Mehrdad Tahmasbi

Department of Electrical and Computer Engineering
Georgia Institute of Technology
Phone no. : +1 (404) 717-9074
Email : mtahmasbi3@gatech.edu
Website : http://www.prism.gatech.edu/~mtahmasbi3/index.html

EDUCATION

Doctor of Philosophy (PhD), Electrical and Computer Engineering, *Georgia Institute of Technology*, Atlanta, GA, 2015 - 2019 (Expected)
GPA: 4.00 / 4.00 (46 Credits)

Master of Science (MS), Mathematics, *Georgia Institute of Technology*, Atlanta, GA, 2015 - 2019 (Expected)
GPA: 4.00 / 4.00 (33 Credits)

Master of Science (MS), Electrical and Computer Engineering, *Georgia Institute of Technology*, Atlanta, GA, 2015 - 2018
GPA: 4.00 / 4.00 (43 Credits)

Bachelor of Science (BS), Electrical Engineering *Sharif University of Technology*, Tehran, Iran, 2010 - 2014
GPA: 17.92 / 20 (190 Credits in 8 Semesters)

Bachelor of Science (BS), Pure Mathematics *Sharif University of Technology*, Tehran, Iran, 2010 - 2014
GPA: 19.40 / 20 (50 Credits in 8 Semesters)

FIELDS OF INTEREST

Quantum information science, Quantum cryptography

HONORS AND AWARDS

Graduate Research Assistant Excellence Award, School of ECE, Georgia Tech, 2019

Silver Medal in International Olympiad in Informatics, Waterloo, Canada, September 2010.

Gold Medal in Iranian National Olympiad in Informatics, Tehran, Iran, March 2009.

Bronze Medal in Iranian National Physics Olympiad, Tehran, Iran, September 2009.

3^{rd} Team in Regional Contests of ACM ICPC West Asia Region, December 2013.

PUBLICATIONS

Journal Paper

1. **M. Tahmasbi**, A. Shahrasbi and A. Gohari, "Critical Graphs in Index Coding," in IEEE Journal on Selected Areas in Communications, vol. 33, no. 2, pp. 225-235, Feb. 2015.
2. **M. Tahmasbi** and M. R. Bloch, "First and Second Order Asymptotics in Covert Communication," IEEE Transactions on Information Theory, vol. 65, no. 4, pp. 2190–2212, Apr. 2019.

3. **M. Tahmasbi** and M. R. Bloch, "Framework for covert and secret key expansion over classical-quantum channels," Physical Review A, vol. 99, no. 5, p. 052329, May 2019
4. **M. Tahmasbi**, M. R. Bloch, "Covert Secret Key Generation with an Active Warden," accepted for publication in IEEE Transactions on Information Forensics and Security.
5. **M. Tahmasbi**, M. R. Bloch and A. Yener, "Learning adversary's actions for secret communication," accepted to IEEE Transactions on Information Theory.

Under Review Journal Papers

1. **M. Tahmasbi**, A. Savard and M. R. Bloch, "Covert Capacity of Non-Coherent Rayleigh-Fading Channels," submitted to IEEE Transactions on Information Theory.
2. I. A. Kadampot, **M. Tahmasbi** and M. R. Bloch, "Multilevel-Coded Pulse-Position Modulation for Covert Communications," Submitted to IEEE Transactions on Information Theory.
3. **M. Tahmasbi** and M. R. Bloch, "Covert and secret key expansion over quantum channels under collective attacks," submitted to IEEE Transactions on Information Theory.
4. **M. Tahmasbi**, M. R. Bloch, "'Steganography Protocols for Quantum Channels," submitted to Journal on Selected Areas in Communications.

