

Seyed Pooya Shariatpanahi (Ph.D.)

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Position

- **Post-Doctoral Research Fellow** (April 2013, present)
School of Computer Science
Institute for Research in Fundamental Sciences (IPM)

Education

- **PhD** (2008 to 2013, GPA: 18.7/20)
Communication Systems
Electrical Engineering Department, Sharif University of Technology
Thesis Title: "Information Flow in Random Wireless Networks"
- **MSc** (2006 to 2008, GPA: 17.5/20)
Microwave and Optical Communication Systems
Electrical Engineering Department, Sharif University of Technology
Thesis Title: "Effects of Antenna Characteristics on Multiple-Input Multiple-Output Wireless Systems"
- **BSc** (2002 to 2006, GPA 17.8/20)
Communication Systems
Electrical Engineering Department, Sharif University of Technology

Awards and Honors

- PhD Award of National Elite Association, 2008.
- Sharif University Master of Science Award as an Exceptional Talent Student, 2006.
- Boston University Dean's Research Fellowship, 2006.
- Gold Medal, National Physics Olympiad, 2001.

Research Interests

- Network Theory
- Information Theory
- Wireless Communications
- Random Networks
- Complex Systems
- Big Data Analytics
- Machine Learning
- Mathematical Biology

Teaching Experience

- Instructor
 - Fundamentals of Electrical Engineering
- Teaching Assistant
 - Signals and Systems
 - Communication Systems I (Analog Communication Systems)
 - Communication Systems II (Digital Communication Systems)
 - Wireless Communications
 - Fields and Waves

Professional Activities

- Juror of 1st and 3rd Tournament of Iran Physics Cup, KAFAA, Tehran, Iran, 2013 and 2015.
- Scientific Committee Member of International Physics Olympiad, IPhO 2007, Isfahan, Iran.
- Scientific Committee Member of Broadband Communications and Digital Video Broadcast Seminar, BCDVB, Sharif University of Technology, Tehran, Iran, 2005.

Invited Talks

1. “Capacity Analysis of Ad-Hoc Wireless Networks”, Conference on Emerging Wireless Mobile Communication Networks (WMCN), Sharif University of Technology, Tehran, Iran, Oct. 17-19, 2011.
2. “Multi-Server Coded Caching”, 4th IPM, NUS Workshop on Computer Science, 9 March, 2015, Tehran, Iran.

Publications

Journal Papers

1. **S. P. Shariatpanahi**, H Shah-Mansouri, and B. H. Khalaj, “Caching Gain in Interference Limited Wireless Networks”, IET Communications, vol. 9, no. 10, pp. 1269-1277, 2015.
2. **S. P. Shariatpanahi**, B. H. Khalaj, K. Alishahi, and H Shah-Mansouri “Throughput of Large One-hop Ad-hoc Wireless Networks with General Fading,”, IEEE Transactions on Vehicular Technology, vol. 64, no. 7, pp. 3304-3310, 2015.
3. **S. P. Shariatpanahi**, B. H. Khalaj, and H Shah-Mansouri, “Power Allocation Scheme in TDMA Distributed MIMO Interference Channels”, IET Communications, vol. 7, no. 5, pp. 391 – 396, March 2013.
4. **S. P. Shariatpanahi**, B. H. Khalaj, and H Shah-Mansouri, and J. Del Ser, “Analysis of Quantization Effects on the Performance of Cooperative MIMO Techniques in Wireless Networks”, EURASIP Journal on Wireless Communications and Networking, 2012:290 doi:10.1186/1687-1499-2012-290.
5. H. Shah-Mansouri, B.H. Khalaj, **S. P. Shariatpanahi**, J. Del Ser, and Susana Perez-Sanchez “Asymptotic Analysis of Flooding in CSMA-based Large Wireless Networks”, EURASIP Journal on Wireless Communications and Networking, 2012, 2012:312 doi:10.1186/1687-1499-2012-312.
6. **S. P. Shariatpanahi**, B. H. Khalaj, K. Alishahi, and H Shah-Mansouri, “One-Hop Throughput of Wireless Networks with Random Connections”, IEEE Wireless Communications Letters, vol. 1, pp. 205-208, Jun 2012.
7. **S. P. Shariatpanahi**, B.H. Khalaj, A.A. Shishegar and H.S. Rad, “Decorrelating closely spaced antennas by pattern design in uniform scattering environments”, IET Microwaves, Antennas & Propagation, vol. 4, pp. 1903-1909, Nov 2010.

