Ehsan Hajiramezanali

Department of Electrical and Computer Engineering
3128 TAMU
College Station, TX 77843-3128

Status: **US permanent resident**
Email: ehsanr@tamu.edu
Web: ehsanhajiramezanali.github.io
Google Scholar Profile

EDUCATION

Texas A&M University — College Station, TX
Ph.D. Candidate in Electrical Engineering — Aug. 2015 - Present

Amirkabir University of Technology — Tehran, Iran
Ph.D. Candidate in Electrical Engineering — Sep. 2013 - Aug. 2015

Amirkabir University of Technology — Tehran, Iran
M.Sc. in Electrical Engineering — Sep. 2009 - Feb. 2012

K. N. Toosi University of Technology — Tehran, Iran
B.Sc. in Mechanical Engineering — Sep. 2005 - Aug. 2009

TECHNICAL SKILLS

Programming Languages: Most experienced with Python, R, MATLAB, Bash, AWK. || **Database:** SQL.
Tools & Softwares: TensorFlow, PyTorch, SciKit, NetworkX, Git, Unix, Matplotlib, Pandas, MPI, OpenMP.
ML/STAT Methods:

- Bayesian nonparametric
- autoregressive models
- (MCMC, Gibbs) sampling
- (semi-supervised) node classification
- (graph, convolutional, recurrent) NNs
- (heterogeneous) data integration
- stochastic differential equations
- latent variable models
- (implicit) variational inference
- (graph, semi-supervised) VAEs
- (Kalman, particle) filtering
- (deep) time series predictors
- (transfer, multi-domain) learning
- (node) clustering
- hierarchical models
- relational inference
- graph learning
- text generative models
- gene expression analysis
- (Bayesian) classification
- wavelet transform

SELECTED PUBLICATIONS **(Google Scholar Summary: H-index: 7, Citation: 108)**

$\star$ = equal contribution with the first author

Published/Accepted (chronological)

[C6] A. Hasanzadeh*, **E. Hajiramezanali***, S. Boluki, M. Zhou, N. Duffield, K. Narayanan, and X. Qian, "Bayesian Graph Neural Networks with Adaptive Connection Sampling", ***International Conference on Machine Learning (ICML 2020)***. (acceptance rate: 21.8%)

[C5] **E. Hajiramezanali**, A. Hasanzadeh, N. Duffield, K. Narayanan, M. Zhou, and X. Qian, "Semi-Implicit Stochastic Recurrent Neural Networks", **IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2020)**, Barcelona, Spain, May 2020. (*Oral Presentation*).

[C4] **E. Hajiramezanali**, A. Hasanzadeh, N. Duffield, K. Narayanan, M. Zhou, and X. Qian, "Variational Graph Recurrent Neural Networks", ***Neural Information Processing Systems (NeurIPS 2019)***, Vancouver, Canada, Dec. 2019. (acceptance rate: 21.1%)

[C3] A. Hasanzadeh*, **E. Hajiramezanali***, N. Duffield, K. Narayanan, M. Zhou, and X. Qian, "Semi-Implicit Graph Variational Auto-Encoders", ***Neural Information Processing Systems (NeurIPS 2019)***, Vancouver, Canada, Dec. 2019. (acceptance rate: 21.1%)

[J2] **E. Hajiramezanali**, M. Imani, U. Braga-Neto, X. Qian, and E. Dougherty, "Scalable Optimal Bayesian Classification of Single-Cell Trajectories under Regulatory Model Uncertainty", ***BMC Genomics***, Volume 20, Number 6, June 2019.

[C2] **E. Hajiramezanali**, S. Z. Dadaneh, A. Karbalayghareh, M. Zhou, and X. Qian, "Bayesian Multi-Domain Learning for Cancer Subtype Discovery from Next-Generation Sequencing Count Data", ***Neural Information Processing Systems (NeurIPS 2018)***, Montreal, Canada, Dec. 2018. (acceptance rate: 20.8%)

[C1]] **E. Hajiramezanali**, K. He, P. Figueiredo, S. Sze, X. Qian, "Impact of RNA-seq Read Alignment on Differential Alternative Splicing Detection," *14th Annual MidSouth Conference on Computational Biology and Bioinformatics* ***MCBIOS 2017***, AR, USA, March 2017.

