Masoumeh Moradian

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Education

- **Ph.D.** in Electrical Engineering, Communication systems (2010-2016)
  Sharif University of Technology, Tehran, Iran
  GPA: 17.52 (out of 20)
  Supervisor: Prof. F. Ashtiani
  Thesis: *Energy harvesting in wireless communication networks*
- **M.Sc.** in Electrical Engineering (2008-2010)
  Sharif University of Technology, Tehran, Iran
  GPA: 17.82 (out of 20)
  Supervisor: Prof. F. Ashtiani, Prof. M. Nasiri-kenari
  Thesis: *Modelling and analysis of two wireless networks with opportunistic and primary spectrum access*
- **B.Sc.** in Electrical Engineering (2003-2007)
  Sharif University of Technology, Tehran, Iran
  GPA: 16.83 (out of 20)
  Supervisor: Prof. F. Ashtiani
  Thesis: *GPRS for mobile internet*
- Diploma in Mathematics and Physics (1999-2003)
  Farzanegan National Organization for Development of Exceptional Talents (NODET), Tehran, Iran
  GPA: 19.85 (out of 20)

Positions

- **Lecturer**
  Khajeh Nasir Toosi University of Technology, Tehran, Iran,
  2023-present.
- **Researcher**
  Institute for Research in Fundamental Sciences (IPM), Tehran, Iran,
  2022-2024.
- **Senior Postdoctoral Researcher**
  Institute for Research in Fundamental Sciences (IPM), Tehran, Iran,
  August 2020-March 2022.
- **Postdoctoral Researcher**
  Institute for Research in Fundamental Sciences (IPM), Tehran, Iran,
  March 2017-August 2020.
- **Junior Research Assistant**
  Chinese University of Hong Kong,
  May-December 2015,
  Supervisior: Prof. Angela Zhang.

Research Interests

- Machine learning in communication
- Age of information
- Internet of things

- Complex networks
- Cross-layer design and optimization of communication networks
- Green communication
- Queueing theory
- Semantic communication

Awards and honours

- Ranked 75^{th} in the national-wide university entrance exam for B.Sc. degree (1982)
  More than 500000 students attended the exam
- Ranked 7^{st} in the national-wide university entrance exam for M.Sc. degree in electrical engineering (2011)
  More than 20000 students attended the exam
- Member of the National Elite Foundation
- 4-Year Fellowship Award of the National Elite Foundation

Work Experiences

- **Researcher**
  Iran Telecommunication Research Center (ITRC), Tehran, Iran (March 2010-March 2011),
  Research: Need assessment on desired capabilities of planning and optimization tools for mobile broadband networks.

- **Teaching Assistant**
  Digital communication (Fall 2011),
  Digital communication lab (Fall 2012, 2013),
  Probability and statistics (Spring 2012).

- **Researcher**
  Niroo Research Institute (NRI), Tehran, Iran (2008),
  Research: Evaluation of security capabilities and vulnerabilities of wireless communication environment of electric power grid in Iran.

Relevant courses

- Machine learning (Coursera, Andrew Ng)
- Deep learning.AI (Coursera, Andrew Ng)
- Convex optimization
- Queueing theory
- Communication networks
- Advanced communication
- Wireless communication
- Numerical optimization
- Coding theory
- Information theory
- Space-time coding theory

