechanical Imaging to Improve the Prostate Cancer Diagnosis and Prognosis*”,
Funding Opportunity Number: W81XWH-13-PCRP-PTA
Total grant: **124,199\$** for two years.
Role: Principal Investigator (PI)
- [G3] Idea Develop. Award, Congressionally Directed Med. Research Programs, “*Computer extracted CT features for distinguishing suspicious lung lesions with no, minimal, and significant invasion*”,
Funding Opportunity Number: W81XWH-13-LCRP-IDA
Total grant: **534,000\$** for two years.
Role: Point Person
- [G4] Military Communication Conference (MILCOM) 2012, Orlando, Florida
Total grant: **500\$**
Role: Principal Investigator (PI)
- [G5] Heul Perkins Doctoral Fellowship, LSU, Department of Electrical and Computer Engineering.
Total grant: **184,000\$** (20,000\$ stipend+23,000\$ tuition award per year) for 4-years.
Role: Principal Investigator (PI)