

# Ashia Wilson

Electrical Engineering & Computer Science Department  
Massachusetts Institute of Technology  
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## Employment

- 2021– **Assistant Professor**, Massachusetts Institute of Technology
- 2018–2020 **Postdoctoral Researcher**, Microsoft Research, New England
- 2017 **Summer Intern**, Google AI
- 2011–2012 **Research Assistant**, Massachusetts Institute of Technology & Harvard University

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## Education

- 2018 **PhD, Statistics**, University of California, Berkeley  
Advisors: Michael I. Jordan and Benjamin Recht  
Thesis: Lyapunov Arguments in Optimization
- 2007–2011 **BA, Applied Mathematics & Philosophy**, with honors, Harvard University

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## Awards

- 2017 NeurIPS spotlight paper, The Marginal Value of Adaptive Methods in Machine Learning
- 2017 Rising stars in EECS, Carnegie Melon University
- 2014–2017 Graduate Research Fellowship, National Science Foundation
- 2012–2014 Chancellors Fellowship, University of California, Berkeley
- 2010 Fung Fellowship, Harvard University

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## Selected Publications

Wilson, A. C., Recht, B. and Jordan, M. I., “A Lyapunov analysis of momentum methods in optimization,” in the Journal of Machine Learning Research, 2021.

Wilson, A. C., Kasy, M, and Mackey, L., “Approximate cross-validation: guarantees for model assessment and model selection,” in the International Conference on Artificial Intelligence and Statistics, 2020.

Liu, L. T., Wilson, A. C., Haghtalab, N., Kalai, A. T., Borgs, C., and Chayes, J. “The disparate equilibria of algorithmic decision making when individuals invest rationally,” in the ACM conference on Fairness, Accountability and Transparency, 2020.

Wilson, A. C., Mackey, L., and Wibisono, A. “Accelerating rescaled gradient descent: fast minimization of smooth functions,” in the Advances in Neural Information Processing Systems, 2019

Broderick, T., Wilson, A. C., and Jordan, M. I. “Posteriors, conjugacy, and exponential families for completely random measures,” Bernoulli, 2018.

Wilson, A. C., Roelofs, R., Stern, M., Srebro, N. and Recht, B. “The marginal value of adaptive methods in machine learning,” in the Advances in Neural Information Processing Systems, 2017.

Tu S., Venkataraman, S., Wilson, A. C., Jordan, M.I. and Recht, B. “Breaking locality accelerates block Gauss-Seidel,” in the International Conference of Machine Learning, 2017.

Wibisono, A., Wilson, A. C., and Jordan, M. I. “A variational perspective on accelerated methods of optimization,” in the Proceedings of the National Academy of Science, 2016.

Broderick, T., Boyd, N., Wibisono, A., Wilson, A. C., and Jordan, M. I. “Streaming variational Bayes,” in the Advances in Neural Information Processing Systems, 2013.

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## Invited Talks

- 2021 Simons Workshop on Geometric Methods in Optimization and Sampling, Optimization Bootcamp Tutorial.
- 2020 Johns Hopkins University: Invited Seminar, Mathematical Institute for Data Science, Variational Perspectives on Machine Learning: Algorithms, Inference, and Fairness.
- 2020 Rice University: Invited Seminar, Computational and Applied Mathematics, Variational Perspectives on Machine Learning: Algorithms, Inference, and Fairness.
- 2020 University of Maryland: Invited Seminar, Department of Computer Science, Variational Perspectives on Machine Learning: Algorithms, Inference, and Fairness.
- 2020 Cornell: Invited Seminar, Department of Operations Research and Information Engineering, Variational Perspectives on Machine Learning: Algorithms, Inference, and Fairness.
- 2020 Yale University: Invited Seminar, Department of Computer Science, Variational Perspectives on Machine Learning: Algorithms, Inference, and Fairness.
- 2020 Brown University: Invited Seminar, Department of Computer Science, Variational Perspectives on Machine Learning: Algorithms, Inference, and Fairness.
- 2020 New York University: Invited Seminar, Department of Computer Science, Variational Perspectives on Machine Learning: Algorithms, Inference, and Fairness.
- 2020 University of Chicago: Invited Seminar, Department of Computer Science, Variational Perspectives on Machine Learning: Algorithms, Inference, and Fairness.
- 2020 Carnegie Mellon University: Invited Seminar, Department of Computer Science, Variational Perspectives on Machine Learning: Algorithms, Inference, and Fairness.
- 2020 Georgia Tech: Invited Seminar, Department of Computer Science, Variational Perspectives on Machine Learning: Algorithms, Inference, and Fairness.

- 2020 Stanford: Invited Seminar, Departments of Computer Science and Management Science & Engineering, Variational Perspectives on Machine Learning: Algorithms, Inference, and Fairness.
- 2019 University of Massachusetts Amherst: Special Seminar, Department of Computer Science, Accelerating Descent Methods: A Dynamical Systems Perspective.
- 2019 MIT Operations Research Seminar, Accelerating Descent Methods: A Dynamical Systems Perspective.
- 2019 ETH, Zurich Statistics Seminar Series, The Risk of Approximate Cross-validation.
- 2018 MIT LIDS, Seminar Series, Accelerating Optimization Algorithms.
- 2017 Toyota Technical Institute at Chicago Young Researcher Seminar Series, A Dynamical View of Optimization Algorithms
- 2017 Caltech: Computing and Mathematical Sciences Colloquium, A Dynamical View of Optimization Algorithms
- 2017 Cornell Young Research Workshop, A Dynamical View of Optimization Algorithms

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## Workshop and Conference Seminars

- 2020 Information Theory and Applications Workshop, The Disparate Equilibria of Algorithmic Decision Making when Individuals Invest Rationally.
- 2019 Optimization and Statistical Learning Workshop, Les Houches, A Dynamical View of Optimization Algorithms.
- 2019 IEEE Conference on Decision and Control, Dynamical Perspectives on Gradient-based Algorithms.
- 2019 SIAM Conference on Optimization, A Dynamical View of Optimization Algorithms.
- 2017 Information Theory and Applications Workshop, A Dynamical View of Optimization Algorithms.

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## Service and Activities

- 2022 **Program Chair**, Foundations on Responsible Computing
- 2022 **Program Chair**, Conference on Learning Theory
- 2021 **Organizer**, Simons Workshop on Geometric Methods in Optimization and Sampling
- 2021 **Area Chair**, Neural Information Processing Systems
- 2021 **Area Chair**, ACM Conference on Fairness, Accountability and Transparency
- 2021 **Instructor**, Harvard Summer School: New Horizons in Theoretical Computer Science
- 2021 **Organizer**, Rising Stars in Computer Science at MIT
- 2021 **Organizer**, AMS Session on Social Change Through Mathematics
- 2020 **Organizer**, NeurIPS Workshop on Consequential Decisions in Dynamic Environments
- 2016-2017 **Co-president**, Berkeley Statistics Graduate Student Association

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# Reviewing

Neural Information Processing Systems, ACM Conference on Fairness, Accountability and Transparency, International Conference on Machine Learning, Journal of Machine Learning Research