Journal papers

- **M. Moradian**, A. Dadlani, A. Khonsari, and H. Tabassum, *Age-aware Dynamic Frame Slotted Aloha for Massive Machine-type Communications*, in IEEE Transactions on Communications, 2024.
- B. Chitsaz, A. Khonsari, **M. Moradian**, A. Dadlani and M. S. Talebi, *Scaling Power Management in Cloud Data Centers: A Multi-Level Continuous-Time MDP Approach*, in IEEE Transactions on Services Computing, 2024.
- **M. Moradian**, A. Dadlani, R. Kairgeldin, and A. Khonsari, *Epidemic Threshold and Optimal Activity Control of SCIR Model over Multi-layer Networks*, in IEEE Transaction on Computational Social Sciences , under Major revision, 2024.
- B. Hassanpour, A. Khonsari, **M. Moradian**, P. Shariatpanahi, *Privacy- Preserving Edge Caching: a Probabilistic Approach* , Computer Networks, 2023.
- M.S. Kumar, A. Dadlani, **M. Moradian**, A. Khonsari and T. Tsiftsis,*On the Age of Status Updates in Unreliable Multi-Source M/G/1 Queueing Systems*, in IEEE Communications Letters, 2022.
- A. Ghaffari Sheshjavani, A. Khonsari, S. P. Shariatpanahi, **M. Moradian**, *Content caching for shared medium networks under heterogeneous users' behaviors*, Computer Networks, Volume 199, 2021.
- **M. Moradian**, F. Ashtiani and A. Khonsari, *Stability Region and Delay Analysis of a SWIPT-Based Two-Way Relay Network With Opportunistic Network Coding*, in IEEE Transactions on Vehicular Technology, vol. 69, no. 12, pp. 15682-15693, Dec. 2020.
- **M. Moradian**, F. Ashtiani, and Y. J. Zhang, *Optimal Relaying in Energy Harvesting Wireless Networks with Wireless-Powered Relays*, in IEEE Transactions on Green Communication and Networking, 2019.
- **M. Moradian**, and F. Ashtiani, *On the Tradeoff Between Collision and Cooperation in a Random Access Wireless Network With Energy Harvesting Nodes* in IEEE Transactions on Vehicular Technology, vol. 67, no. 3, pp. 2501-2513, March 2018.
- **M. Moradian** and F. Ashtiani, *Optimal relaying in a slotted aloha wireless network with energy harvesting nodes*, in IEEE Journal on Selected Areas in Communications, vol. 33, no. 8, pp. 1680-1692, Aug. 2015.
- **M. Moradian** and F. Ashtiani, *Analytical modeling of a cognitive IEEE 802.11 WLAN overlaid on a cellular network*, IET Communications, vol. 6, no. 15, pp. 2455-2464, Oct. 2012.

Conference papers

- M.S. Kumar, A. Dadlani, **M. Moradian**, B. Maham, T. Tsiftsis, *Age of Information in Multi-Source Updating Systems: An M/G/1 Vacation Queueing Model*, International Conference on Communications (ICC), 2023.
- B. Chitsaz, A. Khonsari, **M. Moradian**, A. Dadlani, M. S. Talebi, *Efficient Energy Management in Data Centers with Server Setup Delay via State Aggregation*, Submitted to International Conference on Distributed Computing Systems (ICDCS), 2023.
- A. Gaffari, A. Khonsari, S. P. Shariatpanahi, **M. Moradian**, A. Dadlani, *Content Caching in Shared Medium Networks with Non-Uniform and User-Dependent Demands*, International Conference on Communications (ICC), 2022.
- **M. Moradian** and A. Dadlani, *Average Age of Information in Two-Way Relay Networks with Service Preemptions*, IEEE Global Communications Conference (GLOBECOM), 2021.

- **M. Moradian** and A. Dadlani, *Age of information in scheduled wireless relay networks*, IEEE Wireless Communications and Networking Conference (WCNC), 2020, pp. 1-6.
- A. Ghaffari, A. Khosari, S. P. Shariatpanahi, **M. Moradian**, and A. Dadlani, *An Analysis of Coded Caching Under Arbitrary Popularity Distributions* , IEEE Wireless Communications and Networking Conference (WCNC), 2020, pp. 1-6.
- **M. Moradian** and F. Ashtiani, *Sum throughput maximization in a slotted aloha network with energy harvesting nodes* , IEEE Wireless Communications and Networking Conference (WCNC), pp. 1585-1590, April 2014.
- **M. Moradian** and F. Ashtiani, *Throughput analysis of a slotted Aloha-based network with energy harvesting nodes*, IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), pp. 351-356, Sept. 2012.
- **M. Moradian** and F. Ashtiani, *Throughput analysis of a cognitive IEEE 802.11 WLAN sharing the downlink band of a cellular network*, IEEE International Conference on Communications (ICC), pp. 1-5, June 2011.
- P. Rahimzadeh, **M. Moradian** and F. Ashtiani, *Saturation throughput analysis of a cognitive IEEE 802.11-based WLAN overlaid on an IEEE 802.16e WiMAX*, IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), pp. 1515-1520, Sept. 2012.

Programming languages

- Matlab (expert)
- Python (familiar)

Language Skills

- Farsi (Native)
- English (Fluent) (TOEFL: 98(iBT))
- French (Familiar)

References

- **Prof. F. Ashtiani**
  Department of Electrical Engineering, Sharif University of Technology
  `ashtianimt@sharif.edu`
- **Prof. M. Nasiri-kenari**
  Department of Electrical Engineering, Sharif University of Technology
  `mnasiri@sharif.edu`
- **Prof. Angela Ying Jun Zhang**
  Department of Information Engineering, Chinese University of Hong Kong
  `yjzhang@ie.cuhk.edu.hk`
- **Prof. J. Golestani**
  Department of Electrical Engineering, Sharif University of Technology
  `golestani@sharif.edu`
- **Prof. A. Khonsari**
  School of Computer science, Institute for research in fundamental science (IPM)
  `ak@ipm.ir`