Alireza Fallah

UC Berkeley
Sutardja Dai Hall, Floor 7, Desk A2
2594 Hearst Ave, Berkeley, CA 94720

E-mails: afallah@mit.edu
afallah@berkeley.edu
Homepage: afallah.lids.mit.edu

Education

Massachusetts Institute of Technology June 2019 - July 2023
Ph.D. in Electrical Engineering and Computer Science (Minor in Economics) GPA: 5.00/5.00
Thesis: Algorithmic Interactions With Strategic Users: Incentives, Interplay, and Impact
Thesis committee: Prof. Asuman Ozdaglar (advisor), Prof. Daron Acemoglu, Prof. Costis Daskalakis
ACM SIGecom Doctoral Dissertation Award Honorable Mention

Massachusetts Institute of Technology September 2017- June 2019
M.S. in Electrical Engineering and Computer Science GPA: 5.00/5.00
Thesis: Robust Accelerated Gradient Methods for Machine Learning
Thesis Advisor: Prof. Asuman Ozdaglar
Ernst A. Guillemin Best Thesis Award in Electrical Engineering (1st prize)

Sharif University of Technology, Tehran, Iran 2012-2017
B.Sc. in Electrical Engineering Cumulative GPA: 19.63/20
B.Sc. in Mathematics

Employment

UC Berkeley August 2023 - Present
Postdoctoral Researcher
Host: Prof. Michael I. Jordan

Simons Laufer Mathematical Sciences Institute (formerly MSRI) August 2023 - December 2023
The Gamelin Postdoctoral Fellow
Program: Mathematics and Computer Science of Market and Mechanism Design

Apple Inc. June 2020- August 2020
Research Intern
Apple ML Privacy Team

École Polytechnique Fédérale de Lausanne, Lausanne (EPFL) June 2015-August 2015
Research Intern
Supervisor: Prof. Michael Unser

Research Interests

- Machine learning theory, Market and mechanism design, Optimization, and Privacy.

Honors & Awards

- Honorable Mention (runner-up) in the **ACM SIGecom Dissertation Award**
- Recipient of the **Gamelin Endowed Postdoctoral Fellowship**, Simons Laufer Mathematical Sciences Institute (formerly Mathematical Sciences Research Institute).

- Recipient of the **2021 Apple Scholars in AI/ML PhD fellowship**.
- **Ernst A. Guillemin SM Thesis Award** in Electrical Engineering, 2020.
- **MathWorks Engineering Fellow**, Classes of 2019-2020 & 2020-2021.
- **Siebel Scholar**, Class of 2019. Awarded annually for academic excellence and demonstrated leadership to over 90 top students from the world's leading graduate schools.
- **Ranked 1st in Cumulative GPA** among all entrants of 2012 (nearly 220 students), Electrical Engineering Department, Sharif University of Technology.
- **First prize**, 23rd International Mathematics Competition (**IMC**), Bulgaria, 2016.
- **Silver Medal**, 53rd International Mathematical Olympiad (**IMO**), Argentina, 2012.
- **Silver Medal**, 52nd International Mathematical Olympiad (**IMO**), Netherlands, 2011.
- **Gold Medal**, 29th Iranian National Mathematical Olympiad, Iran, 2011.
- **Gold Medal**, 28th Iranian National Mathematical Olympiad, Iran, 2010.

Preprints and Working papers

[1] **A. Fallah***, M.I. Jordan*, A. Ulichney*, *Fair Allocation in Dynamic Mechanism Design*, Preprint, 2024.

- Shorter version accepted at the **ICML workshop on Humans, Algorithmic Decision-Making and Society**, 2024.

[2] **A. Fallah***, M.I. Jordan*, A. Makhdoumi*, A. Malekian*, *On Three-Layer Data Markets*, Preprint, 2024.

- Shorter version accepted for **Oral presentation** at the **ICML workshop on Agentic Markets**, 2024.

[3] **A. Fallah***, M.I. Jordan*, A. Makhdoumi*, A. Malekian*, *The Limits of Price Discrimination Under Privacy Constraints*, Preprint, 2024.

