Ali Mousavi

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RESEARCH INTERESTS

Artificial Intelligence, Machine Learning

EDUCATION

Rice University — Houston, TX
Ph.D. in Electrical and Computer Engineering — July. 2014–May 2018
Advisor: Richard G. Baraniuk
Thesis: Data-Driven Computational Sensing

Rice University — Houston, TX
M.Sc. in Electrical and Computer Engineering — Aug. 2011–May 2014
Advisor: Richard G. Baraniuk
Thesis: Topics on LASSO and Approximate Message Passing

Sharif University of Technology — Tehran, Iran
B.Sc. in Electrical Engineering — Sept. 2007–June 2011

PROFESSIONAL EXPERIENCE

Senior Machine Learning Researcher, Apple — Seattle, WA
Siri search and knowledge graph — Oct 2020–current

AI Resident, Google Brain — Kirkland, WA
Reinforcement learning and neural recommendation systems — July 2018–Sept 2020

Graduate Research Assistant, Rice DSP Group — Houston, TX
Machine Learning and Statistical Signal Processing — Aug. 2011–July 2018

Data Science Intern, NativeX LLC — San Francisco, CA
Focusing on Big Data related problems in mobile advertisement platform — May 2014–July 2014

Research Intern, École Polytechnique Fédérale de Lausanne (EPFL) — Lausanne, Switzerland
Approximation for a Problem in Multi-User Information Theory — May 2010–Sept. 2010

Undergraduate Researcher, Advanced Communications Research Institute — Tehran, Iran
Overloaded CDMA Systems — Aug. 2009–Aug. 2011

Teacher/Teaching Assistant — Rice Univ. & Sharif Univ.
Statistics and electrical engineering courses — 2007–2016

AWARDS and HONORS

ICML Top Reviewer Award	2020
NeurIPS Best Reviewer Award	2019
Best Poster Award, 13th Annual Machine Learning Symposium, The New York Academy of Sciences	2019
Schlumberger Graduate Fellowship	2016
Society of Iranian-American Women for Education (SIAWE) Fellowship	2013, 2014
Travel Grant, Matheon Conference on Compressed Sensing and its Applications, Berlin, Germany	2013
George R. Brown School of Engineering Fellowship, Rice University	2011
Iran's National Elites Foundation Fellowship	2007–2011
President's Honorary Rank Award, Sharif University of Technology	2008
Ranked 12th in the Centralized University Entrance Exam among 300,000 students (Iran)	2007
Member of the National Organization for Development of Exceptional Talents (Iran)	2000–2007

PUBLICATIONS ([Google Scholar](#))

Journal Publications

1. Ali Mousavi, Richard G. Baraniuk, "Uniform Partitioning of Data Grid for Association Detection", *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2020

2. Ali Mousavi, Arian Maleki, Richard G. Baraniuk, "Consistent Parameter Estimation for LASSO and Approximate Message Passing", *The Annals of Statistics*, 2018, Vol. 46, No. 1, 119148

3. Debarshi Sen, Amirali Aghazadeh, Ali Mousavi, Satish Nagarajaiaha, Richard G. Baraniuk, " Sparsity-based Data-driven Approaches for Damage Detection in Plates", *Elsevier Mechanical Systems and Signal Processing*, Volume 117, 2019, Pages 333-346

4. Debarshi Sen, Amirali Aghazadeh, Ali Mousavi, Satish Nagarajaiah, Richard G. Baraniuk, Ananad Dabak, "Data-driven semi-supervised and supervised learning algorithms for health monitoring of pipes", *Elsevier Mechanical Systems and Signal Processing*, Volume 131, 2019, Pages 524-537

5. Pedram Pad, Ali Mousavi, Ali Goli, Farokh Marvasti, "Simplified MAP-MUD for Active User CDMA", *IEEE Communications Letters*, Vol. 15, No. 6, June 2011

Conference Publications (* = equal contribution, ** = sorted alphabetically)

1. Ali Mousavi, Lihong Li, Qiang Liu, Denny Zhou "Black-box Off-policy Estimation for Infinite-Horizon Reinforcement Learning", *International Conference on Learning Representations—ICLR*, Addis Ababa, Ethiopia, April 2020.

2. Andrew Bennett**, Nathan Kallus**, Lihong Li**, Ali Mousavi**, "Off-policy Evaluation in Infinite-Horizon Reinforcement Learning with Latent Confounders", *Causal Learning for Decision Making Workshop, International Conference on Learning Representations—ICLR*, Addis Ababa, Ethiopia, April 2020.

3. Chuan Guo*, Ali Mousavi*, Xiang Wu, Daniel Holtmann-Rice, Satyen Kale, Sashank Reddi, Sanjiv Kumar, "Breaking the Glass Ceiling for Embedding-Based Classifiers for Large Output Spaces", *Neural Information Processing Systems—NeurIPS*, Vancouver, BC, December 2019.

