

**Emma Pierson**  
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### EDUCATION

PhD, Computer Science, Stanford University	2015 - Present
MS by Research, Statistics, Oxford University	2014 - 2015
MS, Computer Science, Stanford University	Winter 2013 - Spring 2013
Concentrations in Artificial Intelligence and Biocomputation, GPA: 4.03/4.00	
BS, Physics (with distinction), Stanford University	Fall 2009 - Spring 2013
Concentration in Theoretical Physics, GPA: 3.97/4.00	

### HONORS

Forbes 30 Under 30 in Science	2019
Most impactful to society poster award, University of Michigan AI Symposium	2019
EECS Rising Star	2018
Best paper award, AISTATS	2018
Top 10 Papers of 2016-2017 in Regulatory and Systems Genomics (RECOMB/ISCB)	2017
Best poster award, ICML Workshop on Computational Biology	2016
Best talk award, ISMB High Throughput Sequencing SIG	2015
Rhodes Scholar	2014
Hertz Fellow	2014
NDSEG Fellow	2014
NSF Graduate Research Fellow (declined)	2014
Gates-Cambridge Scholarship Finalist (withdrew from consideration)	2013
Marshall Scholar (declined)	2013
Deans' Award, Stanford (awarded to 5-10 undergraduates for "outstanding academic contributions")	2013
2nd place, US National Debate Championships	2013
3rd place, Kaggle Job Recommendation Engine Competition (\$2,000)	2012
Levinthal Tutorial Recipient, Non-fiction Writing, Stanford	2011
National Merit Scholar	2009

### ACADEMIC PAPERS

Click on paper titles to read drafts

† indicates alphabetical authors, ‡ indicates all authors contributed equally, \* indicates co-first/last authorship.

- [1] **Emma Pierson**, Camelia Simoiu, Jan Overgoor, Sam Corbett-Davies, Daniel Jenson, Amy Shoemaker, Vignesh Ramachandran, Phoebe Barghouty, Cheryl Phillips, Ravi Shroff, and Sharad Goel<sup>†</sup>. [A large-scale analysis of racial disparities in police stops across the United States](#). Conditionally accepted at *Nature Human Behaviour*, 2019. **Media coverage in *The Economist*, *The New York Times*, *National Geographic*, *The Los Angeles Times*, *The Washington Post*, *The Daily Show*, *CNN*, and *NBC News*. Taught at Columbia, Caltech, MIT, and Stanford, among others.**
- [2] **Emma Pierson**, David Cutler<sup>†</sup>, Jure Leskovec<sup>†</sup>, Sendhil Mullainathan<sup>†</sup>, and Ziad Obermeyer<sup>†</sup>. Using machine learning to understand racial and socioeconomic differences in knee pain. Working paper, 2019 (presented at the NBER Machine Learning and Healthcare Conference; featured on [World Bank blog](#)).
- [3] **Emma Pierson**, Tim Althoff, Daniel Thomas, Paula Hillard, and Jure Leskovec. [The menstrual cycle is a primary contributor to cyclic variation in women's mood, behavior, and vital signs](#). Working paper, 2019 (featured in *New Scientist*).