[J1] S. H. Fouladi, **E. Hajiramezanali**, H. Amindavar, J. A. Ritcey, and P. Arabshahi, "Denoising Based on Multivariate Stochastic Volatility Modeling of Multiwavelet Coefficients," ***IEEE Transactions on Signal Processing***, Volume 61, Number 22, November 2013.

Under Review

- **E. Hajiramezanali**, A. Hasanzadeh, N. Duffield, K. Narayanan, and X. Qian, "BayReL: Bayesian Relational Learning for Multi-omics Data Integration," ***Neural Information Processing Systems (NeurIPS 2020)***.
- **E. Hajiramezanali**, S. Z. Dadaneh, P. Figueiredo, S. Sze, M. Zhou, and X. Qian, "Differential Expression Analysis of Dynamical Sequencing Count Data with a Gamma Markov Chain," ***Bioinformatics***, 2020.

ACADEMIC HONORS

- Recipient of the **Chevron Scholarship**, Texas A&M University. [2020]
- Finalist nominee for the **Best Student Paper Award**, 45th International Conference on Acoustics, Speech, and Signal Processing (ICASSP). [2020]
- Recipient of **US Residency under the Category of National Interest**. [2020]
- Finalist nominee for the **2020 Google AI Fellowship**, Texas A&M University. [2020]
- Finalist nominee for the **Outstanding Engineering Awards**, College of Engineering, Texas A&M University. [2019]
- Recipient of the **Outstanding Graduate Student Award**, Department of Electrical and Computer Engineering, Texas A&M University. [2019]
- Top 50% **highest-scoring reviewers**, NeurIPS. [2019]
- Recipient of the **Travel Grant Award** from Scientific Computing meets Machine Learning and Life Sciences. [2019]
- Recipient of the **NSF Travel Grant Award** from International Workshop on Computational Network Biology: Modeling, Analysis, and Control. [2018]
- Recipient of the **Travel Grant Award** from the 14th Annual MCBIOS Conference. [2017]
- **Ranked 71st** among nearly 40,000 participants in the Nation Wide Universities Entrance Exam for MSc. Degree among All Branches of Electrical Engineering, Iran. [2009]

EXPERIENCE

Research Experience

- **Graduate Research Assistant, Texas A&M University**, Aug. 2015 - Present.
  - Researching on graph analytics and machine learning problems including graph representation learning, graph neural networks, deep learning, and Bayesian inference.
  - Researching on Bayesian machine learning and its applications in life sciences including gene expression analysis, temporal analysis of count data, multi-omics data integration, transfer learning, multi-domain learning for cancer subtype discovery, relational inference, optimal Bayesian classification of single-cell trajectories, and drug repositioning.
- **Graduate Research Assistant, Amirkabir University of Technology**, Aug. 2009 - July 2015
  - Researched on statistical signal processing and its applications including detection and estimation, stochastic differential equations, wavelet transformation, radar & sonar, and hidden Markov models.

Teaching Experience

- **Teaching Assistant.** Texas A&M University, Aug. 2017 - May 2020.
  - Power Systems and Circuit Applications, Analog Electronics
- **Teaching Assistant.** Prof. H. Amindaver, Amirkabir University of Technology, Aug. 2013 - July 2015.
  - Digital Signal Detection and Estimation, Digital Signal Processing, Advanced Digital Communication

PROFESSIONAL ACTIVITIES

Reviewer

- **Conferences:** BHI 2017, NeurIPS 2019, AAAI 2019, EMBC 2019, NeurIPS 2020, ICML 2020, AAAI 2020, ICLR 2021
- **Journals:** IET Control, Theory & Applications, IET Radar, Sonar & Navigation, IEEE/ACM Transactions on Computational Biology and Bioinformatics, IEEE Intelligent Systems, PLOS ONE, IEEE Transactions on Signal Processing

Open source contributions

- VGRNN, SIG-VAE, GDC, GMNB: [GitHub Repositories]