4. Ali Mousavi, Gautam Dasarathy, Richard G. Baraniuk, "A Data-Driven and Distributed Approach to Sparse Signal Representation and Recovery", *International Conference on Learning Representations—ICLR*, New Orleans, LA, May 2019.

5. Chris Metzler, Ali Mousavi, Richard G. Baraniuk, "Learned D-AMP: A Principled CNN-based Compressive Image Recovery Algorithm", *Neural Information Processing Systems—NeurIPS*, Long Beach, CA, December 2017

6. Chris Metzler, Ali Mousavi, Reinhard Heckel, Richard G. Baraniuk, "Unsupervised Learning with Stein's Unbiased Risk Estimator", *International Biomedical and Astronomical Signal Processing Frontiers workshop*, February 2019.

7. Ali Mousavi, Gautam Dasarathy, Richard G. Baraniuk, "Deepcodec: Adaptive Sensing and Recovery via Deep Convolutional Neural Networks", *Allerton Conference on Communication, Control, and Computing*, Monticello, IL, October 2017 (invited paper).

8. Ali Mousavi, Richard G. Baraniuk, "Beyond l1: Data Driven Sparse Signal Recovery using DeepInverse", *Signal Processing with Adaptive Sparse Structured Representations—SPARS*, Lisbon, Portugal, June 2017.

9. Ali Mousavi, Richard G. Baraniuk, "Learning to Invert: Signal Recovery via Deep Convolutional Networks", *IEEE International Conference on Acoustics, Speech and Signal Processing—ICASSP*, New Orleans, March 2017

10. Ali Mousavi, Ankit Patel, Richard G. Baraniuk, "A Deep Learning Approach to Structured Signal Recovery", *Allerton Conference on Communication, Control, and Computing*, Monticello, IL, October 2015.

11. Ali Mousavi, Richard G. Baraniuk, "An Information-Theoretic Measure of Dependency among Variables in Large Datasets", *Allerton Conference on Communication, Control, and Computing*, Monticello, IL, October 2015.

12. Ali Mousavi, Arian Maleki, Richard G. Baraniuk, "Optimal Tuning of Approximate Message Passing", *Allerton Conference on Communication, Control, and Computing*, Monticello, IL, October 2014.

13. Ali Mousavi, Arian Maleki, Richard G. Baraniuk, "Asymptotic Analysis of LASSOs Solution Path" , *IEEE International Symposium on Information Theory—ISIT*, Honolulu, HI, June 2014

14. Ali Mousavi, Pedram Pad, Payam Delgosha, Farokh Marvasti, "A New Decoding Scheme for Errorless Codes for Overloaded CDMA with Active User Detection", *International Conference on Telecommunications—ICT*, Ayia Napa, Cyprus, May 2011

PATENTS

Richard G. Baraniuk, Ali Mousavi, *"Signal Recovery Via Deep Convolutional Networks"*,
USA Patent App. 16/466,718,   2019

PRESS

Google AI Blog, *"Off-Policy Estimation for Infinite-Horizon Reinforcement Learning"*   2020

INVITED TALKS

Google Developers ML Summit, Kirkland, WA, USA (YouTube Link)	2019
TTIC, Workshop on Learning-Based Algorithms, Chicago, IL, USA	2019
MIT, Computer Science & Artificial Intelligence Laboratory (CSAIL), Boston, MA, USA	2019
University of Colorado Boulder, Department of Computer Science, Boulder, CO, USA	2018
University of Utah, Department of Electrical Engineering, Salt Lake City, UT, USA	2018
Texas A&M University, Department of Computer Science, College Station, TX, USA	2018
Allerton Conference on Communication, Control, and Computing, Monticello, IL, USA	2017
Tehran University, Department of Electrical and Computer Engineering, Tehran, Iran	2017
Structural Health Monitoring Group, Rice University Dept. of Civil Engineering, Houston, TX, USA	2017
Geo-Mathematical Imaging Group, Rice University CAAM Department, Houston, TX, USA	2017
Sharif University of Technology, Winter Seminar Series, Tehran, Iran	2016

Sharif University of Technology, Department of Electrical Engineering, Tehran, Iran   2016
UCSD Workshop on Information Theory and its Applications (ITA), San Diego, CA, USA   2014
Texas Instruments Leadership University Seminar, Houston, TX, USA   2013

ACADEMIC SERVICE

Mentor
New in ML workshop, *Neural Information Processing Systems—NeurIPS*, Vancouver, BC, December 2019.

Session Chair
Machine Learning Session, *Allerton Conference on Communication, Control, and Computing, Monticello, IL, USA, 2017*

Journal/Conference Reviewer
- NeurIPS, ICML, AISTATS, ECCV, IEEE Transactions on Patttern Analysis and Machine Intelligence , IEEE Transactions on Image Processing, IEEE Transactions on Signal Processing, IEEE Transactions on Circuits and Systems for Video Technology, IEEE Signal Processing Letters, IEEE International Symposium on Information Theory, IEEE Global Communications Conference, Elsevier Signal Processing