Conference Papers

1. **S. P. Shariatpanahi**, S. A. Motahari, and B. H. Khalaj “Content Delivery via Multi-Server Coded Caching in Linear Networks”, to appear in IEEE Information Theory Workshop (ITW), Oct. 2015, South Korea.
2. **S. P. Shariatpanahi**, H. Shah-Mansouri, and B. H. Khalaj “Caching Gain in Wireless Networks with Fading: A Multiuser Diversity Perspective”, in Proc. of IEEE WCNC 2014, Istanbul, Turkey.

3. **S. P. Shariatpanahi**, B. H. Khalaj, and H. Shah-Mansouri, "Achievable Throughput of Wireless Networks with Local Traffic", in Proc. of IEEE WCNC 2014, Istanbul, Turkey.
4. H. Shah-Mansouri, B. H. Khalaj, and **S. P. Shariatpanahi**, "On the Route Discovery Rate of Flooding in Large Wireless Networks", in Proc. of IEEE PIMRC 2012, Sydney, Australia.
5. **S. P. Shariatpanahi** and B. H. Khalaj "Analysis of Quantization Effects on Performance of Hierarchical Cooperation Schemes in Ad-Hoc Wireless Networks", 36th IEEE Conf. on Local Computer Networks (LCN), Bonn, Germany, 2011.
6. **S. P. Shariatpanahi** and B. H. Khalaj " A Novel Approach to Power Allocation in Wireless Ad Hoc Networks", ACM MsWIM 2010 (Poster Presentation) and ACM PM2HW2N 2010 (Oral Presentation), Bodrum, Turkey, Oct 2010.
7. **S. P. Shariatpanahi**, A. A. Shishegar, B. H. Khalaj, A. H. Salavati, and H. S. Rad, "Low SNR regime capacity analysis of MIMO systems using directional antennas", International Symposium on Telecommunications (IST), IST 2008, Tehran, Iran.
8. **S. P. Shariatpanahi**, B.H. Khalaj, A.A. Shishegar and H.S. Rad, "Decorrelating closely-placed antennas by pattern design in uniform scattering environments", International Conference on Advanced Communication Technology, ICACT,2008, Korea.
9. HS Rad, S Gazor and **S. P. Shariatpanahi**, "Non-fixed scatterers and their effects on MIMO multicarrier fading communication channels", GLOBECOM - IEEE Global Telecommunications Conference, Washington, 2007.
10. H. F Aarabi and **S. P. Shariatpanahi**, "Diversified Broadcasting in Wireless Networks", ISCTA 2007, Ambleside, England.
11. **S. P. Shariatpanahi** and H.F. Aarabi, "On reliable routing in wireless networks with diversity", 4th IEEE and IFIP International Conference on Wireless and Optical Communications Networks, WOCN 2007, Singapore.
12. **S. P. Shariatpanahi** and B.H. Khalaj, "Delay-aware scheduling in heterogeneous multiuser systems", IEEE Workshop on Signal Processing Advances in Wireless Communications, SPAWC, 2006, France.
13. **S. P. Shariatpanahi**, B Babadi and B.H. Khalaj "Feedback bit reduction for antenna selection methods in wireless systems", 13th IEEE International Conference on Networks jointly held with the 2005 7th IEEE Malaysia International Conference on Communications, Kuala Lumpur, Malaysia, 2005.
14. B. Babadi, **S. P. Shariatpanahi** and B. H. Khalaj "An adaptive feedback bit allocation method for wireless systems with transmit diversity", 1st International Conference on Computers, Communications and Signal Processing, CCSP 2005, Kuala Lumpur, Malaysia, 2005.