Department of Electrical and Computer Engineering
ACADEMIC RESUME
Hamid Farrokhi
Available on-line at https://cv.birjand.ac.ir/hfarrokhi/fa

PERSONAL DATA
Associate Professor
Department of Electrical and Computer Engineering
University of Birjand
Birjand, PO Box: 97175/615, Postal Code: 9717434765
IRAN
Phone: +98-56-32202049, Cell: +98-915-9610515
Birth: Sept. 16, 1966, Birjand, Iran

EDUCATION
Ph.D., University of Regina, Regina, Canada, 2006, Electrical Engineering (Telecommunications)

M.Sc., Iranian University of Science and Technology (IUST), 1996, Electrical Engineering (Electronics)

B.Sc., Sharif University of Technology (SUT), 1988, Electrical Engineering (Telecommunications)

PROFESSIONAL EXPERIENCE
University of Birjand, 2014- , Associate Professor of Electrical Engineering, 2006-2014, Assistant Professor of Electrical Engineering, 1998-2014, Academic Staff (Instructor), 1991-1998, Instructor and Research Engineer.

Teaching & Research Assistant, Faculty of Engineering, University of Regina, Regina, Canada, September, 2001- May, 2006.

Head of the Electronics and Communication Group, Faculty of Engineering, University of Birjand, Birjand, Iran, February 97-March 99.

Research Engineer, Iranian Telecommunication Research Center, Tehran, Iran, September 1990- February 1991.

PUBLICATIONS
Books

Zeraatkar Moghaddam, J., Farrokhi, H., *Engineering Optimization using MATLAB (Theory and Practice)*, 1st edition, (2018), University of Birjand publications.

Journal Papers

1. Performance improvement of multi user cognitive relay networks with full-duplex cooperative sensing and energy harvesting Turkish Journal of Electrical Engineering and Computer Sciences

٢. تخصیص عادلانه منابع در سیستم چندپخشی مبتنی بر MIMO-OFDM با استفاده از الگوریتم GA/PSO مهندسی برق و الکترونیک ایران

3. Wireless sensor network localization using new heuristic optimization algorithms , International Journal of Ultra Wideband Communications and Systems

4. Throughput optimization using simultaneous sensing and transmission in energy harvesting cognitive radio networks International Journal of Communication Systems

5. Energy consumption minimization and throughput improvement in cognitive radio networks by joint optimization of detection threshold, sensing time and user selection Wireless Networks

6. Adaptive Rateless Coding Technique for Data Dissemination in Multichannel Multiuser Cognitive Radio Networks Wireless Personal Communications

7. مدیریت تداخل در شبکه های رادیوشناختگر با استفاده از شکل دهی پرتو همکارانه تحت اطلاعات غیر دقیق مهندسی برق و الکترونیک ایران کانال

8. Joint Clustering Relay Selection and Beamforming in Cooperative Cognitive Radio Networks Wireless Personal Communications

9. Time varying frequency fading channel tracking in ofdm plnc system using kalman filter, Iranian Journal of Electrical and Electronic Engineering

10. Maximum Throughput of Cognitive Relay Systems International Journal of Advanced Biotechnology and Research

11. Optimal cooperative beamforming design in cognitive radio networks with multiple secondary user links International Journal of Communication Systems

12. Optimal received SINR balancing based on cooperative beamforming in cognitive radio networks International Journal of Communication Systems

13. Optimal Power Allocation in Spatial MIMO Channel using Heuristic Algorithms Majlesi Journal of Electrcial Engineering

١٤. بررسی تاثیر فاصله ی بین آنتن ها در فرستنده و گیرنده بر روی ظرفیت کانالMIMO مهندسی برق و الکترونیک ایران

15. Optimal and suboptimal adaptive algorithms for rate and power transmission in OFDM-based Cognitive Radio systems, COMPUTERS & ELECTRICAL ENGINEERING

16. Reza Khederzadeh, Hamid Farrokhi, "Adaptive Rate and Power Transmission in Spectrum-Sharing Systems With Statistical Interference Constraint," *IET Communications*., 2014, Vol. …., Iss. ……, pp. ……………

17. D. Shahbaztabar, H. Farrokhi, "A Comparison between Performances of Orthogonal Filter Banks of Wavelet and Fourier Transforms in OFDM-Based Systems," *Journal of Soft Computing and Information Technology (JSCIT)*, Vol.1, No.3, Dec. 2012.

Babol Noushirvani University of Technology - Iranian Association of Information and Communication Technology.

۱۸. بهینه سازی رقابتی در کانالهای تداخلی انتخابگر-فرکانسی گوسی با استفاده از نظریه ی بازیها. جلد اول شماره سوم سال ۲۰۱۲

," *Journal of Soft Computing and Information Technology (JSCIT)*, Vol.1, No.3, Dec. 2012. License holder: Babol Noushirvani University of Technology - Iranian Association of Information and Communication Technology.