- Conference version accepted at the **ESIF Economics and AI+ML Meeting**, Cornell University, 2024.

[4] D. Acemoglu*, **A. Fallah***, A. Makhdoumi*, A. Malekian*, A. Ozdaglar*, *How Good Are Privacy Guarantees? Platform Architecture and Violation of User Privacy*, Preprint, 2023.

- Conference version accepted at the **Conference on Web and Internet Economics (WINE)**, 2023.

Publications

[5] **A. Fallah***, M.I. Jordan*, *Contract Dsign With Safety Inspections*, **ACM Conference on Economics and Computation (EC)**, 2024.

- Also accepted at the **Symposium on Foundations of Responsible Computing (FORC)**, 2024.

[6] D. Acemoglu*, **A. Fallah***, A. Giometto*, D. Huttenlocher*, A. Ozdaglar*, F. Parise*, S. Pattathil*, *Optimal adaptive testing for epidemic control: combining molecular and serology tests*, **Automatica**, 2024.

[7] **A. Fallah***, A. Makhdoumi*, A. Malekian*, A. Ozdaglar*, *Bridging Central and Local Differential Privacy in Data Acquisition Mechanisms*, Advances in Neural Information Processing Systems (**NeurIPS**), 2022.

[8] **A. Fallah***, A. Makhdoumi*, A. Malekian*, A. Ozdaglar*, *Optimal and Differentially Private Data Acquisition: Central and Local Mechanisms*, **Operations Research**, 2023.

- Conference version accepted at:
  - **ACM Conference on Economics and Computation (EC)**, 2022.
  - **ICML Workshop on Theory and Practice of Differential Privacy (TPDP)**, Baltimore, July 2022

[9] **A. Fallah***, M. Gürbüzbalaban*, A. Ozdaglar*, U. Şimşekli*, L. Zhu*, *Robust distributed accelerated stochastic gradient methods for multi-agent networks*, **Journal of Machine Learning Research (JMLR)**, 2022.

[10] J. Fageot*, **A. Fallah***, T.Horel*, *Entropic Compressibility of Lévy Processes*, **IEEE Transactions on Information Theory**, 2022.

[11] **A. Fallah**, A. Mokhtari, A. Ozdaglar, *Generalization of Model-Agnostic Meta-Learning Algorithms: Recurring and Unseen Tasks*, Advances in Neural Information Processing Systems (**NeurIPS**), 2021.

[12] **A. Fallah**, K.Georgiev, A. Mokhtari, A. Ozdaglar, *On the Convergence Theory of Debiased Model-Agnostic Meta-Reinforcement Learning*, Advances in Neural Information Processing Systems (**NeurIPS**), 2021.

[13] H. Asi*, J. Duchi*, **A. Fallah***, O. Javidbakht*, K. Talwar*, *Private Adaptive Gradient Methods for Convex Optimization*, International Conference on Machine Learning (**ICML**), 2021.

[14] T. Diamandis*, Y. Eldar*, **A. Fallah***, F. Farnia*, A. Ozdaglar*, *A Wasserstein Minimax Framework for Mixed Linear Regression*, International Conference on Machine Learning (**ICML**), 2021 **(accepted for Oral presentation)**.

[15] **A. Fallah**, A. Mokhtari, A. Ozdaglar, *Personalized Federated Learning: A Meta-Learning Approach*, Advances in Neural Information Processing Systems (**NeurIPS**), 2020.

[16] **A. Fallah**, A. Mokhtari, A. Ozdaglar, *On the Convergence Theory of Gradient-Based Model-Agnostic Meta-Learning Algorithms*, International Conference on Artificial Intelligence and Statistics (**AISTATS**), 2020.

[17] **A. Fallah***, A. Ozdaglar*, S. Pattathil*, *An Optimal Multistage Stochastic Gradient Method for Minimax Problems*, IEEE Conference on Decision and Control (**CDC**), 2020.