- [4] Heidi Chen, **Emma Pierson**, Sonja Schmer-Galunder, Jonathan Altamirano, Dan Jurafsky, Jure Leskovec, Magali Fassiotto, and Nishita Kothary. Gender differences in patient perceptions of physicians' communal traits and the impact on physician evaluations. Working paper, 2019.
- [5] **Emma Pierson\***, Pang Wei Koh\*, Tatsunori Hashimoto\*, Daphne Koller, Jure Leskovec, Nick Eriksson, and Percy Liang. [Inferring multidimensional rates of aging from cross-sectional data](#). AISTATS 2019; NeurIPS ML For Health Workshop, 2018 (**spotlight talk**); ICML Workshop on Computational Biology (**oral presentation**), 2018.
- [6] Bo Liu\*, Shuyang Shi\*, Yongshang Wu\*, Daniel Thomas, Laura Symul, **Emma Pierson**, and Jure Leskovec. [Predicting pregnancy using large-scale data from a women's health tracking mobile application](#). The Web Conf, 2019 (Health on the Web Short Paper Track); NeurIPS ML For Health Workshop, 2018.
- [7] **Emma Pierson**, Tim Althoff, and Jure Leskovec. [Modeling Individual Cyclic Variation in Human Behavior](#). WWW, 2018 (featured in *Nature Medicine*: "Discovery cycle", Shraddha Chakradhar).
- [8] **Emma Pierson**, Sam Corbett-Davies, and Sharad Goel. [Fast Threshold Tests for Detecting Discrimination](#). AISTATS, 2018 (**best paper award**).
- [9] Anosheh Afghahi, Natasha Purington, Summer S Han, Manisha Desai, **Emma Pierson**, Maya B Mathur, Tina Seto, Caroline A Thompson, Joseph Rigdon, Melinda L Telli, et al. [Higher absolute lymphocyte counts predict lower mortality from early-stage triple-negative breast cancer](#). *Clinical Cancer Research*, 2018.
- [10] **Emma Pierson**. [Demographics and discussion influence views on algorithmic fairness](#). Working paper, 2018.
- [11] Bo Wang\*, Daniele Ramazzotti\*, Luca De Sano, Junjie Zhu, **Emma Pierson**, and Serafim Batzoglou. [SIMLR: A tool for large-scale genomic analyses by multi-kernel learning](#). *Proteomics*, 2018.
- [12] Sam Corbett-Davies, **Emma Pierson**, Avi Feller, Sharad Goel, and Aziz Huq. [Algorithmic decision making and the cost of fairness](#). KDD, 2017. **Taught at Stanford, Berkeley, and Caltech, among others.**
- [13] Pang Wei Koh\*, **Emma Pierson\***, and Anshul Kundaje. [Denoising genome-wide histone ChIP-seq with convolutional neural networks](#). *Bioinformatics/ISMB* 2017; ICML Workshop on Computational Biology (**spotlight talk; best poster award**).
- [14] Bo Wang, Junjie Zhu, **Emma Pierson**, Daniele Ramazzotti, and Serafim Batzoglou. [Visualization and analysis of single-cell RNA-seq data by kernel-based similarity learning](#). *Nature Methods*, 2017.
- [15] **Emma Pierson**. [Detecting and predicting beautiful sunsets with social media data](#). Climate Informatics Workshop, 2016 (**spotlight talk**).
- [16] **Emma Pierson** and Christopher Yau. [ZIFA: Dimensionality reduction for zero-inflated single-cell gene expression analysis](#). *Genome Biology*, 2015; **best talk award** at HitSeq 2015 (SIG of ISMB/ECCB).
- [17] **Emma Pierson**, the GTEx Consortium, Daphne Koller, Alexis Battle\*, and Sara Mostafavi\*. [Sharing and specificity of co-expression networks across 35 human tissues](#). *PLoS Computational Biology*, 2015.
- [18] **Emma Pierson**. [Outnumbered but well-spoken: female commentators in the New York Times](#). CSCW, 2015.
- [19] **Emma Pierson** and Noah Goodman. [Uncertainty and denial: a resource-rational model of the value of information](#). *PLoS One*, 2014.

## SELECTED NON-ACADEMIC PUBLICATIONS

Click on titles to read publications.

- [S1] **Emma Pierson**. [PhDs without tears: how academics can help ease students' minds](#). *Times Higher Education*, 2019. **Taught in UW Human Well-Being seminar.**
- [S2] **Emma Pierson**. [Hey, computer scientists! Stop hating on the humanities](#). *Wired*, 2017.

- [S3] Mary Nugent and **Emma Pierson**. [Here’s what people say when they attack Hillary Clinton on Twitter](#). *The Washington Post*, 2016.
- [S4] Sam Corbett-Davies, **Emma Pierson**, Avi Feller, and Sharad Goel. [A computer program used for bail and sentencing decisions was labeled biased against blacks. It’s actually not that clear](#). *The Washington Post*, 2016. **Taught at MIT, Stanford, Berkeley, Harvard, UW, Yale, and Cornell, among others.**
- [S5] **Emma Pierson**. [Is sexist rhetoric a total frat move?](#) *The New York Times*, 2016.
- [S6] **Emma Pierson**. [Of mansplaining and mastectomies](#). *The New York Times*, 2016.
- [S7] **Emma Pierson**. [College students aren’t the only ones abusing Adderall](#). *FiveThirtyEight*, 2015.
- [S8] **Emma Pierson** and Shengwu Li. [A better way to gauge how common sexual assault is on college campuses](#). *The Washington Post*, 2015.
- [S9] **Emma Pierson** and Leah Pierson. [What do campus protesters really want?](#) *The New York Times*, 2015.
- [S10] **Emma Pierson**. [Re: our relationship](#). *The Atlantic*, 2015.
- [S11] Brian Clifton, **Emma Pierson**, and Gilad Lotan. [How to tell if a Twitter user is pro-choice or pro-life – without reading any of their tweets](#). *Quartz*, 2015.
- [S12] **Emma Pierson**. [How to get more women to join the debate](#). *The New York Times*, 2015.
- [S13] **Emma Pierson**. [Seeking a cancer-free world](#). *The New York Times*, 2015.
- [S14] **Emma Pierson**. [See how red tweeters and blue tweeters ignore each other on Ferguson](#). *Quartz*, 2014.
- [S15] **Emma Pierson**. [In science, it matters that women come last](#). *FiveThirtyEight*, 2014.
- [S16] **Emma Pierson** and Chuong Do. [What about the women?](#) *Coursera Blog*, 2014.
- [S17] **Emma Pierson**. [Knowing you carry a cancer gene](#). *The New York Times*, 2012. (**Awarded “Best Blog Post of 2012” by Cancer101; taught in MIT bioethics class**).

