Arman Adibi

Research Interests

- Distributed Learning
- Minimax Optimization
- Submodular Optimization
- Hypothesis Testing
- Adversarial Robustness
- Reinforcement Learning
- Decision Making under Uncertainty
- Change Detection

Experience

Sep2023-Now **Postdoctoral Research Associate**, *Department of ECE*, Princeton University.
- Advisor: Prof. H. Vincent Poor and Prof. Sanjeev R. Kulkarni

Sep2018-Aug2023 **Research Assistant**, *Department of ESE*, University of Pennsylvania.
- Advisor: Dr. Hamed Hassani

Apr2016–Sep2018 **Research Assistant**, *Department of ECE*, Isfahan University of Technology.
- Advisor: Dr. Mohammad Mahdi Naghsh

Education

2018–2023 **Ph.D. Electrical & Systems Engineering**
University of Pennsylvania,
Advisor: Prof. Hamed Hassani.
Thesis: Discrete and Continuous Optimization for Collaborative and Multi-task Learning
Thesis Committee: Prof. Sanjay Shakkottai, Prof. George J. Pappas, and Prof. Amin Karbasi

2013–2018 **B.Sc. Electrical Engineering**
(Communications System with a minor in mathematics)
Isfahan University of Technology.

Publication

-Conference Papers

- (Reinforcement Learning, Distributed Learning) Adibi, A., Dal Fabbro, N., Kulkarni, S., Poor, H. V., Pappas, G. J., & Mitra, A. **"DASA: Delay-Adaptive Multi-Agent Stochastic Approximation "** Submitted to **IEEE Conference on Decision and Control (CDC), 2024**.

- (Reinforcement Learning, Distributed Learning) Adibi, A., Dal Fabbro, N., Schenato, L., Kulkarni, S., Poor, H. V., Pappas, G. J., Hassani, H., & Mitra, A. **" Stochastic Approximation with Delayed Updates: Finite-Time Rates under Markovian Sampling "** will appear in **International Conference on Artificial Intelligence and Statistics (AISTATS), 2024**.

- (Reinforcement Learning, Distributed Learning) Dal Fabbro, N., Adibi, A., Mitra, A., & Pappas,G. J., **" Finite-Time Analysis of Asynchronous Multi-Agent TD Learning "** will appear in **American Control Conference (ACC), 2024**.

- (Deep Learning, Adversarial Robustness) Lei, E., Adibi, A., & Hassani, H., **" Score-Based Methods for Discrete Optimization in Deep Learning "** Submitted to **IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), 2024**.

-(Minimax Optimization, Distributed Learning) Adibi, A., Mitra, A., & Hassani, H., **" Min-Max Optimization under Delays "** will appear in **American Control Conference (ACC), 2024**.

-(Decision Making under Uncertainty, Distributed Learning) Adibi, A., Mitra, A., Pappas, G. J., & Hassani, H., **" Collaborative Linear Bandits with Adversarial Agents: Near-Optimal Regret Bounds " Advances in Neural Information Processing Systems(NeurIPS), 2022**.

-(Adversarial Robustness, Distributed Learning) Adibi, A., Mitra, A., Pappas, G. J., & Hassani, H., **" Distributed Statistical Min-Max Learning in the Presence of Byzantine Agents " IEEE Conference on Decision and Control (CDC), 2022**.

-(Adversarial Robustness, Submodular Optimization) Adibi, A., Mokhtari, A., & Hassani, H., **" Minimax Optimization: The Case of Convex-Submodular" International Conference on Artificial Intelligence and Statistics (AISTATS), 2022** .
Spotlight in "Subset Selection in Machine Learning" Workshop, ICML 2021 .
***Oral presentation** in AISTATS 2022 (top 2% of submitted papers).*

-(Distributed Learning, Submodular Optimization) Robey, A., Adibi, A., Schlotfeldt, B., Hassani, H., & Pappas, G. J., **" Optimal Algorithms for Submodular Maximization with Distributed Constraints" Learning for Dynamics and Control (L4DC), 2021** .

-(Distributed Learning, Submodular Optimization) Adibi, A., Mokhtari, A., & Hassani, H., **" Submodular Meta-Learning " Advances in Neural Information Processing Systems(NeurIPS), 2020**.

-Journal Papers

-(Non-convex Optimization, Minimax Optimization) Naghsh, M. M., Masjedi, M., Adibi, A., & Stoica, P., **" Max-Min Fairness Design in MIMO Interference Channels: A Minorization-Maximization Approach" IEEE Transactions on Signal Processing (TSP), 2019**.

Honors &Awards

2017 **Third Prize**, International Mathematics Competition **(IMC)** for University Students.

2018 **Lilian Beck Fellowship** , University of Pennsylvania.

2018 **The Dean's Fellowship**, University of Pennsylvania.

Professional Activities

-Service:

- Session Chair at CISS 2024

-Reviewer for:

- International Conference on Machine Learning(ICML)
- International Conference on Learning Representations (ICLR)
- Conference on Neural Information Processing Systems(NeurIPS)
- International Conference on Artificial Intelligence and Statistics(AISTATS)
- IEEE International Symposium on Information Theory(ISIT)
- IEEE Transactions on Automatic Control Journal(TAC)
- IEEE Conference on Decision and Control(CDC)
- Learning for Dynamics and Control (L4DC)
- IEEE American Control Conference(ACC)

Teaching and Assistantships

Teaching Assistant, *Linear System Theory*,
ECE Department at UPenn.
- Dr. George J. Pappas

Teaching Assistant, *Probability Theory*,
ECE Department at UPenn.
- Dr. Santosh S. Venkatesh

Teaching Assistant, *Applied Linear Algebra*,
Math Department at Isfahan University of Technology.
- Dr. Javadi

Teaching Assistant, *Signals and systems*,
ECE Department at Isfahan University of Technology.
- Dr. Khosravifard

Teaching Assistant, *Fundamentals of Mathematical Analysis*,
Math Department at Isfahan University of Technology.
- Dr. Gazor

Teaching Assistant, *Foundations Of Mathematics*,
Math Department at Isfahan University of Technology.
- Dr. Bahrami

Courses

Graduate Courses

- Mathematics of High-Dimensional Data, Functional Analysis, Randomized Algorithms, Deep Learning, Statistics for Data Science, Probability Theory, Linear System Theory, Mathematical Statistics, Optimization in Machine Learning, Advanced Statistical Inference, Advanced Topology, Real Analysis, Optimal Control, Spectral Estimation, Digital Signal Processing, Information Theory(Audit), Modern Convex Optimization(Audit), Microeconomic Theory II(Audit)

Relevant Undergraduate Courses

- Advanced Probability, Graph theory, Combinatorics, Discrete Dynamical System, Advanced Linear Algebra, Mathematical Analysis, Abstract Algebra 1, Fundamental Mathematical Analysis, Linear Algebra, Digital Communication, Signals & Systems, Engineering Economics and Industrial Management , Field & Waves, Wireless Communication , Numerical Analysis, ODE

Technical skills

Programming: C++/C, python, TensorFlow, Pytorch, Matlab, Verilog

Typesetting: LaTeX, Microsoft Office