
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

- 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**
- **Joint Math Meetings (JMM), Boston, MA**

*November 2022**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*