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*

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*

- *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 *Boston, MA*

Harvard Business School *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 *Northfield, MN*

Carleton College *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

NeurIPS 2021 **Certifying Robustness to Programmable Data Bias in Decision Trees**

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

Preprints

June 2022 **Certifying Data-Bias Robustness in Linear Regression**

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

Professional Development and Industry Experience

Public Service Fellow *Madison, WI*

WISCIENCE *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

Undergraduate student mentoring at UW-Madison

Layal Khreis (Spring 2022)
Praise Osinloye (Spring/Summer 2022)

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.

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].

Activites 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

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