Anna P. Meyer

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Education

University of Wisconsin - Madison   *Madison, WI*

PH.D. IN COMPUTER SCIENCES (*exp. May 2025*)   *Aug. 2020 - present*

M.S. IN COMPUTER SCIENCES   *Aug. 2020 - May 2023*

Advisors: Aws Albarghouthi and Loris D'Antoni

Carleton College   *Northfield, MN*

B.A. IN MATHEMATICS   *Sept. 2014 - June 2018*

Magna cum laude

Research Experience

Graduate Research Assistant   *Madison, WI*

UNIVERSITY OF WISCONSIN - MADISON   *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   *Boston, MA*

HARVARD BUSINESS SCHOOL   *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   *Northfield, MN*

CARLETON COLLEGE   *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.

Publications

UAI 2023	**On Minimizing the Impact of Dataset Shifts on Actionable Explanations**
	Anna P. Meyer[†], Dan Ley[†], 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

† Equal Contribution

Teaching and Mentoring Experience

Workshop Developer   *Madison, WI*

DATA SCIENCE HUB AT UNIVERSITY OF WISCONSIN - MADISON   *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)
Layal Khreis (Spring 2022)
Praise Osinloye (Spring/Summer 2022)

Professional Development

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

CS Research Symposium

Certifying Robustness to Programmable Data Bias in Decision Tree Learning

University of Wisconsin - Madison
Apr. 2022

Service

Reviewer

SaTML	2024
NeurIPS	2023

GSAC (Graduate Student Advisory Committee)

FOUNDING MEMBER

Madison, WI
Sept. 2020 - PRESENT

- 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.

Honors & Awards

2018	Phi Beta Kappa	*Carleton College*
2015	Dean's List	*Carleton College*