

# Mohammad Reza Javan

## Curriculum Vitae



### Personal Information

- Place and date of birth: Mashhad, Iran; 21 March 1981
- Marital Status: Married
- Nationality: Iranian
- Email: javan1378 [at] yahoo [dot] com

### Education

2007 - 2012 **Ph.D. in Electrical Engineering, Communication Systems**, *Tarbiat Modares University, Department of Electrical and Computer Engineering*, Tehran, Iran.

**Ph.D. Thesis**, *Distributed Joint and Efficient Allocation of Resources in Wireless Data Networks*, Supervisor: Dr. Ahmad Reza Sharafat.

2003 - 2006 **M.Sc. in Electrical Engineering, Electronics**, *Sharif University of Technology, Department of Electrical Engineering*, Tehran, Iran.

**M.Sc. Thesis**, *Moving Object Detection and its Application to Video Compression*, Supervisor: Dr. Mahmoud Tabandeh and Dr. Farrokh Marvasti.

1999 - 2003 **B.Sc. in Electrical Engineering, Electronics**, *Shahid Beheshti University, Department of Electrical and Computer Engineering*, Tehran, Iran.

**B.Sc. Project**, *FSK Demodulator Design with AD-PLL and its implementation on FPGA ICs*, Supervisor: Dr. Omid Hashemipour.

### Research Interests

- 5G and Beyond Wireless Network Design
- Unmanned Aerial Vehicle (UAV) Communications Network Design
- Big Data
- Internet of Things
- Application of Learning Methods in Wireless Network Design
- Optimization Methods and Game Theory for Wireless Network Design
- Molecular Communications

### Professional Experiences

- Feb. 2006 - **Iran Telecommunication Research Center (ITRC)**, .  
Dec. 2009
- Dec. 2009 - **Wireless Innovation Lab: Tarbiat Modares Unity - Mobile Communication of Iran, Tehran (MCI)**, .  
Oct. 2012
- Since Sept. **Shahrood University of Technology, Shahrood, Semnan, Iran**, .  
2012
- Associate Professor, Communications.**

## Technical Projects and Activities

- **5G Road Map, Wireless Innovation Lab: Tarbiat Modares University - Mobile Communication of Iran, Tehran (MCI), Technical Advisor and Cooperator, 2018–Current.**
- **Talks and Workshsops on 5G Network Design, Wireless Innovation Lab: Tarbiat Modares University - Mobile Communication of Iran, Tehran (MCI), 2019-2019.**
- **Efficient Resource Allocation in Software Defined Wireless Networks, DFG Program: Iran-Germany, Wireless Innovation Lab: Tarbiat Modares University, Iran - TU Dresden, Germany, 2019–Current.**
- **AI-Based Resource Management for Software-defined Hybrid Next Generation Indoor Networks, TUBITAK Program: Iran-Turkey, 2019–Current.**
- **5G Optimization Day Workshop, ICT Research Institute (ITRC) , 2019.**
- **5G Testbed, Wireless Innovation Lab: Tarbiat Modares University - Mobile Communication of Iran, Tehran (MCI), 2018.**
- **Radio Resource Allocation in NOMA and mm-Wave Based 5G Networks with Coverage Probability Constraint, Shahrood University of Technology - Iran national Science foundation: Science Deputy of Presidency, Executive, 2016–2018.**
- **Quantized Secure Resource Allocation in Relay-Assisted OFDMA networks Based on Imperfect CDI, Shahrood University of Technology - Iran national Science foundation: Science Deputy of Presidency, Executive, 2014–2016.**
- **Software Development for Monitoring and Adjusting BSS and NSS Parameters in GSM Networks, Wireless Innovation Lab: Tarbiat Modares University - Mobile Communication of Iran, Tehran (MCI), Technical Manager and Cooperator, 2011–2013.**
- **Software Development for KPI Evaluation in GSM Networks, Wireless Innovation Lab: Tarbiat Modares University - Mobile Communication of Iran, Tehran (MCI), Technical Manager and Cooperator, 2009–2011.**
- **Software Development for Frequency Hopping in GSM Networks, Wireless Innovation Lab: Tarbiat Modares University - Mobile Communication of Iran, Tehran (MCI), Technical Manager and Cooperator, 2009–2011.**
- **Network Security: Architecture and Designs, Iran Telecommunication Research Center (ITRC), Cooperator, 2008–2009.**

- Next Generation Networks: Designs and Architecture, Iran Telecommunication Research Center (ITRC), Cooperator, 2006–2008.

