Hamed Mahdavi

Personal Data

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Research Interests

- Probabilistic Machine Learning
- Approximate Inference
- Reinforcement Learning
- Generative Modeling
- Optimization in Machine Learning
- Fairness and Interpretability in Machine Learning
- Statistical Learning Theory

Education

Current / Sep 2017 — Master of Science in Computer Engineering,
Sharif University of Technology, Tehran, Iran
Major: Artificial Intelligence
Thesis: Approximate Inference in Probabilistic Network Models | Supervisor: Prof. Hamid Beygi
Gpa: 18.46/20

Sep 2012 — Bachelor of Science in Computer Engineering,
Sharif University of Technology, Tehran, Iran
Major: Software Engineering
Thesis: "A Survey On Speech Enhancement Algorithms"
Supervisor: Prof.Hossein Sameti
Gpa: 15.7/20

July 2011 — Mathematical Olympiad Summer Set,
Young Scholars Club

Work and Research Experience

Dec 2019-Feb 2019 | Research Collaborator at A Hybrid Distributed SGD Method for Non-Convex Optimization
The project was on a new approach in distributed optimization which combines zeroth-order and first-order gradients to optimize the communication rate. In this project which I collaborated with Naeemeh Omidvar and it is submitted to ICML'20.

Feb 2019-Now | Research Collaborator at Scalable Network Inference on MDND Project

MDND (Mixture of Dirichlet Network Distributions) is a Bayesian non-parametric model for simultaneous learning and clustering of a social network graph. Learning and Inference have always been challenging in in this class of models. In this project, I worked under supervision of Baharan Mirzasoleiman and Mahmoudreza Babaei to overcome this problem from a new perspective, specifically applied on MDND model.

Aug 2018-Jan 2019 | Research Intern at Max Planck Institute, Saarbrücken, Germany

The Max Planck Institute for Software Systems (MPI-SWS) is a computer science research institute co-located in Saarbrücken and Kaiserslautern. In my six months internship period, we worked on theoretical aspects of reinforcement learning under supervision of Dr. Adish Singla. Our main work was on multi-agent reinforcement learning, adversarial attacks and human-centered reinforcement learning. In each topic, we tried to model the topic as a theoretical framework in discrete MDP's

Jul-Sep 2017 | Summer Intern at Faragostar, Tehran

Faragostar is a leading developer of office automation applications and financial management software in Iran.

Oct 2012-Apr 2013 | Mathematical Olympiad Teacher at Allameh Helli Highschool, Tehran

Allameh Helli is an outstanding talent school in Iran and I was a mathematical olympiad courses teacher for Number theory.

Honors and Awards

June 2017 Ranked 5th in the Artificial Intelligence field, 2nd in the Networks and Security field and 4th in the IT field of nationwide MSc entrance exam

June 2012 Ranked 217th in Iran National Universities Entrance Exam among 300K+ students

Sept. 2011 Silver Medal, in 29th Iranian National Mathematical Olympiad

Publications and Review Experiences

- A. Ghosh, S. Tschiatschek, H. Mahdavi, and A. Singla, "Towards Deployment of Robust AI Agents for Human-Machine Partnerships," In *AAMAS*, 2020.
- Reviewer at *the Conference on Uncertainty in Artificial Intelligence*, 2020.

Teaching Assistance

Spring 2020 Statistical Learning Theory (Prof. Beygi)
Sharif University of Technology, Tehran, Iran

Spring 2019 Convex Optimization (Prof. Jafari)
Sharif University of Technology, Tehran, Iran

Spring 2019 Engineering Probability and Statistics (Prof. Jafari)
Sharif University of Technology, Tehran, Iran

Spring 2018 Signals and Systems (Prof. Sameti)
Sharif University of Technology, Tehran, Iran

Spring 2015 Design and Analysis of Algorithms (Prof. Ghodsi)
Sharif University of Technology, Tehran, Iran

Related Courses

Graduate:	Stochastic Processes (18.8/20), Speech Processing (18/20), Statistical Learning Theory (18.5/20), Probabilistic Graphical Models (17.7/20), Computational Geometry (18/20),Advanced Statistical Machine Learning (19.3/20), Convex Optimization (19/20), Algorithmic Game Theory (17.9/20),
Undergraduate:	Design and Analysis of Algorithms (19.5/20), Signal Processing (18/20), Probability and Statistics (16/20), Data Structures and Algorithms (19.1/20), Discrete Structures (20/20)

Computer Skills

Programming	: Java, Scala, Python, C#, Matlab, R
Web	: HTML, CSS, JavaScript, Django, Play Framework, AngularJs, Bootstrap
Tools	: NumPy, Scikit-Learn, PyTorch, Elasticsearch
DB	: PostgreSQL, MongoDB
OS	: Windows, Ubuntu
Version Control	: Git
Word Processor	: LaTeX, Microsoft Word

Languages

Persian:	Mothertongue
English:	Fluent

language proficiency test score

TOEFL iBT:	100

Interests and Activities

Guitar, Badminton, Melodica, Reading Books, Movies, Philosophy