Ali Tajer

Curriculum Vitæ

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Education

2010-2012	**Princeton University**, Princeton, NJ
	Postdoctoral Research Associate, Electrical Engineering
	Host: H. Vincent Poor (Ph.D., Princeton University)
2007-2010	**Columbia University**, New York City, NY
	Ph.D., Electrical Engineering, (May 2010)
	Advisor: Xiaodong Wang (Ph.D., Princeton University)
	M.A., Statistics (May 2009)
	M.Phil., Electrical Engineering (May 2009)
1998 - 2004	**Sharif University of Technology**
	M.Sc., Electrical Engineering (June 2004)
	Advisor: Babak H. Khalaj (Ph.D., Stanford University)
	B.Sc., Electrical Engineering, (June 2002)

Academic Employment

2025-present	**Rensselaer Polytechnic Institute**, Troy, NY
	Associate Dean for Academic Affairs, School of Engineering
	Professor, Electrical, Computer, and Systems Engineering
	Professor, Computer Science
2019–2024	**Rensselaer Polytechnic Institute**, Troy, NY
	Associate Professor, Electrical, Computer, and Systems Engineering
2014–2018	**Rensselaer Polytechnic Institute**, Troy, NY
	Assistant Professor, Electrical, Computer, and Systems Engineering
2012–2014	**Wayne State University**, Detroit, MI
	Assistant Professor, Electrical and Computer Engineering
2010–2012	**Columbia University**, New York City, NY
	Adjunct Assistant Professor
	Electrical Engineering Department

Awards

External Honors and Awards

2019	Summer Faculty Fellowship, AFRL
2016	Faculty Early Career Development Award (CAREER), NSF
2015	Elevated to *Senior Member*, IEEE
2012	Nominated for the IEEE Signal Processing Best Paper Award
	Selected from the papers appeared in the society's 7 Transactions (5-year window).
2011	Nominated for the IEEE Signal Processing Young Author Best Paper Award
	Selected from the papers appeared in the society's 7 Transactions (5-year window).
2011	Jury Award – School of Engineering and Applied Sciences, Columbia University
2010	Ph.D. Thesis Distinction, Columbia University
	Awarded Annually to at most 1% *of all the Ph.D. graduates in Engineering, Arts, and Sciences*
2007-2010	Presidential Fellowship, Columbia University
2007	Graduate Fellowship, Stanford University (declined)

Rensselaer Honors and Awards

2024	School of Engineering Research Excellence Award, Rensselaer Polytechnic Institute (Senior Faculty)
2021	James M. Tien '66 Early Career Award for Faculty
2018	School of Engineering Classroom Excellence Award, Rensselaer Polytechnic Institute
2017	School of Engineering Research Excellence Award, Rensselaer Polytechnic Institute (Junior Faculty)

Editorial Boards

2024-present	Senior Area Editor, *IEEE Transactions on Signal Processing*
2022-present	Associate Editor, *IEEE Transactions on Information Theory*
2022-2024	Editor, *IEEE Signal Processing Society Education Center Editorial Board*
2019-2024	Associate Editor, *IEEE Transactions on Signal Processing*
2013-2020	Editor, *IEEE Transactions on Communications*
2014-2020	Editor, *IEEE Transactions on Smart Grid*
2018-2019	Associate Editor, *IET Transactions on Smart Grid*
2018-2019	Associate Editor, *Springer Journal of Modern Power Systems and Clean Energy*
2016-2017	Guest Editor, *IEEE Signal Processing Magazine*
2014-2016	Guest Editor-in-Chief, *IEEE Transactions on Smart Grid*

Teaching Experience

Rensselaer Polytechnic Institute — *Instructor's Score*

Fall 2025	Introduction to Stochastic Signals & Systems	TBD
Spring 2025	Engineering Probability	4.00/5.00
Fall 2024	Introduction to Stochastic Signals & Systems	4.40/5.00
Spring 2024	Information Theory & High-dimensional Statistics	4.66/5.00
Fall 2023	Introduction to Stochastic Signals & Systems	4.33/5.00
Fall 2022	Introduction to Stochastic Signals & Systems	4.33/5.00
Spring 2022	Trustworthy Machine Learning	
Fall 2021	Engineering Probability	3.52/5.00
Spring 2021	Information Theory & High-dimensional Statistics	4.13/5.00
Fall 2020	Multidisciplinary Design Laboratory	
Summer 2020	Engineering Probability	4.25/5.00
Spring 2020	Signals & Systems	4.36/5.00
Fall 2019	Engineering Probability	4.65/5.00
Spring 2019	Signals & Systems	4.65/5.00
Fall 2018	Information Theory & High-dimensional Statistics	4.75/5.00
Fall 2017	Information Theory & High-dimensional Statistics	4.75/5.00
Spring 2017	Wireless Data Communications	4.50/5.00
Fall 2016	Signals & Systems	4.58/5.00
Spring 2016	Digital Communications	4.25/5.00
Spring 2015	Signals & Systems	4.67/5.00
Spring 2015	Digital Communications	4.50/5.00
Fall 2014	Signals & Systems	3.88/5.00

Wayne State University — *Instructor's Score*

Winter 2014	Linear Networks & Systems Analysis	4.00/5.00
Fall 2013	Digital Signal Processing	4.00/5.00
Winter 2013	Linear Networks & Systems Analysis	4.50/5.00
Fall 2012	Digital Signal Processing	4.00/5.00

Columbia University

Spring 2012	MIMO Wireless Communications	4.29/5.00
Fall 2011	Digital Communications	4.57/5.00
Spring 2011	MIMO Wireless Communications	4.30/5.00
Fall 2010	Digital Communications	4.88/5.00