[18] N.S. Aybat*, **A. Fallah***, M. Gürbüzbalaban*, A. Ozdaglar*, *Robust Accelerated Gradient Methods for Smooth Strongly Convex Functions*, **SIAM Journal on Optimization (SIOPT)**, Volume 30, Issue 1, 2020.

[19] N.S. Aybat*, **A. Fallah***, M. Gürbüzbalaban*, A. Ozdaglar*, *A Universally Optimal Multistage Accelerated Stochastic Gradient Method*, Advances in Neural Information Processing Systems (**NeurIPS**), 2019.

[20] J. Fageot*, **A. Fallah***, M. Unser*, *Multidimensional Lévy White Noise in Weighted Besov Spaces*, **Stochastic Processes and their Applications**, Volume 127, Issue 5, 2017.

[21] E. Mohammadi, **A. Fallah**, F. Marvasti, *Sampling and Distortion Tradeoffs for Indirect Source Retrieval*, **IEEE Transactions on Information Theory**, vol. 63, no. 11, pp. 6833-6848, 2017.

$*$: Authors arranged in alphabetic order.

Invited Talks

- Digital Activities seminar series, Paris Dauphine University, June 2024.
- The American Economic Association Annual Meeting (ASSA), San Antonio, January 2024.
- Berkeley Laboratory for Information and System Sciences (BLISS) Seminar, October 2023.
- Rice University, Computational Applied Mathematics & Operations Research Department, April 2023
- CMU, Electrical and Computer Engineering Department, April 2023.
- USC, Electrical and Computer Engineering Department, March 2023
- McGill University, Computer Science Department, March 2023
- University of Alberta, Computer Science Department, March 2023
- Rensselaer Polytechnic Institute, Computer Science Department, February 2023
- Stanford, Graduate School of Business, February 2023.
- CMU, Tepper School of Business, February 2023.
- Google Research, Algorithms Seminar, January 2023.
- Chicago Booth School of Business, January 2023.
- Cornell, School of Operations Research and Information Engineering, January 2023.
- UT Austin, McCombs School of Business, November 2022.
- Cornell ORIE Young Researchers Workshop, Ithaca, October 2022.
- Federated Learning One World Seminar (FLOW), July 2020.

Teaching & Mentoring Experiences

- Massachusetts Institute of Technology
  - Mentoring a summer intern, *MIT Summer Research Program (MSRP)*, Summer 2021
  - Mentoring two undergraduate students, MIT Undergraduate Research Opportunities Program (UROP), 2020-2021
  - Teaching Assistant for *Fundamentals of Probability (6.436)*, Fall 2020.
- Sharif University of Technology
  - Teaching Assistant for *Introduction to Wireless Communications*, Spring 2016.
  - Teaching Assistant for *Engineering Mathematics*, Fall 2015.
  - Teaching Assistant for *Principles of Economics*, Spring 2015.
  - Teaching Assistant for *Probability and Statistics*, Spring 2015.

Professional Services & Activities

- **Reviewing** services:
  - *Journals*: Operations Research, Management Science, Journal of Machine Learning Research (JMLR), Journal of the Royal Statistical Society, IEEE Transactions on Automatic Control (TAC), and Automatica.
  - *Conferences*: ACM Conference on Economics and Computation (EC), Conference on Neural Information Processing Systems (NeurIPS), International Conference on Machine Learning (ICML), International Conference on Learning Representations (ICLR), International Conference on Artificial Intelligence and Statistics (AISTATS), Conference on Web and InterNet Economics (WINE), and International Symposium on Algorithmic Game Theory.
- Session chair, INFORMS Annual Meeting, 2019 and 2022-2024.
- Member of **LIDS Mentoring Committee**, 2019-2020
- Member of **LIDS & Stats Tea Talks Committee**, 2019-2020 **(CoSI)** in **Sidney Pacific Graduate Community**, 2019-2020
- Member of **LIDS Student Conference Committee**, 2018-2019.
- Executive staff of 1st **Iranian Geometry Olympiad**, Isfahan, Iran, 2014.