
Alexandra Bennett

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EDUCATION

University of Notre Dame

Ph.D., Computer Science

*Notre Dame, IN
August 2025 - Present*

St. Norbert College

Bachelor of Science, Computer Science and Mathematics

*De Pere, WI
May 2024*

- Magna Cum Laude
- Dean's List (all semesters)
- Graduate of the Honors Program

RESEARCH EXPERIENCE

University of Notre Dame

Graduate Research Assistant

*Notre Dame, IN
August 2025 - Present*

- Persistent Homology
 - Investigating practical applications of persistent homology transforms for shape analysis
 - Asking what theoretical guarantees we can provide for these applications.
- Kymograph Edge Detection
 - Develop Python-based software to extract length vs time data from kymographs
 - Identify relevant edges of kymograph by utilizing graph-theoretic image analysis approach

St. Norbert College

Poss-Wroble Research Fellowship

*De Pere, WI
June 2022 - July 2022*

- Measuring Partisan Bias with Randomly Generated District Maps
 - Self-propelled research regarding redistricting and evaluation of district maps
 - Researched limitations of computer generation for district maps
 - Developed a program to construct random district maps for Iowa based on several redistricting constraints
 - Used program to generate a sample of random district maps
 - Repurposed historical voting data, to evaluate the constructed maps using the Partisan Gini Index and compared them to the district maps used by Iowa

TECHNICAL SKILLS

Programming Languages: Python, C++, Java, HTML

Libraries and Tools: LaTeX, Git, Numpy, Pandas

TEACHING EXPERIENCE

University of Notre Dame

Teaching Assistant, Department of Computer Science and Engineering

*Notre Dame, IN
January 2026 - Present*

- **Design/Analysis of Algorithms (CSE 40113)**, 50 Students
 - Provide timely feedback on assignments

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- Holding weekly office hours

St. Norbert College

Teaching Assistant, Departments of Computer Science and Mathematics

De Pere, WI

August 2022 - May 2024

- **Introduction to Computer Programming** (CSCI 110), 20-40 Students
- **Applications of Discrete Structures** (CSCI 150), 15 Students
- **Software Engineering and Elementary Data Structures** (CSCI 205), 20 Students
- **Foundations of Mathematics** (MATH 250), 20 Students
 - Hold weekly office hours to assist students with questions regarding labs, programming assignments, and class concepts
 - Assist professors in lab periods by handling student questions
 - Proctor exams to undergraduate students
 - Aid professors in grading lab assignments, programs, and exams
 - Sit in class with students to assist during breakout sessions by giving hints, checking work, and further explaining concepts

PRESENTATIONS

Measuring Partisan Bias with Randomly Generated District Maps

- **Pi Mu Epsilon (PME) Conference**, De Pere, WI *November 2022*
- **Joint Math Meetings (JMM)**, Boston, MA *January 2023*

PROFESSIONAL EXPERIENCE

KBX

Software Engineering Intern

Green Bay, WI

May 2023 - August 2023

- Work in large code base hosted on Azure DevOps
- Modify and update code in the application
- Utilize branching to maintain a working application
- Participate as a scrum team member to plan and implement product features
- Assist the quality assurance team with test execution
- Design new tests for features within the application
- Work in both the front end and the back end of the application

HONORS & AWARDS

David C. Pankratz Award For Excellence In Computer Science

St. Norbert College

2024

Green Bay, WI

St. Norbert College Mathematics Award

St. Norbert College

2024

Green Bay, WI

ACADEMIC SERVICE & LEADERSHIP

Chapter President of Pi Mu Epsilon

St. Norbert College

2024

Green Bay, WI