Ashia C. Wilson

IDENTIFYING INFORMATION

Website: ashiawilson.com
Email: ashia07@mit.edu

CURRENT EMPLOYMENT

MIT   Cambridge, MA
Assistant Professor of Electrical Engineering and Computer Science   2021

PREVIOUS EMPLOYMENT

Microsoft Research   Cambridge, MA
Postdoctoral Researcher   2018-2020

Google AI   Mountain View, CA
Summer Intern with Yoram Singer   Summer 2017

MIT   Cambridge, MA
Research Assistant in Prediction Analysis Lab with Prof. Cynthia Rudin   January 2012 - June 2012

EDUCATION

UC Berkeley   Berkeley, CA
Ph.D. in Statistics, Advisor: Michael I. Jordan and Benjamin Recht   2012–2018
Thesis: Lyapunov Arguments in Optimization

Harvard University   Cambridge, MA
B.A. in Applied Mathematics, minor in Philosophy   2007–2011

SCHOLARSHIPS AND AWARDS

- NeurIPS spotlight paper: The Marginal Value of Adaptive Methods in Machine Learning   2017
- Rising Stars in EECS, Invited Participant   2017
- National Science Foundation Graduate Research Fellowship   2014–2017
- UC Berkeley Chancellors Fellowship   2012–2014
- MIT's Lemelson Presidential Fellowship (declined)   2012
- MIT's Graduate Michael Athans Fellowship (declined)   2012
- GEM Fellowship (declined)   2012
- Harvard Fung Fellowship   2010

TEACHING

MIT

- **Instructor**   2021

Introduction to Data Science and Statistics (6.401)

UC Berkeley

- **Teaching Assistant** 2015
  Optimization for Modern Data Analysis (EE 227C)
  Modern Statistical Prediction and Machine Learning (Stat 154)

Preprints

[1] Betancourt, M., Jordan, M. I. and Wilson A. C , "On symplectic optimization." *Under Review, 2017.*

Publications

[1] Wilson, A. C., Recht, B. and Jordan, M. I , "A Lyapunov analysis of momentum methods in optimization." *Journal of Machine Learning Research* (JMLR), 2021.

[2] Wilson, A. C., Kasy, M, and Mackey, L. , "Approximate cross-validation: guarantees for model assessment and model selection." *International Conference on Artificial Intelligence and Statistics* (AISTATS), 2020.

[3] 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." *ACM conference on Fairness, Accountability and Transparency* (FAccT), 2020.

[4] Wilson, A. C., Mackey, L., and Wibisono, A. "Accelerating rescaled gradient descent: fast minimization of smooth functions." In *Advances in Neural Information Processing Systems* (NeurIPS), 2019.

[5] Broderick, T., Wilson, A. C., and Jordan, M. I. "Posteriors, conjugacy, and exponential families for completely random measures." *Bernoulli*, 2018.

[6] Wilson, A. C., Roelofs, R., Stern, M., Srebro, N. and Recht, B. "The marginal value of adaptive methods in machine learning." In *Advances in Neural Information Processing Systems.* (NeurIPS), 2017.

[7] 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* (ICML), 2017.

[8] Wibisono, A., Wilson, A. C., and Jordan, M. I. "A variational perspective on accelerated methods of optimization." *Proceedings of the National Academy of Science* (PNAS), 2016.

[9] Broderick, T., Boyd, N., Wibisono, A., Wilson, A. C., and Jordan, M. I. "Streaming variational Bayes."In *Advances in* In *Neural Information Processing Systems* (NeurIPS), 2013.

Departmental Seminars

- Johns Hopkins University: Invited Seminar, Mathematical Institute for Data Science 2020
  Variational Perspectives on Machine Learning: Algorithms, Inference, and Fairness.
- Rice University: Invited Seminar, Computational and Applied Mathematics 2020
  Variational Perspectives on Machine Learning: Algorithms, Inference, and Fairness.
- University of Maryland: Invited Seminar, Computer Science 2020
  Variational Perspectives on Machine Learning: Algorithms, Inference, and Fairness.
- Cornell: Invited Seminar, Operations Research and Information Engineering 2020
  Variational Perspectives on Machine Learning: Algorithms, Inference, and Fairness.

