

# 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

## Publications

UAI 2023

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

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

Selected for an oral presentation (top 3% of submissions)

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

<sup>†</sup> Equal Contribution

## Preprints and Non-Archival Papers

DMLR at ICLR

2024

### Verified Training for Counterfactual Explanation Robustness under Data Shift

Anna P. Meyer<sup>†</sup>, Yuhao Zhang<sup>†</sup>, Aws Albarghouthi, Loris D'Antoni

## Research Experience

### Graduate Research Assistant

UNIVERSITY OF WISCONSIN - MADISON

Madison, WI

Jan. 2021 - present

- *Research aim:* Focusing on using formal methods techniques to analyze the impacts of multiplicity on machine learning models' robustness.
- *Ongoing project:* Developing novel techniques to generate counterfactual explanations that are provably robust to small model changes.
- *Completed projects:* Proposed the dataset multiplicity problem (i.e., how different variations on a training dataset can yield models that perform differently at an individual-sample level). Studied how dataset multiplicity manifests in decision trees (NeurIPS 2021) and linear models (FAccT 2023) using techniques inspired by abstract verification.

### Research Assistant

HARVARD BUSINESS SCHOOL

Boston, MA

May 2022 - Aug. 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, culminating in a paper (with oral presentation) at UAI.

### Research Assistant

CARLETON COLLEGE

Northfield, MN

March 2017 - Aug. 2017

- Developed software to aid in combinatorial research to count how many distinct tilings of a geometric region exist 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.

## Teaching and Mentoring Experience

### Workshop Developer

DATA SCIENCE HUB AT UNIVERSITY OF WISCONSIN - MADISON

Madison, WI

Nov. 2023 - present

- Developing a workshop on fair and trustworthy machine learning, designed for non-computer scientists who use machine learning in their work.
- Contributing to the open-source Carpentries project and following their lesson development best practices.

### Instructor for CS 220: Introduction to Data Programming

UNIVERSITY OF WISCONSIN - MADISON

Madison, WI

Summer 2023

- Served as the primary instructor for the Computer Sciences department's summer offering of CS 220.
- Lectured, held office hours, wrote exams, and managed course logistics including coordinating with a team of one TA and one undergraduate peer mentor.
- Received positive ratings on student course evaluation, e.g., 6.0 average on a 7-point Likert scale for the question, "Would you recommend this instructor to others?"

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

UNIVERSITY OF WISCONSIN - MADISON

Madison, WI

Aug. 2020 - Dec. 2020

### Tutor, Grader, and Teaching Assistant

CARLETON COLLEGE

Northfield, MN

Jan. 2016 - June 2018

### Undergraduate student mentoring at UW-Madison

Nikhil Kruthiventi (Fall 2023 - Spring 2024)

Layal Khreis (Spring 2022)

Praise Osinloye (Spring/Summer 2022)

## Service

### Reviewer

FAccT	2024
SaTML	2024
NeurIPS	2023

### GSAC (Graduate Student Advisory Committee)

FOUNDING MEMBER

Madison, WI

Sept. 2020 - May 2023

- Meet monthly with department chair, administrative staff, and graduate student representatives to discuss issues facing graduate students.
- Focus on finding realistic ways to improve graduate student worker conditions in the department, e.g., by standardizing pay rates, setting up "welcome check" bonuses for incoming students, and developing a seminar series to help match incoming students with potential advisors.

## Professional Development

### Research Mentor Training

THE DELTA PROGRAM

Madison, WI

Spring 2024

### Public Service Fellow

WISCIENCE

Madison, WI

Jan. 2023 - Jan. 2024

- Completed a 3-semester program that teaches scientists about civil engagement and public service in STEM and concludes with a 4-month practicum with a community partner.
- Developing a workshop on fair machine learning with the Data Science Hub at University of Wisconsin - Madison.

## Work Experience

### Software Developer

EPIC SYSTEMS

Madison, WI

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.

# Invited Talks

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## CS Research Symposium

Certifying Robustness to Programmable Data Bias in Decision Tree Learning

University of Wisconsin - Madison

Apr. 2022

# Honors & Awards

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2018    Phi Beta Kappa  
2015    Dean's List

Carleton College  
Carleton College