### INVITED TALKS/PANELS

Cornell, Departments of Computer Science and Information Science	2020
USC, Department of Computer Science	2020
UCLA, Departments of Computer Science and Computational Medicine	2020
Caltech, Computing and Mathematical Sciences	2020
Brown, Department of Computer Science and Data Science Initiative	2020
Yale, Departments of Computer Science and Statistics/Data Science	2020
Johns Hopkins, Department of Computer Science	2020
University of Chicago, Department of Computer Science	2020
University of Chicago, Harris School of Public Policy	2020
Harvard, Department of Biomedical Informatics	2020
Harvard T.H. Chan School of Public Health	2020
Carnegie Mellon, Departments of Machine Learning, Computer Science, and Statistics/Data Science	2020
Columbia, Department of Biomedical Informatics	2020
MIT Sloan School of Management	2020
University of Toronto, Department of Statistical Sciences and Faculty of Information	2020
Harvard Business School	2020
Microsoft Research New England	2020
Johns Hopkins, Department of Biostatistics	2020
University of Washington, Department of Statistics	2020
NeurIPS Social Invited Talk: “Well-being in ML”	2019
USC AI Rising Stars Symposium	2019
Stanford Biostatistics Workshop	2019

National Academy of Sciences Workshop (Social Science Modeling for Big Data)	2019
University of Michigan AI Symposium	2019
Data and Society Meeting on Fair Machine Learning in Health	2019
Stanford Data Science for Social Good Summer Program	2019
Twitter FairML Speaker Series	2019
Evidation Health	2019
Johns Hopkins Data Science Lab	2019
NBER Machine Learning and Healthcare Conference	2019
Salesforce Research	2019
Microsoft Research AI Breakthroughs Workshop	2018
Facebook Computation Social Science Group	2018
Hertz Foundation Summer Workshop	2018
AlterConf San Francisco	2017
JSM, “Essential Skills for Communicating Statistics”	2017

## TEACHING AND STUDENT MENTORSHIP

*Research mentor* 2016-present

- Mentored 11 Stanford undergraduate and master’s students doing research for RAships, CS199/399 (independent study), and CS341 (Project in Mining Massive Datasets).

*Teaching assistant* 2018-2019

- Teaching assistant for Computers, Ethics, and Public Policy for two quarters; led a student section and provided feedback on both technical and non-technical assignments and class projects.

*Guest lecturer* 2018-2019

- Invited lectures in CS106S (Programming Abstractions and Social Good) (2017, 2018) and CS181 (Computers, Ethics, and Public Policy) (2017, 2018).

*Student Counselor, Bridge Peer Counseling Center* 2011 – 2013

- One of four students selected to lead the Bridge, Stanford’s Volunteer Student Organization of the Year in 2012, as a live-in counselor; provided psychological counseling to students from 12 AM-9 AM and made leadership decisions in collaboration with campus psychologists. Performed statistical analysis of calls: reported on the periods when suicide calls were most likely to occur, the counselors who were most effective, and the factors explaining their success; research presented to campus psychological health authorities. Created computer program to allow non-statisticians to perform analyses.

*Undergraduate Resident Math/Physics/CS Tutor, Stanford* 2011 – 2012

- Live-in tutor for Stanford resident hall housing hundreds of students.

## REVIEWING

International Workshop on Algorithmic Bias in Search and Recommendation	2020
The Web Conference	2020
Nature Medicine	2019
NeurIPS Workshop on Fair ML for Health	2019
ICLR Workshop on Debugging Machine Learning Models	2019
The Web Conference	2019

Conference on Fairness, Accountability, and Transparency (FAT*)	2018
JMLR	2018
CSCW	2018
IJCAI	2018
Biostatistics	2017
ICML	2015
ECCB	2014
Bioinformatics	2013

## WORK EXPERIENCE

*Research internship, Calico* Summer 2017 – Spring 2018

- Conducted analyses of aging in the UK Biobank dataset.

*Researcher, 23andMe* Fall 2013 – Fall 2014

- Performed analyses of genetic and phenotypic information.

*Data Analyst, Coursera* Summer 2013

- Performed statistical analyses to aid Coursera’s mission of providing free online education: modeled the role of education in democratic development, ways of increasing gender equity, and ways of improving peer grading, among others.
- Built tools for data export to facilitate research in educational institutions around the world.

## LEADERSHIP

*President, Stanford Debate Society* 2012

- Managed a \$300,000 budget; made it to elimination rounds at national and international competitions, including the World Championships, the North American Championships, the US Championships, Harvard, and Yale (2009-2013)