- Yale University: Invited Seminar, Computer Science　　　　　　　　　　　　　2020
  Variational Perspectives on Machine Learning: Algorithms, Inference, and Fairness.
- Brown University: Invited Seminar, Computer Science　　　　　　　　　　　　2020
  Variational Perspectives on Machine Learning: Algorithms, Inference, and Fairness.
- New York University: Invited Seminar, Computer Science　　　　　　　　　　2020
  Variational Perspectives on Machine Learning: Algorithms, Inference, and Fairness.
- University of Chicago: Invited Seminar, Computer Science　　　　　　　　　2020
  Variational Perspectives on Machine Learning: Algorithms, Inference, and Fairness.
- Carnegie Melon University: Invited Seminar, Computer Science　　　　　　2020
  Variational Perspectives on Machine Learning: Algorithms, Inference, and Fairness.
- Georgia Tech: Invited Seminar, Computer Science　　　　　　　　　　　　　　2020
  Variational Perspectives on Machine Learning: Algorithms, Inference, and Fairness.
- Stanford: Invited Seminar, Computer Science and Management Science & Engineering　2020
  Variational Perspectives on Machine Learning: Algorithms, Inference, and Fairness.
- University of Massachusetts Amherst: Special Seminar, Applied Mathematics　2019
  Accelerating Descent Methods: A Dynamical Systems Perspective.
- MIT Operations Research Seminar　　　　　　　　　　　　　　　　　　　　　　2019
  Accelerating Descent Methods: A Dynamical Systems Perspective.
- Georgia Tech: Invited Seminar, Computer Science　　　　　　　　　　　　　　2019
  Variational Perspectives on Machine Learning: Algorithms, Inference, and Fairness.
- ETH, Zurich Statistics Seminar Series　　　　　　　　　　　　　　　　　　　　2019
  The Risk of Approximate Cross-validation.
- MIT LIDS Seminar Series　　　　　　　　　　　　　　　　　　　　　　　　　　　2018
  A Talk on Accelerating Optimization Algorithms.
- TTIC Young Researcher Seminar Series　　　　　　　　　　　　　　　　　　　2017
  A Dynamical View of Optimization Algorithms.
- Caltech: Computing and Mathematical Sciences Colloquium　　　　　　　2017
  A Dynamical View of Optimization Algorithms.
- Cornell Young Research Workshop　　　　　　　　　　　　　　　　　　　　　　2017
  A Dynamical View of Optimization Algorithms.

Workshops and Conference Seminars

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

Other Talks

- MIT: Tamara Broderick's Reading Group 2019
  A Dynamical View of Optimization Algorithms.
- Harvard: Pierre Jacob and Demba Ba's Reading Group 2019
  A Dynamical View of Optimization Algorithms.
- Microsoft Research Theory Group, New York 2017
  A Dynamical View of Optimization Algorithms.
- Microsoft Research Theory Group, New England 2017
  A Dynamical View of Optimization Algorithms.
- Microsoft Research Theory Group, Seattle 2017
  A Dynamical View of Optimization Algorithms.
- UC Berkeley Rise Lab 2017
  Breaking Locality Accelerated Gauss-Seidel.
- UC Berkeley Amp Camp. 2014
  Streaming, variational, Bayes.

Professional Service

- **Area Chair**

  Neural Information Processing Systems (NeurIPS) (2021)
  ACM Conference on Fairness, Accountability and Transparency (2021)
- **Organizer**

  NeurIPS Workshop on Consequential Decisions in Dynamic Environments (2020)
  AMS Session on Social Change Through Mathematics (2021)
- **Conference Reviewer**

  Neural Information Processing Systems (NeurIPS) (2017, 2020)
  ACM Conference on Fairness, Accountability and Transparency (2021)
- **Journal Reviewer**

  Journal of Machine Learning Research (2019)
- **Instructor**

  New Horizons in Theoretical Computer Science (ACM SIGACT) (2021)

Other Activities

Berkeley Statistics Graduate Student Association (SGSA)
Co-president 2016-2017