Student Research Advising

Doctoral Thesis Advisees

2021-present	Zirui Yan (B.A., University of Science and Technology of China)
2022-present	Emre Acartürk (B.Sc., Bilkent University)
2023-present	Meltem Tatlı(B.Sc., Bilkent University)
2024-present	Raj Bakhunchhe (B.Sc., Kathmandu University)
2025-present	Xiaoting Wang (B.Sc., Rensselaer Polytechnic Institute)
2019-2025	Anmol Dwivedi (B. Tech., National Institute of Technology, Tiruchirappalli)
	Research Scientist, Amazon
2019-2024	Arpan Mukherjee (M.Tech., IIT-Kharagpur)
	Postdoctoral Research Associate at Imperial College London
2020-2024	Kamron Fazel (B.Sc., Rensselaer Polytechnic Institute, M.Sc., Pennsylvania State University)
	Research Scientist, Naval Research Naval Research Laboratory
2020-2024	Burak Varıcı (B.Sc., Bogazici University)
	Postdoctoral Research Associate at Carnegie Mellon University
2022-2024	Shiuli Subhra Ghosh (M.Sc., Chennai Mathematical Institute)
	Engineering at Dominion Energy
2016-2020	Saurabh Sihag (B.Tech./M.Tech, IIT-Kharagpur)
	Postdoctoral Research Associate at the University of Pennsylvania
2016-2020	Maha Zohdy (B.Sc., Cairo University and M.Sc., Nile University)
	Research Scientist at Mathworks, Natick, MA
2014-2018	Javad Heydari, Ph.D. (B.Sc./M.Sc. Sharif University of Technology)
	AI/Machine Learning research scientist at LG Electronics, Santa Clara, CA
2013-2018	Saeid Balaneshin, Ph.D.
	Applied Scientist, Zillow, Seattle, WA
2015-2016	Samia Kazemi
	Ph.D student in ECSE at Rensselaer
2015-2016	Mengheng Xue
2014-2015	Mateo Mengis, M.Sc.
	Automation Engineer, Harris Group, Portland, OR
2011-2014	Zhe Wang (B.Sc./M.Sc. Shanghai Jiao Tong University)
	Researcher in China
2013-2014	İslam Şafak Bayram (postdoc, Ph.D. from North Carolina State University)
	Lecturer, University of Strathclyde, Glasgow, Scotland

Publications

A Patents

P7. Tian Gao, Miao Liu, Debarun Bhattacharjya, Elliot Nelson, Junkyu Lee, Djallel Bouneffouf, Zirui Yan, Ali Tajer,"Bandit-Based Prompt Learning

P6. Djallel Bouneffouf, Erik Miehling, Karthikeyan Natesan Ramamurthy, Ali Tajer, Emre Acarturk,"Causal Graph Summarization for Task Delegation in Multi-agent Systems"

P5. Shiuli Subhra Ghosh and Anmol Dwivedi and Ali Tajer and Kyongmin Yeo and Wesley M. Gifford, "Cascading Anomaly Prediction via Causal Inference, U.S. Patent Application No. 18/915,503

P4. Ali Tajer, Narayan Prasad, and Xiaodong Wang, "Robust Linear Precoder Designs for Multi-Cell Downlink Transmission", U.S. Patent 8,520,762

P3. Ali Tajer, Narayan Prasad, and Xiaodong Wang, "Robust Linear Precoder Designs for Multi-Cell Downlink Transmission", U.S. Patent 8,520,763

P2. Ali Tajer, Narayan Prasad, and Xiaodong Wang, "Robust Linear Precoder Designs for Multi-Cell Downlink Transmission", U.S. Patent 8,385,454

P1. Ali Tajer, Narayan Prasad, and Xiaodong Wang, "Distributed Beamforming and Rate Allocation in Multi-antenna Cognitive Radio Networks", U.S. Patent, Application 2009/0323619 A1.

B Books

B2. Ali Tajer, Samir M. Perlaza, and H. Vincent Poor, editors. *Advanced Data Analytics for Power Systems.* Cambridge University Press, Cambridge, UK, February 2021. ISBN-13: 9781108859806 (615 pages).

B1. ⋆I. Safak Bayram and Ali Tajer. *Plug-in Electric Vehicle Grid Integration.* Artech House, Cambridge, MA, July 2017. ISBN-13: 978-1630810511 (276 pages).

C Book Chapters

BC4. ⋆Saurabh Sihag and Ali Tajer. *Security and Resilience in Cyber-Physical Systems: Detection, Estimation and Control*, chapter Secure Estimation under Model Uncertainty. Springer, 2022.

BC3. ⋆Javad Heydari and Ali Tajer. *Data Analytics for Power Systems*, chapter Controlled Sensing Theory and Applications to Anomaly Detection in Power Systems. Cambridge University Press, Cambridge, UK, 2021.

BC2. Ali Tajer and Xiaodong Wang. *Spectrum Sharing in Wireless Networks: Fairness, Efficiency, and Security*, chapter Capacity Scaling of MIMO Broadcast Channels with Finite-rate Feedback. CRC Press, 2016.

BC1. Ali Tajer, Soummya Kar, and H. Vincent Poor. *Smart Grid Communications and Networking*, chapter Distributed State Estimation: A Learning-based Framework. Cambridge University Press, Cambridge, UK, 2012.

D Peer-Reviewed Journal Articles

Published/Accepted for Publication

J78. ⋆Burak Varıcı, Emre Acartürk, Karthikeyan Shanmugam, Abhishek Kumar, and Ali Tajer. Score-based Causal Representation Learning: Linear and General Transformations. *Journal of Machine Learning Research*, 26:1–90, May 2025.