19. M. Rezay and H. Farrokhi, "A New Multi-objective Optimization Method for Power Control in CDMA Cellular Systems," *Journal of Iranian Association of Electrical and Electronics Engineers (IAEEE).*

20. Hamid FARROKHI, Mostafa REZAYI, "An improved distributed power-control scheme for cellular mobile systems," *Turkish Journal of Electrical & Computer Science*, Vol.20, No.1, 2012. doi:10.3906/elk-1006-473.

21. HAMID FARROKHI, "Design and Performance Evaluation of an Indoor Ranging System Using Audio Chirp and MUSIC Algorithms," *WSEAS TRANSACTIONS on COMMUNICATIONS*, Issue 9, Vol.7., Sept. 2008, ISSN: 1109-2742.

22. M. Rezayi, H. Farrokhi, "An Efficient Multiobjective Power Control Algorithm for Wireless CDMA Networks," *Modares Journal of Electrical Engineering (MJEE).*

Conference Papers

1. H. Farrokhi, S. M. R. Mosavi, A. Nakhaei, " Prediction of DGPS Corrections Using Kalman Filter," The 30th Asian Conference on Remote Sensing, ACRS2009, Beijing, China, 18th-23rd Oct. 2009, www.acrs2009.org, ID#D0770825.

2. Ron Palmer, Hamid Farrokhi, Jenny Jin Xie, "Guidance Error Reduction Using a Combination of GPS and a Single Radial," *AIC 2002 Meeting CSAE/SCGR Program*, Saskatoon, Saskatchewan, July 14 - 17, 2002.

3. Hamid Farrokhi and Ron Palmer, "Determination of chip rate and center frequency for a spread spectrum acoustic ranging system," *Proceedings of the 2002 IEEE Canadian Conference on Electrical & Computer Engineering*, Winnipeg, Canada, May 2002.

4. Hamid Farrokhi, Ronald J. Palmer" The designing of an indoor acoustic ranging system using the audible spread spectrum LFM (chirp) signal," Canadian conference on Electrical and Computer Engineering (*CCECE*), May 2005, Saskatoon, Canada.

5. Hamid Farrokhi, "TOA estimation using MUSIC super-resolution techniques for an indoor audible chirp ranging system," *IEEE International Conference on Signal Processing and Communications (ICSPC 2007)*, 24-27 Nov. 2007, Dubai, UAE.

6. Mostafa Rezayi, Hamid Farrokhi "Performance evaluation of an improved distributed power-control scheme for cellular mobile systems," *IEEE 2nd Pacific-Asia*

Conference on Circuits, Communications and System (PACCS), 1-2 Aug., 2010, Beijing, China.

7. S. Ali. Hosseini, Hamid Farrokhi, "The impacts of network size on the performance of routing protocols in mobile ad-hoc networks," *IEEE 2ⁿᵈ Pacific-Asia Conference on Circuits, Communications and System (PACCS)*, 1-2 Aug., 2010, Beijing, China.

8. Hamid Farrokhi, "Performance of Root-MUSIC on TOA Estimation for an Indoor Spread Spectrum Ranging System*," 12th WSEAS International Conference on communications, Heraklion, Greece, July 23-25, 2008.*

۹. ''الگوریتم ژنتیک در بهینه سازی تخصیص توان سیستمهای MIMO-OFDM تحت شبکه های رادیو شناختگر (CR)'' ؛ سمیه خسروآزاد، دکتر ناصر ندا و دکتر حمید فرخی؛ بیست و یکمین کنفرانس مهندسی برق ایران (ICEE2013)؛ ۲۴-۲۶ اردیبهشت ۱۳۹۲ (May 16-18, 2012)؛ دانشگاه فردوسی مشهد؛ ایران.

۱۰. ''معرفی و ارزیابی سه الگوریتم بلوکی برای بهبود سرعت همگرایی الگوریتم های کنترل تپان در سیستم های سلولار CDMA'' مصطفی رضایی؛ حمید فرخی؛ نوزدهمین کنفرانس مهندسی برق ایران (*ICEE2010*)؛ ۲۷-۲۹ اردیبهشت ۱۳۹۰ (May 17-19, 2010)؛ دانشگاه صنعتی امیرکبیر؛ تهران؛ ایران.

۱۱. ''تخمین کور کانال بر اساس زیرفضا در سیستم های OFDM با استفاده از حامل های مجازی'' زاهد عزیزی؛ حمید فرخی؛ بیستمین کنفرانس مهندسی برق ایران (ICEE2012)؛ ۲۶-۲۸ اردیبهشت ۱۳۹۱ (May 16-18, 2011)؛ دانشکده فنی دانشگاه تهران؛ تهران؛ ایران.

۱۲. ''الگوریتم کنترل توان توزیعی با بهینه سازی چند منظوره با بهبود ثابت در سیستم های رادیویی سلولار '' CDMA مصطفی رضایی؛ حمید فرخی؛ بیستمین کنفرانس مهندسی برق ایران (ICEE2012)؛ ۲۶-۲۸ اردیبهشت ۱۳۹۱ (May 16-18, 2012)؛ دانشکده فنی دانشگاه تهران؛ تهران؛ ایران.