## Teaching Experiences

### Graduate

- Random Processes
- Wireless Communications
- Information Theory

### Under Graduate

- Communications I
- Data Communications Networks
- Digital Systems
- Statistics and Probabilities
- C Programming

## Publications and Patents

### Patents

- Iran Patent **Mohammad Reza Javan and Ahmad Reza Sharafat**, *A Protocol for joint and Distributed Allocation of Data Rate, Transmit Power, and Base Station Using pricing Mechanism to Maintain Users' QoS*, Patent No. 69618.
- Iran Patent **Mohammad Reza Javan and Ahmad Reza Sharafat**, *Distributed and Opportunistic Power Control Technique for Multi-carrier Interference Channels*, Patent No. 63696.

### Journal Papers (Published)

- Journal Paper **Arman Azizi, Saeedeh Parsaeefard, Mohamad Reza Javan, Nader Mokari, and Halim Yanikomeroglu**, *"Profit Maximization in 5G+ Networks with Heterogeneous Aerial and Ground Base Stations"*, To appear in *IEEE Transactions on Mobile Computing*, 2019.
- Journal Paper **Sepehr Rezvani, Nader Mokari, Mohammad Reza Javan, and Eduard Jorswieck**, *"Fairness and Transmission-Aware Caching and Delivery Policies in OFDMA-Based HetNets"*, To appear in *IEEE Transactions on Mobile Computing*, 2019.

- Journal Paper **Farshad Rostami, Mohammad Reza Javan**, "Outage and Delay Performance of Content Caching in Two-Tier Cooperative Cellular Networks", To appear in *IET Communications*, 2019.
- Journal Paper **Sepehr Rezvani,, Saeedeh Parsaeefard, Nader Mokari, Mohamad Reza Javan, and Halim Yanikomeroglu**, "Cooperative Multi-Bitrate Video Caching and Transcoding in Multicarrier NOMA-Assisted Heterogeneous Virtualized MEC Networks", *IEEE Access*, vol. 7, 2019.
- Journal Paper **Mohammad Moltafet, Saeedeh Parsaeefard, Mohammad. R Javan, Nader Mokari**, "Robust Radio Resource Allocation in MISO-SCMA Assisted C-RAN in 5G Networks", *IEEE Transactions on Vehicular Technology*, vol. 68, no. 6, pp. 5758-5768, June 2019.
- Journal Paper **Mohammad Moltafet, Paeiz Azmi, Mohammad. R Javan, Nader Mokari, and Ali Mokdad**, "Optimal Radio Resource Allocation to Achieve Low BER in PD-NOMA-Based Heterogeneous Cellular Networks", *Transactions on Emerging Telecommunications Technologies*, vol. 30, no. 5, May 2019.
- Journal Paper **Mohammad Moltafet, Paeiz Azmi, Nader Mokari, Mohammad Reza Javan, and Ali Mokdad**, "Optimal and fair energy efficient resource allocation for energy harvesting enabled-PD-NOMA based HetNets", *IEEE Transactions on Wireless Communications*, vol. 17, no. 3, pp. 2054-2067, March 2018.
- Journal Paper **Mohammad Moltafet<sup>1</sup>, Nader Mokari, Mohammad R. Javan, Hamid Saeedi, and Hossein Pishro-Nik**, "A new multiple access technique for 5G: Power domain sparse code multiple access (PSMA)", *IEEE Access*, vol. 6, pp. 747-759, 2018.
- Journal Paper **Mohammad Moltafet, Nader Mokari Yamchi, Mohammad Reza Javan, and Paeiz Azmi**, "Comparison study between NOMA and SCMA", *IEEE Transactions on Vehicular Technology*, vol. 67, no. 2, pp. 1830-1834, February 2018.
- Journal Paper **Mohammad Reza Javan and Sonia Naderi**, "Outage analysis of the link selection for secure d2d communications with untrusted relay", *Turkish Journal of Electrical Engineering and Computer Sciences*, vol. 25, no. 5, pp. 3787-3797, October 2017.
- Journal Paper **Faezeh Alavi, Nader Mokari, Mohammad R. Javan, and Kanapathippillai Cumanan**, "limited feedback scheme for device to device communications in 5g cellular networks with reliability and cellular secrecy outage constraints", *IEEE Transactions on Vehicular Technology*, vol. 66, no. 9, pp. 8072-8085, September 2017.
- Journal Paper **Mohammad R. Abedi, Nader Mokari, Mohammad R. Javan, and Halim Yanikomeroglu**, "Secure communication in OFDMA based cognitive radio networks: An incentivized secondary network coexistence approach", *IEEE Transactions on Vehicular Technology*, vol. 66, no. 2, pp. 1171-1185, February 2017.
- Journal Paper **Mohammad R. Javan, Nader Mokari, Faezeh Alavi, and Ali Rahmati**, "Resource allocation in decode-and-forward cooperative communications networks with limited rate feedback channel", *IEEE Transactions on Vehicular Technology*, vol. 66, no. 1, pp. 256-267, January 2017.
- Journal Paper **Mohammad R. Abedi, Nader Mokari, Mohammad R. Javan, and Halim Yanikomeroglu**, "Limited rate feedback scheme for resource allocation in secure relay-assisted OFDMA networks", *IEEE Transactions on Wireless Communications*, vol. 15, no. 4, pp. 2604-2618, April 2016.

