

## Research Interests

- Distributed Learning
- Minimax Optimization
- Submodular Optimization
- Convex & Non-convex Optimization
- Adversarial Robustness
- Reinforcement Learning
- Decision Making under Uncertainty
- Change Detection & Score Matching

## Experience

- Sep2023- **Postdoctoral Researcher**, *Department of ECE*, Princeton University.  
Now - Advisor: Prof. H. V. Poor and Prof. S. Kulkarni
- Sep2018- **Research Assistant**, *Department of ESE*, University of Pennsylvania.  
2023 - Advisor: Dr. Hamed Hassani
- Apr2016- **Research Assistant**, *Department of ECE*, Isfahan University of Technology.  
Sep2018 - Advisor: Dr. Mohammad Mahdi Naghsh

## Education

- 2018–2023 **Ph.D. Machine Learning and Optimization**  
**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**.
- 2009–2013 **High school**, *National Organization for Development of Exceptional Talents (NODET)*, Ejehi High School.

## Publication

### -Conference Papers

- (**Reinforcement Learning, Distributed Learning**) " **Stochastic Approximation with Delayed Updates: Finite-Time Rates under Markovian Sampling** " Submitted to **International Conference on Artificial Intelligence and Statistics (AISTATS)**, 2024.
- (**Reinforcement Learning, Distributed Learning**) " **Finite-Time Analysis of Asynchronous Multi-Agent TD Learning** " Submitted to **American Control Conference (ACC)**, 2024.

- (Deep Learning, Adversarial Robustness) " 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) " Min-Max Optimization under Delays " Submitted to American Control Conference ([ACC](#)), 2024.
- (Decision Making under Uncertainty, Distributed Learning) " Collaborative Linear Bandits with Adversarial Agents: Near-Optimal Regret Bounds " Advances in Neural Information Processing Systems([NeurIPS](#)), 2022.
- (Adversarial Robustness, Distributed Learning) " Distributed Statistical Min-Max Learning in the Presence of Byzantine Agents " IEEE Conference on Decision and Control ([CDC](#)), 2022.
- (Adversarial Robustness, Submodular Optimization) " 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) " Optimal Algorithms for Submodular Maximization with Distributed Constraints" Learning for Dynamics and Control ([L4DC](#)), 2021 .
- (Distributed Learning, Submodular Optimization) " Submodular Meta-Learning " Advances in Neural Information Processing Systems([NeurIPS](#)), 2020.
- Journal Papers
- (Non-convex Optimization, Minimax Optimization) " 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.

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## Professional Activities

### -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)

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## 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

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## 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

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### Technical skills

Programming: C++/C, PYTHON, TENSORFLOW, PYTORCH, MATLAB, VERILOG

Typesetting: L<sup>A</sup>T<sub>E</sub>X, Microsoft Office

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### References

**Prof. H. Vincent Poor** , *Department of ECE*, Princeton University.

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**Prof. George J. Pappas** , *Department of ESE*, University of Pennsylvania.

E-mail : pappasg@seas.upenn.edu

**Prof. Sanjeev Kulkarni** , *Department of ECE*, Princeton University.

E-mail : kulkarni@princeton.edu

**Prof. Hamed Hassani**, *Department of ESE*, University of Pennsylvania.

E-mail : hassani@seas.upenn.edu

**Prof. Aryan Mokhtari**, *Department of ECE*, University of Texas at Austin.

E-mail : mokhtari@austin.utexas.edu