J77. ⋆Arpan Mukherjee, Shashanka Ubaru, Keerthiram Murugesan, Karthikeyan Shanmugam, and Ali Tajer. Combinatorial Multi-armed Bandits: Arm Selection via Group Testing. *Transactions on Machine Learning Research*, (submitted May 2024).

J76. ⋆Shiuli Subhra Ghosh, Anmol Dwivedi, Ali Tajer, Kyongmin Yeo, and Wesley M. Gifford. Cascading Anomaly Prediction via Causal Inference. *IEEE Transactions on Power Systems*, 40(4):3361 – 3373, July 2025.

J75. ⋆Anmol Dwivedi, Santiago Paternain, and Ali Tajer. Blackout Mitigation via Physics-guided RL. *IEEE Transactions on Power Systems*, 40(3):2363–2375, May 2025.

J74. ⋆Arpan Mukherjee and Ali Tajer. Efficient Best Arm Identification in Stochastic Bandits: Beyond $\beta-$optimality. *IEEE Transactions on Information Theory*, 71(1):539–564, January 2025.

J73. ⋆Anamitra Chaudhuri, Georgios Fellouris, and Ali Tajer. Round Robin Active Sequential Change Detection for Dependent Multi-Channel Data. *IEEE Transactions on Information Theory*, 70(12):9327–9351, December 2024.

J72. ⋆P. N. Karthik, Vincent Y. F. Tan, Arpan Mukherjee, and Ali Tajer. Optimal Best Restless Markov Arm Identification with Fixed Confidence. *IEEE Transactions on Information Theory*, 70(10):7349–7384, October 2024.

J71. ⋆Zirui Yan, Arpan Mukherjee, Burak Varıcı, and Ali Tajer. Robust Causal Bandits for Linear Time-varying Models. *IEEE Journal of Selected Areas in Information Theory*, 5:78 – 93, March 2024.

J70. ⋆Anmol Dwivedi and Ali Tajer. GRNN-based real-time fault chain prediction. *IEEE Transactions on Power Systems*, 39(1):934–946, January 2024.

J69. ⋆Burak Varıcı, Dmitriy Katz-Rogozhnikov, Ali Tajer, Dennis Wei, and Prasanna Sattigeri. Separability Analysis for Causal Discovery in Mixture of DAGs. *Transactions on Machine Learning Research*, October 2023.

J68. ⋆Burak Varıcı, Karthikeyan Shanmugam, Prasanna Sattigeri, and Ali Tajer. Causal Bandits for Linear Structural Equation Models. *Journal of Machine Learning Research*, 24(297):1–29, September 2023.

J67. ⋆Arpan Mukherjee and Ali Tajer. SPRT-based Efficient Best Arm Identification in Stochastic Bandits. *Journal of Selected Areas in Information Theory*, 4:128 – 143, June 2023.

J66. ⋆Saurabh Sihag and Ali Tajer. Estimating Structurally Similar Graphical Models. *IEEE Transactions on Information Theory*, 69(2):1093–1124, February 2023.

J65. ⋆Maha Zohdy, Ali Tajer, and Shlomo Shamai (Shitz). Broadcast Approach to Uplink NOMA: Queuing Delay Analysis. *Entropy*, 24(12), November 2022.

J64. ⋆Arpan Mukherjee, Ali Tajer, Pin-Yu Chen, and Payel Das. Active Sampling of Multiple Sources for Sequential Estimation. *IEEE Transactions on Signal Processing*, 70:4571–4585, 2022.

J63. ⋆Saurabh Sihag, Ali Tajer, and Urbashi Mitra. Adaptive Graph-constrained Group Testing. *IEEE Transactions on Signal Processing*, 70:381 – 396, 2022.

J62. ⋆Ali Tajer, Javad Heydari, and H. Vincent Poor. Active Sampling for the Quickest Detection of Markov Networks. *IEEE Transactions on Information Theory*, 68(4):2479–2508, April 2022.

J61. ⋆Anmol Dwivedi, Sihui Wang, and Ali Tajer. Discriminant Analysis under f-divergence Measures. *Entropy*, 24(2), 2022.

J60. ⋆Anmol Dwivedi and Ali Tajer. Scalable Quickest Line Outage Detection and Localization Via Graph Spectral Analysis. *IEEE Transactions on Power Systems*, 37(1):590–602, January 2022.

J59. Ali Tajer, Avi Steiner, and Shlomo Shamai (Shitz). The Broadcast Approach in Communication Networks. *Entropy*, 23(1):1–137, January 2021.

J58. ⋆Maha Zohdy, Ali Tajer, and Shlomo Shamai (Shitz). Distributed Interference Management: A Broadcast Approach. *IEEE Transactions on Communications*, 69(1):149 – 163, January 2021.

J57. ⋆Saurabh Sihag and Ali Tajer. Secure Estimation under Causative Attacks. *IEEE Transactions on Information Theory*, 66(8):5145 – 5166, August 2020.

J56. ⋆Maha Zohdy, Ali Tajer, and Shlomo Shamai (Shitz). Broadcast Approach to Multiple Access with Local CSIT. *IEEE Transactions on Communications*, 67(11):7483–7498, November 2019.

J55. Trevor Allen, Ali Tajer, and Naofal Al-Dhahir. Secure Alamouti Multiple Access Channel Transmissions with Multi-Antenna Eavesdroppers. *IEEE Wireless Communications Letters*, 8(5):1510–1513, October 2019.

J54. ⋆Saurabh Sihag and Ali Tajer. Optimal Network Parameter Estimation: Single-shot Exchange of Local Decisions. *IEEE Signal Processing Letter*, 26(9):1280–1284, September 2019.

J53. ⋆Ali Tajer, Saurabh Sihag, and Khawla Alnajjar. Non-linear State Recovery in Power System under Random and Structured Attacks. *Springer Journal of Modern Power Systems and Clean Energy*, 7(5):1071 – 1080, September 2019.

