Mohammad Reza Karimi Jaghargh https://moreka.github.io

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Degrees

ETH Zürich
Learning and Adaptive Systems (LAS) Group
Ph.D. in Computer Science
Thesis: Stochastic Approximation on Riemannian Manifolds and the Space of Measures
Supervised by Prof. Andreas Krause 2024

ETH Zürich
Learning and Adaptive Systems (LAS) Group
M.Sc. in Computer Science
Thesis: Consistent Online Learning
Supervised by Prof. Andreas Krause 2019

Sharif University of Technology
B.Sc. in Computer Engineering 2016
B.Sc. in Pure Mathematics 2016

Appointments

Massachusetts Institute of Technology
Department of Mathematics, *C.L.E. Moore Instructor of Mathematics* 2025–

Honors and Awards

Silver Medal for Iranian National Mathematical Olympiad 2011
1st rank in I-COM Data Science Hackathon held in Portugal 2017

Publications

M. R. Karimi*, Y-P. Hsieh*, A. Krause. *Sinkhorn Flow: A Continuous-Time Framework for Understanding and Generalizing the Sinkhorn Algorithm*, accepted in 26th Artificial Intelligence and Statistics Conference (AISTATS), 2024.

M. R. Karimi*, Y-P. Hsieh*, A. Krause. *A Dynamical System View of Langevin-Based Non-Convex Sampling*, Presented **as a spotlight** in 37th Conference on Neural Information Processing Systems (NeurIPS), 2023.

M. R. Karimi, Y-P. Hsieh, A. Krause. *Stochastic Approximation Algorithms for Systems of Interacting Particles*, Presented in 37th Conference on Neural Information Processing Systems (NeurIPS), 2023.

Y-P. Hsieh, **M. R. Karimi**, A. Krause, P. Mertikopoulos. *Riemannian Stochastic Optimization Methods Avoid Strict Saddle Points*, Presented in 37th Conference on Neural Information Processing Systems (NeurIPS), 2023.

V. Borovitskiy, **M. R. Karimi**, V. R. Somnath, A. Krause. *Isotropic Gaussian Processes on Finite Spaces of Graphs*, Proceedings of 26th Conference on Artificial Intelligence and Statistics (AISTATS), 2023.

M. R. Karimi*, Y-P. Hsieh*, P. Mertikopoulos, A. Krause. *The Dynamics of Riemannian Robbins-Monro Algorithms*, Proceedings of Thirty Fifth Conference on Learning Theory (COLT), 2022.

M. R. Karimi, N. Gürel, B. Karlaš, J. Rausch, C. Zhang, A. Krause. *Online Active Model Selection for Pre-trained Classifiers*, Proceedings of The 24th International Conference on Artificial Intelligence and Statistics (AISTATS), 2021.

M. R. Karimi, A. Krause, S. Lattanzi, S. Vassilvitskii. *Consistent Online Optimization: Convex and Submodular*, 22nd International Conference on Artificial Intelligence and Statistics (AIS-

TATS), 2019.

M. R. Karimi, M. Lucic, H. Hassani, A. Krause. *Stochastic Submodular Maximization: The Case of Coverage Functions*, Advances in Neural Information Processing Systems (NeurIPS), 2017.

M. R. Karimi*, E. Tavakoli*, M. Farajtabar, L. Song, M. Gomez-Rodriguez. *Smart broadcasting: Do you want to be seen?*, SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2016.

Employment History

ETH Zürich 2016–19
Research Assistant. Supervised by Prof. Andreas Krause

Max Planck Institute for Software Systems Summer 2016
Research internship. Supervised by Prof. Manuel Gomez-Rodriguez

Services

Reviewer for the following conferences: ICML (2019), NeurIPS (2019, 2020, 2022, 2023), AAAI (2020, 2021), COLT (2020, 2022, 2024), ICLR 2021.

Talks

SDEs and Games via Dynamical Systems Jun. 2023
Alpine Game Theory Symposium (AGTS), Grenoble, France.

Sinkhorn Flows Dec. 2023
Online Active Model Selection Aug. 2021
Consistent Online Learning Jul. 2019
Amirkabir Artificial Intelligence Summer Summit (AAISS), Tehran, Iran (Online).

Submodularity in Data Science (with Andreas Krause) Jun. 2018
Data Science Summer School, École Polytechnique, Paris

Short-course in Submodularity Dec. 2017
Stochastic Submodular Maximization Dec. 2017
Short-course in Mathematical Optimization Jan. 2017
Smart Broadcasting: Do you want to be seen? Dec. 2015
Sharif University's Winter Seminar Series (WSS)

Teaching

Massachusetts Institute of Technology
18.05 Introduction to Probability and Statistics (Instructor) Spring 2025
18.650 Fundamentals of Statistics (Teaching Assistant) Fall 2025

ETH Zürich
Introduction to Machine Learning (Teaching Assistant) 2018, 2019, 2020, 2021, 2022 (Head TA), 2024
Probabilistic Artificial Intelligence (Teaching Assistant) Autumn 2019, 2020, 2021, and 2023.

Sharif University of Technology 2011–16
Teaching Assistant for Discrete Structures, Data Structures, Introduction To Programming (C), Advanced Programming (C++), Engineering Probability and Statistics, Systems Analysis and Design, Operating Systems, Signals and Systems, Modern Information Retrieval.

Outreach

Allame Helli 1 Highschool
Combinatorics and problem-solving classes for preparation for the Mathematics Olympiad.

Young Scholars Club
Geometry and optimization classes for gold-medalists of the Iranian Mathematics Olympiad.

References

Prof. Andreas Krause (`krausea@ethz.ch`)
Prof. Panayotis Mertikopoulos (`panayotis.mertikopoulos@imag.fr`)