

# Emily Diana

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## Education

<b>2018-</b>	PhD Student in Statistics - The Wharton School, University of Pennsylvania
<b>2017-2018</b>	M.S. in Statistics - Stanford University
<b>2011-2015</b>	B.A. in Applied Mathematics, cum laude - Yale College Thesis: <i>Maintaining Bipartite Structure with a Modified Louvain Algorithm</i> Supervisor: Daniel Spielman

## Publications

1. 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. 2020. arXiv:2006.07281 cs.LG
2. 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. arXiv:2002.05699 cs.GT
3. Emily Diana, Michael Kearns, Seth Neel, and Aaron Roth. Optimal, truthful, and private securities lending. *In NeurIPS 2019 Workshop on Robust AI in Financial Services: Data, Fairness, Explainability, Trustworthiness, and Privacy*, December 2019. arXiv:1912.06202 [cs, q-fin]
4. 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 Presentations

1. *6th Annual Bloomberg-Columbia Machine Learning in Finance* “Optimal, truthful, and private securities lending.” 2020. (Talk)
2. *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)
3. *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)
4. *Grace Hopper Celebration of Women in Computing, Houston, TX*. “Domain Decomposition with Recursive Inertial Bisection.” 2016. (Poster)
5. *Yale Day of Data, New Haven, CT*. “Partitioning Bipartite Graphs: A Modified Louvain.” 2015. (Poster)
6. *Joint Mathematics Meetings, Baltimore, MD*. “Random Walks on Spheres and Harmonic Functions.” 2014. (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 2020 -** Amazon Web Services (Remote)

**Aug 2020** *Applied Scientist Intern*

Supervisors: Michael Kearns and Krishnaram Kenthapadi

Research Topic: Minmax Fairness: Framework and Algorithms.

Language: Python

**Mar 2017 -** Center on Poverty and Inequality, Stanford University, Stanford, CA

**Aug 2018** *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).

Language: R

**Aug 2015-** Lawrence Livermore National Laboratory, Livermore, CA

**Sep 2017** *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.

Languages: C++, Python

Packages: MPI, CUDA, TotalView, ViSit, GDB

**Jun 2014 -** Lawrence Livermore National Laboratory, Livermore, CA

**Aug 2014** *Cybersecurity Intern*

Poster: *Partitioning Bipartite Graphs: A Modified Louvain*

Language: MATLAB

**May 2013 -** Summer Undergraduate Research Institute in Experimental Mathematics, East Lansing, MI

**Jul 2013** *Undergraduate Summer Researcher, Michigan State University*

Manuscript: *Random Walks on Spheres and Harmonic Functions*

Language: MATLAB

## Coding Skills

■ Proficient	■ Familiarity	■ Everyday Workflow	■ Work Experience
C/C++	SQL	LaTeX	MPI
Haskell	Java	Git	TotalView
R	Scheme	Bash	VisIt
Python			GDB
MATLAB			

## Service

Stanford Women in Mathematics Mentoring (2017)

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

## Awards

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

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

## References

Available upon request