J52. ⋆Maha Zohdy and Ali Tajer. Broadcast Approach for the Single-user Energy Harvesting Channel. *IEEE Transactions on Communications*, 67(5):3192 – 3204, May 2019.

J51. ⋆Javad Heydari and Ali Tajer. Quickest Search and Learning over Correlated Sequences: Theory and Application. *IEEE Transactions on Signal Processing*, 67(3):638 – 651, March 2019.

J50. Ali Tajer. False Data Injection Attacks on Electricity Markets by Limited Adversaries: Stochastic Robustness. *IEEE Transactions on Smart Grid*, 10(1):128–138, January 2019.

J49. ⋆Ali Tajer, Maha Zohdy, and Khawla Alnajjar. Resource Allocation under Sequential Resource Access. *IEEE Transactions on Communications*, 66(11):5608–5620, November 2018.

J48. *Mateo R. Mengis and Ali Tajer. Data Injection Attacks on Electricity Markets by Limited Adversaries: Worst-case Robustness. *IEEE Transactions on Smart Grid*, 9(6):5710–5720, November 2018.

J47. *Saurabh Sihag and Ali Tajer. Power System State Estimation under Model Uncertainty. *IEEE Journal of Selected Topics in Signal Processing*, 12(4):593–606, August 2018.

J46. *Samia Kazemi and Ali Tajer. Multiaccess Communication via a Broadcast Approach Adapted to the Multiuser Channel. *IEEE Transactions on Communication*, 66(8):3341–3353, August 2018.

J45. *Javad Heydari and Ali Tajer. Quickest Localization of Anomalies in Power Grids: A Stochastic Graphical Approach. *IEEE Transactions on Smart Grid*, 9(6):4679–4688, August 2018.

J44. Ali Tajer. Load Forecasting via Diversified State Prediction in Multi-Area Power Networks. *IEEE Transactions on Smart Grid*, 8(6):2675 – 2684, November 2017.

J43. *Javad Heydari and Ali Tajer. Quickest Search for Local Structures in Random Graphs. *IEEE Transactions on Signal and Information Processing over Networks – Special Issue on Graph Signal Processing*, 3(3):528–538, September 2017.

J42. Trevor Allen, Ali Tajer, and Naofal Al-Dhahir. Secure Alamouti MAC Transmissions. *IEEE Transactions on Wireless Communication*, 16(6):3674–3687, June 2017.

J41. *I. Safak Bayram and Ali Tajer. Exploiting PEV Batteries for V2X Applications. *IEEE Smart Grid Newsletter*, May 2017.

J40. *I. Safak Bayram, Ali Tajer, Mohamed Abdallah, and Khalid Qaraqe. A Stochastic Sizing Approach for Sharing-based Energy Storage. *IEEE Transactions on Smart Grid*, 8(3):1075–1084, May 2015.

J39. Hana Godrich, Arye Nehorai, Ali Tajer, M. Sabrina Greco, and Changshui Zhang. Special Article Series on Signal Processing Education via Hands-on and Design Projects. *IEEE Signal Processing Magazine*, 34(1):13, January 2017.

J38. *Javad Heydari, Ali Tajer, and H. Vincent Poor. Quickest Linear Search over Correlated Sequences. *IEEE Transactions on Information Theory*, 62(10):5786–5808, October 2016.

J37. Mahdi Ashraphijou, Ali Tajer, Chen Gong, and Xiaodong Wang. A Receiver-centric Approach to Interference Management: Fairness and Outage Optimization. *IEEE Transactions on Information Theory*, 62(10):5619–5642, October 2016.

J36. Ali Tajer, Ian Dobson, Soummya Kar, Javad Lavaei, and Le Xie. Theory of Complex Systems with Applications to Smart Grid Operations. *IEEE Transactions on Smart Grid*, 7(4):1949–1950, July 2016.

J35. *Ali Tajer and Javad Heydari. Quickest Wideband Spectrum Sensing over Correlated Channels. *IEEE Transactions on Communication*, 63(9):3082–3091, September 2015.

J34. I. Safak Bayram, Ali Tajer, Mohamed Abdallah, and Khalid Qaraqe. Capacity Planning Frameworks for Electric Vehicle Charging Stations With Multiclass Customers. *IEEE Transactions on Smart Grid*, 6(4):1934–1943, July 2015.

J33. Ali Tajer, Venugopal V. Veeravalli, and H. Vincent Poor. Outlying Sequence Detection in Large Data Sets: A Data-driven Approach. *IEEE Signal Processing Magazine - Special Issue on Signal Processing for Big Data*, 31(5):44–56, September 2014.

J32. Weiqiang Xu, Ali Tajer, and Xiaodong Wang. Power Allocation in MISO Interference Channels with Stochastic CSIT. *IEEE Transactions on Wireless Communications*, 13(3):1716–1727, March 2014.

J31. Chen Gong, Ali Tajer, and Xiaodong Wang. Distributed Real-time Energy Scheduling in SmartGrid: Stochastic Model and Fast Optimization. *IEEE Transactions on Smart Grid*, 4(3):1476 – 1489, September 2013.

J30. Ali Tajer and H. Vincent Poor. Quick Search for Rare Events. *IEEE Transactions on Information Theory*, 59(7):4462 – 4481, July 2013.

J29. Guido H. Jajamovich, Ali Tajer, and Xiaodong Wang. Minimax-Optimal Hypothesis Testing with Estimation-dependent Costs. *IEEE Transactions on Signal Processing*, 60(12):6151–6165, December 2012.