- Journal Paper **Mohammad Reza Javan and Ahmad Reza Sharafat**, “*Interference-dependent opportunistic power control for multi-carrier interference channels*”, *IEEE Transactions on Vehicular Technology*, vol. 63, no. 2, pp. 953-958, February 2014.
- Journal Paper **Mohammad Reza Javan and Ahmad Reza Sharafat**, “*Distributed joint resource allocation in primary and cognitive wireless networks*”, *IEEE Transactions on Communications*, vol. 61, no. 5, pp. 1708-1719, May 2013.
- Journal Paper **Mohammad Reza Javan and Ahmad Reza Sharafat**, “*Efficient and distributed SINR-based resource allocation and base station assignment in wireless networks*”, *IEEE Transactions on Communications*, vol. 59, no. 12, pp. 3388-3399, Dec. 2011.
- Journal Paper **Nader Mokari, Mohammad Reza Javan, and Keivan Navaie**, “*Cross-layer resource allocation in OFDMA systems for heterogeneous traffic with imperfect CSI*”, *IEEE Transaction on Vehicular Technology*, vol. 59, no. 2, pp. 1011-1017, Feb 2010.

### Conference Papers

- Conference Paper **Mohammad R. Abedi, Nader Mokari, Mohammad R. Javan, and Eduard A. Jorswieck**, “*Robust and Secure Content Delivery in Energy and Spectrum Efficient Next-Generation Networks*”, in *IEEE Wireless Communications and Networking Conference (WCNC)*, 9-13 December 2018, Abu Dhabi, UAE.
- Conference Paper **Saeed Sheikhzadeh, Mohammad R. Javan, and Nader Mokari**, “*Antenna selection for secure robust communication in MISO-OFDMA based heterogeneous cellular networks*”, in *IEEE Globecom Workshops (GC Wkshps)*, 15-18 April 2018, Barcelona, Spain.
- Conference Paper **Mohammed R. Javan and Nader Mokari**, “*Resource Allocation in Secure Full-Duplex D2D Communications Using Zero Forcing Beamforming*”, in *The 26th Iranian Conference on Electrical Engineering (ICEE 2018)*, 8-10 May 2018, Mashhad, Iran.
- Conference Paper **Sepehr Rezvani, Nader Mokari, and Mohammad R. Javan**, “*Uplink Throughput Maximization in OFDMA-Based SWIPT Systems with Data Offloading*”, in *The 26th Iranian Conference on Electrical Engineering (ICEE 2018)*, 8-10 May 2018, Mashhad, Iran.
- Conference Paper **M. Moltafet, N. Mokari, M. R. Javan, H. Saeedi, and H. Pishro-Nik**, “*PSMA for 5G: Network throughput analysis*”, in *IEEE 28th Annual International Symposium on Personal, Indoor, and Mobile Radio Communications (PIMRC)*, 8-13 Oct 2017, Montreal, Canada.
- Conference Paper **Saeed Sheikhzadeh, Mohammed R. Javan, and Nader Mokari**, “*Radio resource allocation for physical-layer security in OFDMA based HetNets with unknown mode of adversary*”, in *2017 Iran Workshop on Communication and Information Theory (IWCIT)*, 3-4 May 2017, Tehran, Iran.
- Conference Paper **Mohammed R. Javan, Saeed Sheikhzadeh, and Nader Mokari**, “*Resource allocation for maximizing secrecy rate in presence of active eavesdropper*”, in *8th International Symposium on Telecommunications (IST)*, 27-28 September 2016, Tehran, Iran.
