Emily R. Diana

Office	265 South 37th Street, 434A.1 Academic Research Building, Philadelphia, PA 19104	**Mobile Phone**	+1 (860) 389 7309
		Email	ediana@wharton.upenn.edu

Education

2018-   PhD Student in Statistics - The Wharton School, University of Pennsylvania
Advisers: Michael Kearns and Aaron Roth

2017-2018   M.S. in Statistics - Stanford University

2011-2015   B.A. in Applied Mathematics, cum laude - Yale College
Thesis: *Maintaining Bipartite Structure with a Modified Louvain Algorithm*
Supervisor: Daniel Spielman

Publications

1. Emily Diana, Wesley Gill, Michael Kearns, Krishnaram Kenthapadi, Aaron Roth, and Saeed Sharifi-Malvajerdi. Multiaccurate proxies for downstream fairness. In *Proceedings of the 2022 ACM Conference on Fairness, Accountability, and Transparaency*, 2022

2. Emily Diana, Wesley Gill, Ira Globus-Harris, Michael Kearns, Aaron Roth, and Saeed Sharifi-Malvajerdi. Lexicographically Fair Learning: Algorithms and Generalization. In *2nd Symposium on Foundations of Responsible Computing (FORC 2021)*, volume 192 of *Leibniz International Proceedings in Informatics (LIPIcs)*, pages 6:1–6:23, Dagstuhl, Germany, 2021. Schloss Dagstuhl – Leibniz-Zentrum für Informatik

3. Emily Diana, Wesley Gill, Michael Kearns, Krishnaram Kenthapadi, and Aaron Roth. Minimax group fairness: Algorithms and experiments. *In AAAI/ACM Conference on Artificial Intelligence, Ethics and Society*, 2021

4. Emily Diana, Travis Dick, Hadi Elzayn, Michael Kearns, Aaron Roth, Zachary Schutzman, Saeed Sharifi-Malvajerdi, and Juba Ziani. Algorithms and learning for fair portfolio design. In *Proceedings of the 22nd ACM Conference on Economics and Computation*, EC '21, page 371–389, New York, NY, USA, 2021. Association for Computing Machinery

5. Emily Diana, Hadi Elzayn, Michael Kearns, Aaron Roth, Saeed Sharifi-Malvajerdi, and Juba Ziani. Differentially private call auctions and market impact. *In the Twenty-First ACM Conference on Economics and Computation*, February 2020

6. Emily Diana, Michael Kearns, Seth Neel, and Aaron Roth. Optimal, truthful, and private securities lending. *In 2020 ACM International Conference on AI in Finance*, October 2020

7. Charles R. Noble et al. Ale3d: An arbitrary lagrangian-eulerian multi-physics code. Technical Report LLNL-TR-732040, Lawrence Livermore National Lab. (LLNL), Livermore, CA (United States), May 2017

Conference and Workshop Presentations

1. *ACM FAccT Conference 2022.* "Multiaccurate Proxies for Downstream Fairness." 2022. (Short Talk, Long Talk, Poster)

2. *Lawrence Livermore National Laboratory Applied Statistics Group Seminar.* "Approaches Assessing Automated Bias: Minimax Fairness and Bias-Aware Proxies for Redacted Features." 2022. (Upcoming Invited Seminar)

3. *3rd Symposium on Foundations of Responsible Computing (FORC 2022).* "Multiaccurate Proxies for Downstream Fairness." 2022. (Upcoming Talk)

4. *Wharton Statistics PhD Student Seminar Day.* "Bias Mitigation Benchmarking." 2022. (Short Talk)

5. *MIDAS Future Leaders Summit.* "Multiaccurate Proxies for Downstream Fairness." 2022. (Lightning Talk)

6. *Rutgers Conference on Advances in Bayesian and Frequentist Statistics.* "Multiaccurate Proxies for Downstream Fairness." 2022. (Poster)

7. *EECS Rising Stars 2021.* "Multiaccurate Proxies for Downstream Fairness." 2021. (Poster)

8. *AMLC 2021 Workshop on Trustworthy AI.* "Multiaccurate Proxies for Downstream Fairness." 2021. (Talk)

9. *Lawrence D. Brown Distinguished Lecture and Student Workshop.* "Multiaccurate Proxies for Downstream Fairness." 2021. (Talk)

10. *2nd Symposium on Foundations of Responsible Computing (FORC 2021).* "Lexicographically Fair Learning: Algorithms and Generalization." 2021. (Long Talk)