۱۳. ''تخصیص منابع با ترکیب مدولاسیون وفقی و تخصیص توان در شبکه های رادیو شناختگر'' رضا خدرزاده؛ عبدجبار حسنوند؛ حمید فرخی؛ بیستمین کنفرانس مهندسی برق ایران (ICEE2012)؛ ۲۶-۲۸ اردیبهشت ۱۳۹۱ (May 16-18, 2011)؛ دانشکده فنی دانشگاه تهران؛ تهران؛ ایران.

۱۴. ''پیش بینی تصحیحات GPS تفاضلی با استفاده از فیلتر کالمن'' سید محمدرضا موسوی؛ حمید فرخی؛ آزاده نخعی؛ همایش سراسری سامانه اطلاعات مکانی (GIS)؛ انجمن علمی فناوری اطلاعات و ارتباطات ودجا؛ ۱-۲ آذرماه ۱۳۸۸؛ دانشگاه صنعتی مالک اشتر؛ تهران؛ ایران.

۱۵. '' بررسی عملکرد سیستم های رادیوشناختگر مبتنی بر OFDM غیرهمجوار و MC-CDMA غیرهمجوار برای دستیابی به طیف دینامیکی'' دامون شهبازتبار؛ حمید فرخی؛ چهارمین کنفرانس مهندسی برق و الکترونیک ایران (ICEEE2012)؛ ۷-۹ شهریور ۱۳۹۱؛ دانشگاه آزاد اسلامی گناباد؛ ایران.

Research Projects

Farrokhi, H., "Design and Implementation of a Wi-Fi Modem for Simultaneous Transmission and Reception of Sound Signals," University of Birjand, *Project No. 310*, (August 2018).

Farrokhi, H., "Design and Implementation of a Power Line Modem (PLM) using intel-8051 Microcontroller," NikPajooh Inc. Tehran/Iran, (Macrh 2000).

Farrokhi, H., Farsi H., "Design and Implementation of a PC Interface Card for the Polarograph Analyzer E506," University of Birjand, (Sept. 1999).

Farrokhi, H., "Design and Implementation of a Multiplexer Interface Card for 9600 bps Modem," Communication Research Center, Tehran/Iran, (April 91).

GRADUATE STUDENT ADVISING
<u>Doctoral Graduates</u>

Moradi, A., "Throughput Improvement using Simultaneous Sensing and Transmissio in Energy Harvesting Cognitive Radio Systems," 07/2019, (Major advisor).

Zeraatkar Moghaddam, J., "Beamforming in Cognitive Radio Networks," 09/2016, (Major advisor).

<u>Masters Graduates (most recent 5 out of 20)</u>

Ghassemi S., (MSc), "Cooperative spectrum sensing using directional antennas in cognitive radio networks," Oct., 2019 (Major advisor).

Rahbar A., (MSc), "Automatic intrapulse modulation classification of advanced LPI radar waveforms," Jan., 2019, (Major advisor).

Pakzad S., (MSc), "Analysis of a hybrid overlay/underlay data transmission method for cognitive radio networks with statistical QoS provisioning," Jan., 2019, (Major advisor).

Mousavi S. E., (MSc), "Increasing throughput using simultaneous sensing and transmission in cognitive radio networks," Feb., 2018, (Major advisor).

Mirahmadi E., (MSc), "Performance evaluation of an improved MC-CDMA-based hybrid cognitive radio network," Jan. 2017, (Major advisor).

<u>Current Graduate Advising</u>

Format: Names (degree sought), "Dissertation/Thesis Topic", Expected Graduation Month/Year, (Advisor/Committee status).

Sample: Schrimsher, S.R., (MENGR), "Triaxial Compressive Strength of Brick Cores," May 1997, (Committee member).

TEACHING
<u>Courses Taught</u>

Graduate:
- Information Theory and Coding
- Advanced Theory of Communications

- Spread Spectrum Systems
- Special Topics in Communications

Undergraduate:
- Electronics I & II and Labs
- Digital Circuits and Lab
- Microprocessors and Lab
- Pulse Techniques and Lab
- Communication Circuits
- English for Electrical Engineering
- Applied Mathematics
- Students' Projects Supervision

MISCELLANEOUS
<u>Scholarships & Awards</u>

Scholarship awarded by The Ministry of Science, Research, and Technology of Iran for Ph.D. studies, Sept. 2001-Nov. 2005.

Scholarship awarded by The Ministry of Science, Research, and Technology of Iran for MSc. studies, Sept. 93-Sept. 96.

Graduate Scholarship awarded by The Faculty of Graduate Studies and Research, University of Regina, Jan. 2004-Apr. 2004.

Graduate Research Award from The Faculty of Graduate Studies and Research, University of Regina, May 2002-Aug. 2002.

Updated: November 27, 2019