- Conference Paper **Mohammed R. Javan**, “*Pricing for Distributed Power Control in Multi-Carrier Systems*”, in *The 22nd Iranian Conference on Electrical Engineering (ICEE 2014)*, 20 - 22 May 2014, Tehran, Iran.

- Conference Paper **Mohammed R. Javan and Nader Mokari**, "Resource allocation for maximizing secrecy rate in presence of active eavesdropper", in *The 22nd Iranian Conference on Electrical Engineering (ICEE 2014)*, 20 - 22 May 2014, Tehran, Iran.
- Conference Paper **Nader Mokari, Mohammed R. Javan, and Keivan Navaie**, "Resource allocation based on channel distribution information for elastic and streaming traffic in OFDMA networks: a heuristic algorithm", in *Proceedings of the 70th IEEE Vehicular Technology Conference*, 20 - 23 September 2009, Anchorage, Alaska.
- Conference Paper **Mohammad Reza Javan, Seyed Mahdi Bouzari, and Mahmoud Tabandeh**, "Load Balancing in UTRAN by Bipartite Graphs", *4th European Conference on Circuits and Systems for Communications (ECCSC 2008)*, 10-11 July 2008.
- Conference Paper **Mohammad Reza Javan, Seyed Mahdi Bouzari, and Ahmad Salahi**, "Efficient algorithm for load balancing", *International Symposium on Signals, Circuits and Systems (ISSCS 2007)*, 13-14 July 2007.
- Conference Paper **Mohammad Reza Javan, Seyed Mahdi Bouzari, and Ahmad Salahi**, "Fast and efficient Extraction of moving objects", *International Symposium on Signals, Circuits and Systems (ISSCS 2007)*, 13-14 July 2007.
- Conference Paper **Mohammad Reza Javan, Seyed Mahdi Bouzari, and Ahmad Salahi**, "An efficient object Segmentation Algorithm for Surveillance Systems", *International Symposium on Signals, Circuits and Systems (ISSCS 2007)*, 13-14 July 2007.

## Reviewer

Journals **IEEE Transactions on Wireless Communications, IEEE Transactions on Communications, IEEE Transactions on Vehicular Technology, IEEE Transactions on Information Forensics and Security, IEEE Communications Letters (Exemplary Reviewer 2016).**

Conferences **ICC, WCNC, VTC, PIMRC, GLOBECOM.**

## Academic and Professional Membership

Since March 2019 **IEEE Senior Member.**

2018 **TPC member of IEEE GLOBECOM 2018 Workshop Conference.**

2019-2020 **TPC member of 2019 and 2020 IEEE International Conference on Communications (ICC).**

Since 2019 **Associate Editor of EURASIP Journal on Wireless Communications and Networking.**

## References

Professor **Dr. A. R. Sharafat**, Tarbiat Modares University , Iran.  
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Professor **Dr. Eduard Jorswieck**, TU Dresden , Germany.  
Email: Eduard.Jorswieck@tu-dresden.de

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Associate Professor **Dr. H. Saeedi**, Tarbiat Modares University, Iran.  
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