

Shreya Prakash

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EDUCATION

University of Washington	2020 - 2025
PhD in Statistics, Advanced Data Science Track. (<i>Advisors: Elena Erosheva and Carlos Cinelli</i>)	
Carnegie Mellon University	2016 - 2019
B.S in Statistics and Machine Learning, University Honors	

RESEARCH EXPERIENCE

University of Washington	
<i>Research Assistant advised by Carlos Cinelli and Elena Erosheva</i>	2022 - Present
<ul style="list-style-type: none">Quantifying <u>discrimination</u> in the NIH Peer Review using <u>causal decomposition</u> methods	
<i>Research Assistant advised by Elena Erosheva</i>	2021 - Present
<ul style="list-style-type: none">Studying finite sample performance for <u>causal structure learning</u>	
<i>Research Assistant in WA Notify project</i>	2021
<ul style="list-style-type: none">Explored how the privacy protected exposure notification app (WA Notify) has affected the spread of COVID-19Used statistical methods to determine what factors influence willingness to quarantine or get tested	
Carnegie Mellon University	
<i>Undergraduate Research Assistant advised by Alexandra Chouldechova</i>	2019
<ul style="list-style-type: none">Determined whether there were any age, race, or sex discrimination when using fully or semi-automated decisions to decide when a case worker should investigate a particular abuse case	
<i>Undergraduate Research Assistant advised by Peter Freeman</i>	2019
<ul style="list-style-type: none">Built a pipeline to help astronomers understand how galaxies have evolved given a galaxy's current appearance using methods to correct for imbalanced data	
<i>Undergraduate Research Intern in Black & Veatch Corporate Capstone Project</i>	2018 - 2019
<ul style="list-style-type: none">Developed a system to analyze historical company data to predict injury and property damage cases then recommend strategies to prevent these cases using partial dependence plots (pdp)	
<i>Undergraduate Research Intern for the KONAM Foundation</i>	2017
<ul style="list-style-type: none">Designed and implemented a machine learning algorithm that assesses the risk of planting certain crops for marginalized farmers in India	

PUBLICATIONS, TALKS, & MEDIA

- S. Prakash**, C. Cinelli, E. Erosheva, C. Lee, "Causal Decomposition Methods to Mitigate Discrimination in NIH Peer Review", (2023), (in preparation)
- S. Prakash**, F. Xia, E. Erosheva, "Towards Causal Discovery with Statistical Guarantees", (2023), (in preparation)
- S. Prakash**, F. Xia, E. Erosheva, "Towards Causal Discovery with Statistical Guarantees", *The Western North American Region of The International Biometric Society (WNAR)*, (2023)

4. **S. Prakash**, I. Javed, A. Adler, S. Lu, R. Nugent, P. Freeman, & B. LeRoy, "Characterizing Incidents at Black & Veatch", *Carnegie Mellon University Meeting of the Minds Undergraduate Research Symposium*, (2019), (3rd Place winner in Poster Presentation Competition)
5. **S. Prakash**, P. Freeman, "Linking Galaxies Across Time via Conditional Density Estimation", *Carnegie Mellon University Meeting of the Minds Undergraduate Research Symposium*, (2019).
6. S. Konam, S. Papp, **S. Prakash**, S. Mishra, X. Liu, Z. Ma, & A. Doryab, "New App for Indigenous Farmers", *The Hans India*, (2017),
<https://www.thehansindia.com/posts/index/Commoner/2017-10-27/New-app-for-indigenous-farmers/335785>.

PROFESSIONAL EXPERIENCE

Marinus Analytics

Data Scientist

2020 - 2021

- Applied machine learning and time series analysis for unstructured child welfare case records
- Launched spam filter and underage person detection algorithms for TraffickJam: an application that uses human trafficking advertisement data to aid law enforcement with finding trafficking victims and traffickers
- Productionalized Infoshield: a text clustering algorithm for large scale human trafficking advertisement datasets.

Abhaya Global Information Technology

Data Science Intern

2020

- Built real-time Arrhythmia and Atrial Fibrillation detection models based on live ECG waves

84.51°

Data Science and Research Intern

2019

- Fixed issues and tested optimization algorithms for grocery promotion; recommended running promotion optimization for 52 weeks to increase category performance by 4%

Optum Technologies

Software Developer Intern

2018

- Built authentication, UI and containerized existing application for cloud deployment, generating millions in savings and revenue

Royal Caliber

Research Intern for the D3M Program DARPA

2017

- Worked on machine learning on graph datasets and implemented a significantly more efficient way to estimate the number of triangles in a graph, (from $O(V^3)$ to $O(V)$, where V is the number of graph vertices), using a wedge sampling algorithm

TEACHING EXPERIENCE

University of Washington

Teaching Assistant

2021 - Present

- Autumn 2022: Statistical Reasoning (STAT 220)
- Spring 2022: Causal Modeling (STAT 566)
- Winter 2021: Statistical Concepts and Methods for the Social Sciences (STAT 221)

Carnegie Mellon University

Teaching Assistant

2017 - 2019

- Fall 2019: Introduction to Probability Theory (36-225)

- Spring 2019: Introduction to Machine Learning (10-601)
- Fall 2017 & 2018: Methods for Statistics and Data Science (36-202)

SKILLS

Software/Programming: R, Python, SQL, MATLAB, Object-Oriented Programing, Parallel Programming

RELEVANT PhD COURSEWORK

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|---|--|--|
| • Statistical Learning | • Causal Modeling | • Statistical Graphics and Visualization |
| • Advanced Theory for Statistical Inference | • Foundations of Fairness in Machine Learning | • Parallel and Sequential Data Structures and Algorithms (C/SML) |
| • Foundations of Machine Learning | • Causal Inference: Identifiability and Estimation | • Linear Algebra |
| • Advanced Regression Methods | | • Probability Theory |

LEADERSHIP & ACTIVITIES

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| • Peer Mentor for underclassmen in UW Statistics PhD Program | 2022 - 2023 |
| • Member of Statisticians and Biostatisticians of Underrepresented Genders | 2020 - Present |
| • Mentor for underclassmen in CMU's Women in Statistics | 2018 - 2019 |