

Arman Adibi

Research Interests

- Minimax Optimization
- Robust Optimization
- Distributed Optimization
- Hypothesis Testing
- Reinforcement Learning
- Decision Making Under Uncertainty
- Submodular Optimization
- Quickest Change Detection

Experience

- 2023-Now **Postdoctoral Research Associate**, Department of Electrical and Computer Engineering, Princeton University.
- Advisor: Prof. H. Vincent Poor and Prof. Sanjeev R. Kulkarni
- 2018-2023 **Research Assistant**, Department of Electrical & Systems Engineering, University of Pennsylvania.
- Advisor: Dr. Hamed Hassani

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 with a Minor in Mathematics**
Isfahan University of Technology.

Honors & Awards

- 2018 **Lilian Beck Fellowship** , University of Pennsylvania.
- 2018 **The Dean's Fellowship**, University of Pennsylvania.
- 2017 **Third Prize**, International Mathematics Competition (**IMC**) for University Students.

Publications

-Conference Papers

- (Reinforcement Learning, Distributed Optimization) 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** " **International Conference on Artificial Intelligence and Statistics (AISTATS)**, 2024.
- (Reinforcement Learning, Distributed Optimization) Adibi, A., Dal Fabbro, N., Kulkarni, S., Poor, H. V., Pappas, G. J., & Mitra, A. " **DASA: Delay-Adaptive Multi-Agent Stochastic Approximation** " **IEEE Conference on Decision and Control (CDC)**, 2024.
- (Reinforcement Learning, Distributed Optimization) Dal Fabbro, N., Adibi, A., Mitra, A., & Pappas, G. J., " **Finite-Time Analysis of Asynchronous Multi-Agent TD Learning** " **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** " **American Control Conference (ACC)**, 2024.
- (Decision Making under Uncertainty, Distributed Optimization) 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.

Selected Presentations

- Stochastic Approximation with Delayed Updates, 2024 INFORMS Annual Meeting.
- Delay in Reinforcement Learning, Princeton Machine Learning Theory Summer School, 2024.
- Discrete and Continuous Optimization for Collaborative and Multi-task Learning, Rutgers Business School, 2024.
- Discrete Optimization in Machine Learning, CMU Machine Learning Department, 2023.
- Collaborative Linear Bandits with Adversarial Agents: Near-Optimal Regret Bounds, NeurIPS, 2022.
- Minimax Optimization: The Case of Convex-Submodular, **Oral presentation** in AISTATS 2022.
- Minimax Optimization: The Case of Convex-Submodular, **Spotlight** in "Subset Selection in Machine Learning" Workshop, ICML 2021.
- Submodular Meta-Learning, NeurIPS, 2020.

Professional Activities

-Services:

- Session Chair at Annual Conference on Information Sciences and Systems (CISS), 2024

-Memberships:

- INFORMS Student Member

-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,
ESE Department at UPenn.

- Dr. George J. Pappas

Teaching Assistant, Probability Theory,
ESE 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

References

Sanjeev Kulkarni, William R. Kenan, Jr. Professor of Department of Operations Research and Financial Engineering, Electrical and Computer Engineering, and Philosophy, Princeton University.
E-mail : kulkarni@princeton.edu

H. Vincent Poor, Michael Henry Strater University Professor of Operations Research and Financial Engineering, Electrical and Computer Engineering, and Applied Mathematics, Princeton University.
E-mail : poor@princeton.edu

George J. Pappas , UPS Foundation Professor of Electrical and System Engineering, and Computer Science, University of Pennsylvania.
E-mail : pappasg@seas.upenn.edu

Vahid Tarokh, Rhodes Family Distinguished Professor of Mathematics, Electrical and Computer Engineering, and Computer Science, Duke University.
E-mail : vahid.tarokh@duke.edu

Hamed Hassani, Professor of Electrical and System Engineering, Statistics, and Computer Science, University of Pennsylvania.
E-mail : hassani@seas.upenn.edu

Aritra Mitra, Professor of Electrical and Computer Engineering, North Carolina State University.
E-mail : amitra2@ncsu.edu

Aryan Mokhtari, Professor of Electrical and Computer Engineering, University of Texas at Austin.
E-mail : mokhtari@austin.utexas.edu

Taposh Banerjee, Professor of Industrial Engineering, University of Pittsburgh.
E-mail : taposh.banerjee@pitt.edu