

# Anna P. Meyer

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## Education

### University of Wisconsin - Madison

PH.D. IN COMPUTER SCIENCES (exp. May 2025)

M.S. IN COMPUTER SCIENCES

Advisors: Aws Albarghouthi and Loris D'Antoni

Madison, WI

Aug. 2020 - present

Aug. 2020 - May 2023

### Carleton College

B.A. IN MATHEMATICS

Magna cum laude

Northfield, MN

Sept. 2014 - June 2018

## Research Experience

### Graduate Research Assistant

UNIVERSITY OF WISCONSIN - MADISON

Madison, WI

Jan. 2021 - present

- *Ongoing work:* Develop techniques to analyze the robustness of various machine learning algorithms to different types of data poisoning.
- *Completed project:* Abstractly verify robustness properties of decision-tree learning algorithms and linear models in the presence of data poisoning.
- Supervisors: Professors Aws Albarghouthi and Loris D'Antoni

### Research Assistant

HARVARD BUSINESS SCHOOL

Boston, MA

Summer 2022

- Worked in Prof. Hima Lakkaraju's AI4Life lab on explainable machine learning.
- Developed techniques to analyze and increase the robustness of feature attribution explanations to small changes to the training dataset.

### Research Assistant

CARLETON COLLEGE

Northfield, MN

March 2017 - Aug. 2017

- Developed software (primarily in Java) to count the number of tilings of a geometric region for any provided set of tiles under the guidance of Professor Jed Yang.
- Optimized my team's data structures and algorithms, resulting in efficiency gains of several orders of magnitude.

## Publications

FACCT 2023

### The Dataset Multiplicity Problem: How Unreliable Data Impacts Predictions

Anna P. Meyer, Aws Albarghouthi, Loris D'Antoni

NeurIPS 2021

### Certifying Robustness to Programmable Data Bias in Decision Trees

Anna P. Meyer, Aws Albarghouthi, Loris D'Antoni

## Preprints

February 2023

### On Minimizing the Impact of Dataset Shifts on Actionable Explanations

Anna P. Meyer<sup>†</sup>, Dan Ley<sup>†</sup>, Suraj Srinivas, Himabindu Lakkaraju

<sup>†</sup> Equal Contribution

## Professional Development and Industry Experience

### Public Service Fellow

WISCIENCE

Madison, WI

Jan. 2023 - Jan. 2024

- I was selected to be part of a 3-semester program that teaches scientists about civil engagement and public service in STEM.
- The program will culminate with a 4-month practicum with a community partner.

## Software Developer

Madison, WI

EPIC SYSTEMS

Aug. 2018 - Aug. 2020

- Designed, implemented, and supported projects to facilitate data interoperability between MyChart and other platforms, such as allowing patients to pull in other data from external health organizations so that they can see all their data in a single login.
- Coordinated with leadership, testers, and other developers to ensure a timely delivery of a high-quality final product.
- Researched accessible development best practices for the form validation framework and other bug fixes.

## Teaching and Mentoring Experience

### Teaching Assistant for CS/MATH 240: Discrete Math

Madison, WI

UNIVERSITY OF WISCONSIN - MADISON

Aug. 2020 - Dec. 2020

- Promoted student understanding of course content through problem-solving-based weekly discussion sections and office hours.
- Coordinated with other TAs and the instructor on course content and grading procedures and expectations.

### Tutor, Grader, and Teaching Assistant

Northfield, MN

CARLETON COLLEGE

Jan. 2016 - June 2018

- Tutored students at the drop-in Math Skills Center in Calculus I, II, & III, Linear Algebra, and a proof writing course.
- Graded weekly homework assignments for calculus, real analysis, and algorithms.
- Helped students to master course concepts through answering questions at biweekly TA sessions for real analysis and algorithms courses.

### Undergraduate student mentoring at UW-Madison

Loyal Khreis (Spring 2022)

Praise Osinloye (Spring/Summer 2022)

## Invited Talks

### CS Research Symposium

University of Wisconsin - Madison

CERTIFYING ROBUSTNESS TO PROGRAMMABLE DATA BIAS IN DECISION TREE LEARNING

Apr. 2022

## Other Projects

### The Mathematics of Gerrymandering

Northfield, MN

SENIOR COMPREHENSIVE EXERCISE, CARLETON COLLEGE

Sept. 2017 - March 2018

- Explored current research on how mathematics can be used to measure and combat political gerrymandering.
- Constructed a public on-campus exhibit to share our findings with the community; additionally, gave a public talk to interested community members.

### University of Minnesota GroupLens Externship

Minneapolis, MN

WINTER BREAK EXTERN

Dec. 2017

- Researched user behavior on Yelp with three other Carleton students at the GroupLens Human-Computer Interaction lab during winter break and reported our findings in a blog post [link].

## Activities and Service

### TAA (Teaching Assistant's Association)

Madison, WI

MEMBER AND CS DEPARTMENT STEWARD

Sept. 2020 - PRESENT

- Serve as a steward for the CS department and volunteer with various committees.
- Coordinate outreach between the TAA and Computer Science department leadership (both department chair and graduate student association leaders), resulting in an ongoing meeting series to share concerns and ideas.

### Carleton Nordic Ski Club

Northfield, MN

CAPTAIN

Sept 2015 - June 2017

- Led practice and taught new skiers 4-5 times a week in the winter.
- Coordinated with the administration and other captains to manage team finances, training, and racing.

# Honors & Awards

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2018    Phi Beta Kappa  
2015    Dean's List

*Carleton College*  
*Carleton College*