J28. Shuguang Cui, Z. Han, Soummya Karand Tùng T. Kim, H. Vincent Poor, and Ali Tajer. Coordinated Data-Injection Attack and Detection in the Smart Grid: A Detailed Look at Enriching Detection Solutions. *IEEE Signal Processing Magazine*, 29(5):106–115, September 2012.

J27. Ali Tajer, Rui M. Castro, and Xiaodong Wang. Adaptive Sensing of Congested Spectrum Bands. *IEEE Transactions on Information Theory*, 58(9):6110– 6125, September 2012.

J26. Chen Gong, Ali Tajer, and Xiaodong Wang. Group Decoding for Multi-Relay Assisted Interference Channel. *EEE Journal of Selected Areas in Communications*, 30(8):1489 – 1499, August 2012.

J25. Ali Tajer and Xiaodong Wang. $(n; K)$-user Interference Channel: Degrees of Freedom. *IEEE Transactions on Information Theory*, 58(8):5338 – 5353, August 2012.

J24. George V. Moustakides, Guido H. Jajamovich, Ali Tajer, and Xiaodong Wang. Joint Detection and Estimation: Optimum Tests and Applications. *IEEE Transactions on Information Theory*, 58(7):4215–4229, July 2012.

J23. Chen Gong, Omar Abu-Ella, Ali Tajer, and Xiaodong Wang. Constrained Group Decoder for Interference Channels. *Journal of Communications, Special Issue on Future Directions in Computing and Networking*, 7(5):382–390, May 2012.

J22. *Zhe Wang, Ali Tajer, and Xiaodong Wang. Communication of Energy Harvesting Tags. *IEEE Transactions on Communications*, 60(4):1159 – 1166, April 2012.

J21. Chen Gong, Ali Tajer, and Xiaodong Wang. Interference Channels with Partial Group Decoding. *IEEE Transactions on Communications*, 59(11):3059 – 3071, November 2011.

J20. Ali Tajer, Aria Nosratinia, and Naofal Al-Dhahir. Diversity Order of In Finite-Length Symbol-by-Symbol Linear Equalization. *IEEE Transactions on Communications*, 59(9):2343 – 2348, September 2011.

J19. Ali Tajer and Xiaodong Wang. Information Exchange Limits in Multi-cell MIMO Cooperative Networks. *IEEE Transactions on Signal Processing*, 59(6):2927 – 2942, June 2011.

J18. Ali Tajer, Narayan Prasad, and Xiaodong Wang. Robust Linear Precoder Design for Multi-cell Downlink Transmission. *IEEE Transactions on Signal Processing*, 59(1):235–251, January 2011.

J17. Ali Tajer and Xiaodong Wang. Multiuser Diversity Gain in Cognitive Networks. *IEEE/ACM Transactions on Networking*, 18(6):1766 – 1779, December 2010.

J16. Ali Tajer and Aria Nosratinia. Diversity Order in ISI Channels with Single-Carrier Frequency-Domain Equalizers. *IEEE Transactions on Wireless Communications*, 9(3):1022 – 1032, March 2010.

J15. Ali Tajer, Guido H. Jajamovich, Xiaodong Wang, and George V. Moustakides. Optimal Joint Target Detection and Parameter Estimation by MIMO Radar. *IEEE Journal of Selected Topics in Signal Processing*, 4(1):127–145, January 2010.

J14. Ali Tajer, Narayan Prasad, and Xiaodong Wang. Beamforming and rate allocation in miso cognitive radio networks. *IEEE Transactions on Signal Processing*, 58(1):362 – 377, January 2010.

J13. Ali Tajer and Xiaodong Wang. Beacon-Assisted Spectrum Access with Cooperative Cognitive Transmitter and Receiver. *IEEE Transactions on Mobile Computing*, 9(1):112– 126, January 2010.

E Peer-reviewed Conference Papers (Extended Papers)

EC12. *Zirui Yan, Emre Acartürk, and Ali Tajer. Reward-oriented Causal Representation Learning. In *Proc. Conference on Neural Information Processing Systems (NeurIPS)*, San Diego, CA, December 2025 **(acceptance rate: 24%, 53 pages)**.

EC11. *Meltem Tatlı, Arpan Mukherjee, Prashanth L.A., Karthikeyan Shanmugam, and Ali Tajer. Risk-sensitive Bandits: Arm Mixture Optimality and Regret-efficient Algorithms. In *International Conference on Artificial Intelligence and Statistics (AISTATS)*, Mai Khao, Thailand, May 2025 **(acceptance rate: 31.1%, 42 pages)**.

EC10. *Zirui Yan and Tajer. Linear Causal Bandits: Unknown Graph and Soft Interventions. In *Proc. Conference on Neural Information Processing Systems (NeurIPS)*, Vancouver, Canada, December 2024 **(acceptance rate: 26.1%, 27 pages)**.

EC9. *Burak Varıcı, Dmitriy Katz-Rogozhnikov, Dennis Wei, Prasanna Sattigeri, and Ali Tajer. Interventional Causal Discovery in a Mixture of DAGs. In *Proc. Conference on Neural Information Processing Systems (NeurIPS)*, Vancouver, Canada, December 2024 **(acceptance rate: 26.1%, 35 pages)**.

EC8. *Emre Acartürk, Burak Varıcı, Karthikeyan Shanmugam, and Ali Tajer. Sample Complexity of Interventional Causal Representation Learning. In *Proc. Conference on Neural Information Processing Systems (NeurIPS)*, Vancouver, Canada, December 2024 **(acceptance rate: 25%, 35 pages)**.

EC7. *Burak Varıcı, Emre Acartürk, Karthikeyan Shanmugam, and Ali Tajer. Linear Causal Representation Learning from Unknown Multi-node Interventions. In *Proc. Conference on Neural Information Processing Systems (NeurIPS)*, Vancouver, Canada, December 2024 **(acceptance rate: 25%, 33 pages)**.