Conference Papers

1. **M. Tahmasbi**, A. Shahrasbi and A. Gohari, "Critical graphs in index coding," 2014 IEEE International Symposium on Information Theory, Honolulu, HI, 2014, pp. 281-285.
2. **M. Tahmasbi** and F. Fekri, "On the capacity achieving probability measures for molecular receivers," 2015 IEEE Information Theory Workshop - Fall (ITW), Jeju, 2015, pp. 109-113.
3. **M. Tahmasbi** and M. R. Bloch, "Second-order asymptotics of covert communications over noisy channels," 2016 IEEE International Symposium on Information Theory (ISIT), Barcelona, 2016, pp. 2224-2228.
4. **M. Tahmasbi** and M. R. Bloch, "Second order asymptotics for degraded wiretap channels: How good are existing codes?," 2016 54th Annual Allerton Conference on Communication, Control, and Computing (Allerton), Monticello, IL, 2016, pp. 830-837.
5. **M. Tahmasbi**, M. R. Bloch and A. Yener, "Learning adversary's actions for secret communication," 2017 IEEE International Symposium on Information Theory (ISIT), Aachen, 2017, pp. 2708-2712.
6. K. S. Kumar Arumugam, I. A. Kadampot, **M. Tahmasbi**, S. Shah, M. Bloch and S. Pokutta, "Modulation recognition using side information and hybrid learning," 2017 IEEE International Symposium on Dynamic Spectrum Access Networks (DySPAN), Piscataway, NJ, 2017, pp. 1-2.
7. **M. Tahmasbi**, M. R. Bloch and V. Y. F. Tan, "Error exponent for covert communications over discrete memoryless channels," 2017 IEEE Information Theory Workshop (ITW), Kaohsiung, 2017, pp. 304-308.
8. **M. Tahmasbi** and M. R. Bloch, "Covert secret key generation," 2017 IEEE Conference on Communications and Network Security (CNS), Las Vegas, NV, 2017, pp. 540-544.

9. I. A. Kadampot, **M. Tahmasbi** and M. R. Bloch, "Multilevel-Coded Pulse-Position Modulation for Covert Communications," 2018 IEEE International Symposium on Information Theory (ISIT), Vail, CO, 2018, pp. 1864-1868.
10. I. A. Kadampot, **M. Tahmasbi**, and M. R. Bloch, "Codes for Covert Communication over Additive White Gaussian Noise Channels," accepted to IEEE International Symposium on Information Theory, Mar. 2019.
11. **M. Tahmasbi** and M. Bloch, "Steganography Protocols for Quantum Channels," accepted to IEEE International Symposium on Information Theory, Mar. 2019.
12. **M. Tahmasbi**, M. Bloch, and A. Yener, "In-Band Sensing of the Adversary's Channel for Secure Communication in Wireless Channels." accepted to IEEE International Symposium on Information Theory, Mar. 2019
13. **M. Tahmasbi** and M. Bloch, "Covert Communication with Unknown Code at Warden," accepted to Annual Allerton Conference on Communication, Control, and Computing (Allerton).

TEACHING EXPERIENCES

TA for Statistical Machine Learning, Prof. Bloch (at **Georgia Tech**)
TA for Probability and Statistics, Prof. Davenport (at **Georgia Tech**)
TA for Wireless Communication, Prof. Weitnauer (at **Georgia Tech**)
TA for Adptive Filtering, Prof. Anderson (at **Georgia Tech**)
TA for Computer Structure and Microprocessor, Prof. Jahed
TA for Communication Systems, Prof. Pakravan
TA for Digital Signal Processing, Prof. Mashhadi
TA for Mathematical Analysis 1, Prof. Mir Sadeghi
TA for Advanced Programming (JAVA), Prof. Safarnejad
Part-time Teacher at Allemeh Helli High School Teaching Graph Theory

REVIEWER

Journals

IEEE Transactions on Information Theory
IEEE Transactions on Forensics and Security
IEEE Transactions on Communications
IEEE Transactions on Wireless Communication
IEEE Transactions on Molecular, Biological, and Multi-Scale Communications
Advances in Mathematics of Communications
Journal of Selected Topics in Signal Processing
International Journal of Communication Systems

Conferences

IEEE International Symposium on Information Theory 2016, 2017, 2018, 2019
IEEE Information Theory Workshop 2017
IEEE Wireless Communications and Networking Conference 2018
The International Symposium on Information Theory and Its Applications 2018

SELECTED GRADUATE COURSES

Algebraic Geometry, Functional Analysis, High Dimensional Statistics, Statistical Machine Learning, Quantum Computation and Quantum Communication, Stochastic Calculus, Harmonic Analysis, Real Analysis, Introduction to Hilbert Spaces, Classical Probability, Statistical Estimation, Coding Theory and Applications, Probabilistic methods in combinatorics

COMPUTER SKILLS	Programming Languages: C++, MATLAB, R, Python, Latex Operating Systems: Mac, Linux (Ubuntu), Windows