

Madison Coots

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EDUCATION

- **Harvard Kennedy School of Government** Cambridge, MA
Doctor of Philosophy - Public Policy
Track: Judgment and Decision Making
August 2022 - Present
- **Stanford University** Stanford, CA
Master of Science - Computer Science
Specialization: Artificial Intelligence
September 2019 - June 2021
- **Stanford University** Stanford, CA
Bachelor of Science - Management Science and Engineering
Minor: English
September 2015 - June 2019

HONORS AND AWARDS

- Harvard Kennedy School Dean's Award for Excellence in Student Teaching - 2025
- Malcom Weiner Center for Social Policy: Social Equity and Health Equity Stipend - 2025
- James M. and Cathleen D. Stone PhD Scholar in Inequality and Wealth Concentration, Stone Program in Wealth Distribution, Inequality, and Social Policy, Harvard University - 2023-2024
- Harvard Graduate Prize Fellowship - 2022-2023
- Stanford Engineering Coterminial Fellowship - 2019-2020
- U.S. Federal Government Stokes Graduate Scholar - 2019-2021
- U.S. Federal Government Stokes Undergraduate Scholar - 2017-2019

PUBLICATIONS

- [1] **Fair Lending in the Fintech Era: A Profit-Based Test of Discrimination.** Madison Coots, Robert Bartlett, Julian Nyarko, and Sharad Goel. *Working paper*. 2025.
- [2] **Racial Bias in Clinical and Population Health Algorithms: A Critical Review of Current Debates.** Madison Coots, Kristin A. Linn, Sharad Goel, Amol S. Navathe, and Ravi B. Parikh. *Annual Review of Public Health (forthcoming)*. 2025.
- [3] **A Framework for Considering the Role of Race and Ethnicity in Estimating Disease Risk.** Madison Coots, Soroush Saghaian, David Kent, and Sharad Goel. *Annals of Internal Medicine*. 2024.
- [4] **Learning to be Fair: A Consequentialist Approach to Equitable Decision-Making.** Alex Chohlas-Wood, Madison Coots, Henry Zhu, Sharad Goel, and Emma Brunskill. *Management Science*. 2024.
- [5] **Designing Equitable Algorithms.** Alex Chohlas-Wood, Madison Coots, Julian Nyarko, and Sharad Goel. *Nature Computational Science, Vol. 3*. 2023.
- [6] **Automated Court Date Reminders Reduce Warrants for Arrest: Evidence from a Text Messaging Experiment.** Alex Chohlas-Wood, Madison Coots, Joe Nudell, Julian Nyarko, Emma Brunskill, Todd Rogers, and Sharad Goel. *Working paper*. 2023.

CONFERENCE PRESENTATIONS AND INVITED TALKS

- **American Law and Economics Association Conference:** Oral presentation on "Fair Lending in the Fintech Era: A Profit-Based Test of Discrimination." 2025.
- **Production and Operations Management Society Annual Conference:** Oral presentation on "Fair Lending in the Fintech Era: A Profit-Based Test of Discrimination." 2025.
- **Predictive Analytics & Comparative Effectiveness Center Symposium:** Invited talk on "A Framework for Considering the Role of Race and Ethnicity in Estimating Disease Risk." 2024.
- **Society of Medical Decision Making 46th Annual Meeting:** Oral presentation on "A Framework for Considering the Role of Race and Ethnicity in Estimating Disease Risk." 2024.
- **International Conference on Computational Social Science:** Poster presentation on "Reevaluating the Role of Race and Ethnicity in Estimating Disease Risk." 2024.
- **Computational and Methodological Statistics Conference:** Oral presentation on "Reevaluating the Role of Race and Ethnicity in Estimating Disease Risk." 2023.

- **APPAM Conference:** Oral presentation on “Automated Court Date Reminders Reduce Warrants for Arrest: Evidence from a Text Messaging Experiment.” 2023.
- **INFORMS General Meeting:** Oral presentation on “Reevaluating the Role of Race and Ethnicity in Diabetes Screening.” 2023.
- **INFORMS Healthcare Conference:** Oral presentation on “Reevaluating the Role of Race and Ethnicity in Diabetes Screening.” 2023.
- **ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization:** Oral presentation, given jointly with Alex Chohlas-Wood. 2022.
- **American Causal Inference Conference:** Poster presentation. 2022.
- **Oxford University, Internet Institute Speaker Series:** Presentation on computational approaches to equitable decision-making, given jointly with Alex Chohlas-Wood. 2021.

TEACHING

- **API 203Z: Quantitative Analysis and Empirical Methods II (Spring 2025); Teaching Fellow.** Advanced graduate course in applied statistics: causal inference and machine learning.
- **API 202Z: Quantitative Analysis and Empirical Methods I (Spring 2025); Teaching Fellow.** Advanced graduate course in applied statistics: linear regression models.
- **API 201: Quantitative Analysis and Empirical Methods I (Fall 2024); Teaching Fellow.** Graduate course in applied statistics: exploring and summarizing data with R, probability theory, decision analysis.
- **DPI 681M: The Science and Implications of Generative AI (Spring 2024); Teaching Fellow.** Designed and taught the technical complement to the course on language models, deep learning models, and transformers.
- **MS&E 252: Foundations of Decision Analysis (Fall 2019); Course Assistant.** Graduate course in quantitative decision analysis covering: utility theory, decision framing, sensitivity analysis, value of information, assessing and using decision maker risk attitude. *Recognized by Stanford Center for Professional Development for excellence in teaching.*
- **MS&E 125: Applied Statistics (Winter 2020); Course Assistant.** Undergraduate course in applied statistics: exploring and summarizing data, methods for statistical inference, linear and logistic regression models.
- **Stanford Code in Place (Spring 2020); Section Leader.** Part of a teaching team for Code in Place, offered by Stanford during COVID-19 pandemic, with 10,000 global students and 900 volunteer teachers participating from around the world. Prepared and taught a weekly discussion section of 10-12 students to supplement professors’ lectures in a 5-week introductory online Python programming course.

PROFESSIONAL EXPERIENCE

- **Systems & Technology Research** Woburn, MA
Senior Data Scientist (Part-time) February 2023 - Present
- **Stanford Computational Policy Lab** Stanford, CA
Data Scientist September 2020 - August 2022
- **Aerospace Technical Services** Remote
Data Science Consultant September 2020 - June 2024
- **U.S. Federal Government (agency withheld)** Washington D.C.
Data Science Fellow June 2017 - January 2021

SKILLS SUMMARY

- **Languages.** Python, R, SQL, Julia, JavaScript, HTML, CSS
- **Skills.** Machine Learning, Stochastic Modeling, Linear Optimization, Probabilistic Analysis, Decision and Risk Analysis, Data Visualization, Web Development