EC6. *Burak Varıcı, Emre Acartürk, Karthikeyan Shanmugam, and Ali Tajer. General Identifiability and Achievability for Causal Representation Learning. In *International Conference on Artificial Intelligence and Statistics (AISTATS)*, Valencia, Spain, May 2024 **(acceptance rate: 27.6%, 26 pages)**.

EC5. *Zirui Yan, Dennis Wei, Dmitriy Katz-Rogozhnikov, Prasanna Sattigeri, and Ali Tajer. General Causal Bandits: General Causal Models and Interventions. In *International Conference on Artificial Intelligence and Statistics (AISTATS)*, Valencia, Spain, May 2024 **(acceptance rate: 27.6%, 38 pages)**).

EC4. *Burak Varıcı, Karthikeyan Shanmugam, Prasanna Sattigeri, and Ali Tajer. Scalable Intervention Target Estimation in Linear Models. In *Proc. Conference on Neural Information Processing Systems (NeurIPS)*, Virtual, December 2021 **(acceptance rate: 25.8%, 38 pages)**.

EC3. *Arpan Mukherjee, Ali Tajer, Pin-Yu Chen, and Payel Das. Mean-based Best Arm Identification in Stochastic Bandits under Reward Contamination . In *Proc. Conference on Neural Information Processing Systems (NeurIPS)*, Virtual, December 2021 **(acceptance rate: 25.8%, 22 pages)**.

EC2. *Burak Varıcı, Saurabh Sihag, and Ali Tajer. Learning Shared Subgraphs in Ising Model Pairs. In *International Conference on Artificial Intelligence and Statistics (AISTATS)*, San Diego, CA, April 2021 **(acceptance rate: 29.8%, 20 pages)**.

EC1. *Saurabh Sihag and Ali Tajer. Structure Learning with Side Information: Sample Complexity. In *Proc. Conference on Neural Information Processing Systems (NeurIPS)*, Vancouver, Canada, December 2019 **(acceptance rate: 21.1%, 18 pages)**.

F Peer-reviewed Conference Papers

C106. *Pranamya Prashant Kulkarni, Puranjay Datta, Emre Acartürk, Burak Varıcı, Karthikeyan Shanmugam, and Ali Tajer. ROPES: Robotic Pose Estimation via Score-based Causal Representation Learning. In *Proc. Conference on Neural Information Processing Systems (NeurIPS) – Workshop on Embodied World Models for Decision Making*, San Diego, CA, December 2025

C105. *Zirui Yan, Emre Acartürk, and Ali Tajer. Reward-oriented Causal Representation Learning. In *Proc. Conference on Neural Information Processing Systems (NeurIPS)*, San Diego, CA, December 2025

C104. *Anmol Dwivedi and Ali Tajer. Real-Time Risky Fault-Chain Search using Time-Varying Graph RNNs. In *Proc. International Conference on Learning Representations workshop on Tackling Climate Change with Machine Learning*, Singapore, December 2025

C103. *Meltem Tatlı, Arpan Mukherjee, Prashanth L.A., Karthikeyan Shanmugam, and Ali Tajer. Risk-sensitive Bandits: Arm Mixture Optimality and Regret-efficient Algorithms. In *International Conference on Artificial Intelligence and Statistics (AISTATS)*, Mai Khao, Thailand, May 2025

C102. *Anmol Dwivedi, Nurali Virani, Santiago Paternain, and Ali Tajer. RL for Mitigating Cascading Failures: Targeted Exploration via Sensitivity Factors. In *Proc. Conference on Neural Information Processing Systems (NeurIPS) – Tackling Climate Change with Machine Learning Workshop*, Vancouver, Canada, December 2024

C101. *Zirui Yan and Tajer. Linear Causal Bandits: Unknown Graph and Soft Interventions. In *Proc. Conference on Neural Information Processing Systems (NeurIPS)*, Vancouver, Canada, December 2024

C100. *Burak Varıcı, Dmitriy Katz-Rogozhnikov, Dennis Wei, Prasanna Sattigeri, and Ali Tajer. Interventional Causal Discovery in a Mixture of DAGs. In *Proc. Conference on Neural Information Processing Systems (NeurIPS)*, Vancouver, Canada, December 2024.

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C56. ⋆Samia Kazemi and Ali Tajer. A broadcast approach to multiple access adapted to the multiuser channel. In *Proc. IEEE International Symposium on Information Theory (ISIT)*, Aachen, Germany, June 2017.

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Editorship & Service

Research Proposal Reviews

- NSF Panel Reviewer, CISE (CAREER)   2024
- DoE Panel Reviewer   2024
- NSF Panel Reviewer, ENG   2024
- NSF Panel Reviewer, CISE (CAREER)   2023
- NSF Panel Reviewer, ENG (2)   2022
- NSF Panel Reviewer, ENG   2022
- NSF Panel Reviewer, CISE   2022
- NSF Panel Reviewer, CISE (AI Institute)   2021
- NSF Panel Reviewer, ENG (CAREER)   2020
- NSF Panel Reviewer, CISE (CAREER)   2020
- NSF Panel Reviewer, CRII   2020
- NSF Panel Reviewer, CISE   2020
- Natural Sciences and Engineering Research (Canada)   2020
- NSF Panel Reviewer, CISE   2019
- DoE Panel Reviewer   2019
- NSF Panel Reviewer, Big Data   2018
- NSF Panel Reviewer, Big Data   2017
- Israel Science Foundation   2017
- US-Israel Binational Science Foundation   2017
- NSF Panel Reviewer, Big Data   2016
- NSF Panel Reviewer, CISE   2016
- NSF Panel Reviewer, EARS   2015
- NSF Panel Reviewer, CISE   2015
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- NSF Panel Reviewer, RIPS   2014
- NSF Panel Reviewer, Big Data   2014
- AFOSR/DDDS   2014
- NSF Panel Reviewer, ENG   2013