11. *AAAI/ACM Conference on Artificial Intelligence, Ethics and Society.* "Minimax Group Fairness: Algorithms and Experiments." 2021. (Short Talk, Long Talk, Poster)

12. *ALT Mentorship Workshop.* "Minimax and Lexicographically Fair Learning: Algorithms, Experiments, and Generalization." 2021. (Talk Dissection)

13. *AMLC Workshop on Fairness and Bias in AI.* "Convergent Algorithms for (Relaxed) Minimax Fairness." 2020. (Talk)

14. *6th Annual Bloomberg-Columbia Machine Learning in Finance.* "Optimal, Truthful, and Private Securities Lending." 2020. (Invited Talk)

15. *Joint Statistical Meetings, Philadelphia, PA.* "Is Anemia Prevalence a Good Proxy for Malaria Prevalence for Children? A Community-Level Perspective via Matched Logistic Regression." 2020. (Talk)

16. *NeuRIPS Workshop on Robust AI in Financial Services: Data, Fairness, Explainability, Trustworthiness, and Privacy, Vancouver, CA.* "Optimal, Truthful, and Private Securities Lending." 2019. (Spotlight Talk)

17. *Grace Hopper Celebration of Women in Computing, Houston, TX.* "Domain Decomposition with Recursive Inertial Bisection." 2016. (Poster)

Teaching Assistantships

The Wharton School, University of Pennsylvania

CIS 399: Science of Data Ethics (Spring 2020)

STAT 613: Regression Analysis for Business (Fall 2019)

STAT 102: Introduction to Business Statistics (Spring 2019)

Stanford University

CS 161: Design and Analysis of Algorithms (Winter 2018-2019)

CS 106A: Programming Methodologies (Fall 2018)

Professional Experience

Jun 2021 -
April 2022
Amazon Web Services (Remote)
Applied Scientist Intern

Supervisors: Michele Donini and Bilal Zafar

Research Topic: Bias Mitigation Benchmarking for Amazon SageMaker Clarify (Working Paper)

Language: Python

Dec 2020 -
Federal Reserve Bank of Philadelphia (Remote)
Research Assistant

Supervisors: Minchul Shin and Simon Freyaldenhoven

Research Topic: Calibration Disparities in Common Credit Scoring Algorithms (Initial Stages).

Jun 2020 -
May 2021
Amazon Web Services (Remote)
Applied Scientist Intern

Supervisors: Michael Kearns, Krishnaram Kenthapadi, Aaron Roth

Research Topics: Minimax Group Fairness, Multiaccurate Proxies for Downstream Fairness.

Mar 2017 -
Aug 2018
Center on Poverty and Inequality, Stanford University, Stanford, CA
Research Assistant

Supervisors: David Grusky and Adrian Raftery

Research Topic: Developing methodologies to analyze trends in contemporary social mobility based on contingency tables of longitudinally-linked Census data (ongoing project).

Aug 2015-
Sep 2017
Lawrence Livermore National Laboratory, Livermore, CA
Scientific Software Developer

Parallelized and integrated a domain decomposer, Recursive Inertial Bisection, into the mesh generation step of ALE3D, a multi-physics "Arbitrary Lagrangian-Eulerian 3D" numerical simulation code. Primary developer for LLNL's ParticlePack code. Member of team integrating a GPU portability abstraction into ALE3D's advection package. Presented research internally on implications of strided memory access patterns on GPU-accelerated computing.

Service

Invited Contributor: Exchanges Cover of the SIGecom Winter Meeting on Algorithmic Fairness (2022)

UpML Workshop at ICML Program Committee Member (2022)

FAccT Program Committee Member (2022)

AMLC Workshop on Trustworthy AI External Reviewer (2021)

FORC External Reviewer (2021)

Wharton Doctoral Program Student Representative (2021)

Wharton Doctoral Program Peer Mentor (2020-present)

Stanford Women in Mathematics Mentoring (2017)

LLNL Division Representative for Girls Who Code (2016-2017)

Awards

3rd Place Student Poster Competition, Rutgers Conference on Advances in Bayesian and Frequentist Statistics (2022)

MIDAS Future Leaders Summit Attendee (2022)

EECS Rising Stars Attendee (2021)

Brown Best Student Paper Award (2021)

Wellcome Data Re-Use Prize: Malaria (£15000, 2019)

Weapons Simulation and Computing Code Development Silver Star Award (2017)

Other

Two Patents Filed (2021)

University of Pennsylvania Center for Teaching and Learning Teaching Certification (2022)

References

Available upon request