Professional Societies

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- *Member*, IEEE Information Theory Society
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- *Member*, IEEE Communication Society
- *Member*, IEEE Power System Society
- *Member*, Society for Industrial and Applied Mathematics (SIAM)
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  – Asilomar Conference on Signals, Systems, and Computers 2020

- **Symposium Chair**

  – IEEE Smart Grid Communications (SmartGridComm) 2023

  – IEEE Global Communications Conf. (Globecom) 2019

  – IEEE Intl. Conf. on Computing, Networking and Communications (ICNC) 2014

  – IEEE Intl. Conf. on Communications and Networking 2012

- **Special Session Organizer**

  – Asilomar Conference on Signals, Systems, and Computers 2018

  – Asilomar Conference on Signals, Systems, and Computers 2014

  – IEEE Workshop on CAMSAP 2015

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  – IEEE Statistical Signal Processing Workshop 2023

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  – IEEE International Symposium on Information Theory (ISIT) 2026

  – International Conference on Machine Learning (ICML) 2026

  – International Conference on Learning Representations (ICLR) 2026

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  – Artificial Intelligence and Statistics (AISTATS) 2025

  – International Conference on Learning Representations (ICLR) 2025

  – The Conference on Uncertainty in Artificial Intelligence (UAI) 2024

  – IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2024

  – IEEE Workshop on Comp. Advances in Multi-Sensor Adaptive Processing (CAMSAP) 2023

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  – IEEE Intl. Workshop on Signal Processing Advances in Wireless Communications (SPAWC) 2022

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- IEEE Intl. Conf. on Communications (ICC) 2017
- IEEE Global Signal and Information Processing (GlobalSIP) 2017
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    * Signal Processing for Big Data in Wireless Networks
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- IEEE Global Signal and Information Processing (GlobalSIP) 2015
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- IEEE Intl. Conf. on Communications (ICC) 2015
- IEEE Global Signal and Information Processing (GlobalSIP) 2014
- IEEE Intl. Symposium on Wireless Personal Multimedia Communication (WMPC) 2014
- IEEE International Wireless Symposium (IWS) 2014
- IEEE International Conf. on Communications (ICC) 2014
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- IEEE & CIC International Conf. on Communications 2013
- IEEE Smart Grid Communication Conf. (SmartGridComm) 2013
- IEEE Global Wireless Summit, 2013
- IEEE Wireless Conf. and Networking Conference 2013
- IEEE Global Signal and Information Processing (GlobalSIP) 2013

* Symposium on Network Theory
            * Symposium on New Sensing and Statistical Inference Methods
            * Symposium on Information Processing in Energy Grids
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        – IEEE Smart Grid Communications (SmartGridComm) 2012

- **Peer Reviewing (Selected List)**

    – IEEE Transactions on Information Theory
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• AI/ML Area Chair (ECSE)	2019 - present
• Graduate Admission Committee (ECSE)	2015 – 2019, 2020 – present
• Faculty Recruitment Committee (ECSE)	2015 – present
• Graduate Studies Committee (ECSE)	2014 – present
• Communications, Information, and Signals and Systems (ECSE)	2014 - present
• Faculty Senate, Senator (Institute)	2019 – 2021
• Faculty Award Committee (ECSE)	2019 – 2020
• School of Engineering Awards Committee (SoE)	2019 – 2020
• RPI-IBM AI Research Collaboration Core (Institute) Hiring Committee	2019 – 2020
• Cybersecurity Analysis Team (Institute)	2019 – 2020
• Data Dexterity Task Force (SoE)	2018 – 2019
• Faculty Recruitment Committee (ECSE), Chair	2018 – 2019
• Cyber Security Task Force (Institute)	2018
• Seminar Series Organizer (WSU, ECE)	2013 – 2014
• Graduate Studies Committee (WSU, ECE)	2012 – 2014

Other Service and Administration Activities

- Undergraduate Research Symposium – Judge .... Apr. 2018
- High School Research Program – Judge .... Aug. 2017
- Undergraduate Research Symposium – Judge .... Apr. 2017
- IEEE Signal Processing Distinguished Lectures – Organizer .... 2016 – present

Professional and Public Lectures

Plenary Talks

- IEEE Smart Grid Communications Conference (Miami, FL) .... Nov. 2015
  Title: *Data-adaptive Agile Line Outage Detection and Localization*

- Cyber Physical Systems Week (Philadelphia, PA) .... Apr. 2013
  Title: *Non-asymptotic Composite Hypothesis Testing: Theory and Applications*

Invited Talks

- *Causal Representation Learning*

  IT75. Rensselaer Polytechnic Institute .... Nov. 2025

  IT74. Princeton University .... Nov. 2025

  IT73. Rutgers University .... Nov. 2025

  IT72. Cambridge University .... May 2025

  IT71. Imperial College London .... May 2025

  IT70. Indian Institute of Science (Bengaluru, India) .... Nov. 2024

  IT69. Google DeepMind .... Nov. 2024

  IT68. Massachusetts Institute of Technology (Cambridge, MA) .... Oct. 2024

- *Causal Bandits*

  IT67. Google DeepMind .... Nov. 2024

  IT66. University of Illinois, Urbana-Champaign (Urbana, IL) .... Sep. 2023

  IT65. National University of Singapore (Singapore) .... Jan. 2023

  IT64. University of Southern California (Los Angeles, CA) .... Oct. 2022

- *Best Arm Identification in Stochastic Bandits*

  IT63. International Workshop on Applied Probability .... Jun. 2023

  IT62. National University of Singapore (Singapore) .... Jan. 2023

  IT61. University of Illinois, Urbana-Champaign (Urbana, IL) .... Oct. 2022

  IT60. INRIA (Nice, France) .... Jun. 2022

- *Secure Estimation in Adversarial Environments*

  IT59. Air Force Research Lab (Rome, NY) .... May 2019

- *Active Sensing for Quickest Event Detection in Networks*

  IT58. Shannon YouTube Channel .... Nov. 2019

  IT57. National Science Foundation .... Nov. 2019

  IT56. California Institute of Technology (Pasadena, CA) .... Nov. 2018

  IT55. University of California, Berkeley (Berkeley, CA) .... Oct. 2018

- *Controlled Sensing under Correlated Actions*

IT54. Information Theory and Application (U. of California San Diego, La Jolla, CA)   Feb. 2018

- *Optimization under Sequential Resource Access*

IT53. Sharif University of Technology (Tehran, Iran)   Feb. 2018

- *Quickest Search for Local Structures in Random Graphs*

IT52. Syracuse University (Syracuse, NY)   Feb. 2018
IT51. Shanghai Jiao Tong University (Shanghai, China)   Oct. 2017
IT50. Tongji University (Shanghai, China)   Oct. 2017
IT49. Southeast University - School of Information Science and Eng'g (Nanjing, China)   Oct. 2017
IT48. Southeast University - School of Mathematics (Nanjing, China)   Oct. 2017
IT47. University of Science and Technology of China (Hefei, China)   Oct. 2017
IT46. Carnegie Mellon University (Pittsburgh, PA)   May 2017
IT45. Information Theory and Application (U. of California San Diego, La Jolla, CA)   Feb. 2017
IT44. Texas A&M University - Doha (Doha, Qatar)   Jan. 2017
IT43. State University of New York - Albany (Albany, NY)   Nov. 2016
IT42. Lund University   Aug. 2016

- *Quickest Search for Anomalies in Networked Data*

IT41. General Electric (Schenectady, NY)   May 2016
IT40. Information Theory and Application (U. of California San Diego, La Jolla, CA)   Feb. 2016
IT39. Boğaziçi University (Istanbul, Turkey)   Nov. 2015
IT38. Sabanci University (Istanbul, Turkey)   Nov. 2015
IT37. Koç University (Istanbul, Turkey)   Nov. 2015
IT36. University of Pittsburgh (Pittsburgh, PA)   Feb. 2014
IT35. New Jersey Institute of Technology (Newark, NJ)   Feb. 2014
IT34. Illinois Institute of Technology (Chicago, IL)   Jan. 2014

- *Fundamental Limits of Spectrum Sensing*

IT33. National Science Foundation (Arlington, VA)   Mar. 2016
IT32. American Association for Advancement of Science (Washington, D.C.)   Mar. 2012

- *Data-adaptive Agile Line Outage Detection and Localization*

IT31. IEEE Statistical Signal Processing Workshop (Palma de Mallorca, Spain)   Jun. 2016
IT30. University of Vermont (Burlington, VT)   Oct. 2015

- *Search for Correlation Structures in Networked Data*

IT29. Tufts University (Medford, MA)   Sep. 2015
IT28. Worcester Polytechnic Institute (Worcester, MA)   Sep. 2015
IT27. Rensselaer Polytechnic Institute - Computer Science Department (Troy, NY)   May 2015
IT26. Information Theory and Application (U. of California San Diego)   Feb. 2015

- *Coordination Limits in Wireless Networks*

IT25. Imperial College London (London, UK)   Apr. 2014
IT24. Rensselaer Polytechnic Institute Troy, NY)   Mar. 2014
IT23. Purdue University (West Lafayette, IN)   Mar. 2014
IT22. George Mason University (Fairfax, VA)   Mar. 2014

IT21. Pennsylvania State University (State College, PA)   Mar. 2014

IT20. Virginia Polytechnic Institute and State University (Blacksburg, VA)   Feb. 2014

IT19. Georgia Institute of Technology (Atlanta, GA)   Mar. 2012

IT18. University of Minnesota (Minneapolis, MN)   Mar. 2012

IT17. University of Massachusetts (Amherst, MA)   Mar. 2012

IT16. Boston University (Boston, MA)   Mar. 2012

IT15. Tufts University (Medford, MA)   Mar. 2012

IT14. Qualcomm, Inc. (San Diego, MA)   Jan. 2012

- *Quick Search over Correlated Sequences*

IT13. Information Theory and Application (U. of California San Diego, La Jolla, CA)   Feb. 2014

- *Distributed Inference and Resource Management in Power Systems*

IT12. Temple University (Philadelphia, PA)   Nov. 2013

IT11. New Jersey Institute of Technology (Newark, NJ)   Feb. 2013

IT10. New York University (Brooklyn, NY)   Apr. 2012

IT9. Wayne State University (Detroit, MI)   Mar. 2012

- *Quick Search for Rare Events*

IT8. Information Theory and Application (U. of California San Diego, La Jolla, CA)   Feb. 2012

IT7. Rutgers University (New Brunswick, NJ)   Nov. 2011

IT6. Stanford University (Palo Alto, CA)   Jun. 2011

- *Interference Management via Group Decoding*

IT5. University of Illinois Chicago (Chicago, IL)   Mar. 2011

IT4. Alcatel Lucent Bell Labs (Murray Hill, NJ)   Mar. 2011

IT3. Information Theory and Application (U. of California San Diego, La Jolla, CA)   Feb. 2011

IT2. Broadcom   Jun. 2010

IT1. Alcatel Lucent Bell Labs (Murray Hill, NJ)   Apr. 2010

December 29, 2025