

LYDIA ALEM

612-703-2621 | alem0046@umn.edu | [linkedin.com/in/LydiaAlem](https://www.linkedin.com/in/LydiaAlem) | github.com/LydiaAlem

OBJECTIVE

A junior attending the University of Minnesota (Twin Cities), double majoring in Mathematics & Computer Science. I have a strong passion for problem-solving and a strong interest in the intersection of mathematics and technology!

EDUCATION

University of Minnesota

Bachelor of Computer Science (Expected May 2025)

Minneapolis, MN

Sept. 2021 – present

Relevant coursework: Introduction to Programming Concepts, Introduction to Algorithms & Data Structures, Discrete Structures of Mathematics, Algorithms & Data Structures, Machine Architecture & Organization, Advanced Programming Principles, Introduction to Artificial Intelligence, Principles of Databases.

University of Minnesota

Bachelor of Mathematics (Expected May 2025)

Minneapolis, MN

Sept. 2021 – present

Relevant coursework: Calculus 1 & 2, Multivariable Calculus, Differential Equations, Applied Linear Algebra, Series & Sequences, Statistics & Probability, Introduction to Numerical Methods I, Introduction to Numerical Methods II, Introduction to Computational Algebraic Geometry.

TECHNICAL SKILLS

Languages: Java, Python, C, Assembly (x86-64), C#, O-Caml.

Frameworks: Pytest, JUnit, OUnit, ASP.NET.

Developer Tools: Git, Visual Studio, Google Cloud Platform, PyCharm, IntelliJ, Eclipse.

Libraries: JFrame, Selenium, NumPy, Matplotlib.

EXPERIENCE

Software Development Intern

Amazon

- Incoming Intern for Summer '24

Expecting June 2024

Minneapolis, MN

Software Engineering Intern

Bracco Medical Technologies

- Worked collaboratively in a team to develop the ACIST CVI Delivery system, a highly accurate angiographic injection system designed for precise infusion of radiopaque contrast media.
- Integrated multiple language options into the CVI Delivery system, addressing the back-end server to incorporate the languages. Created efficient test cases to ensure the accuracy and effectiveness of the implemented language options.
- Tested and developed integration tests for the CVI (Centralized Visual Interface) screen, ensuring optimal functionality and seamless integration within larger systems.

May 2023 – August 2023

Eden Prairie, MN

Undergraduate Teaching Assistant

University of Minnesota

- **Courses:** CSCI 2041: Advanced Programming Principles (O-Caml), CSCI 2021: Machine Architecture & Organization, CSCI 1933: Introduction to Algorithms & Data Structures, CSCI 1935: Exploring Algorithms.
- Held office hours both in-person and virtually to assist students.

January 2023 – Present

Minneapolis, MN

Mathematics Undergraduate Learning Assistant

University of Minnesota

- **Course:** MATH 1051: Precalculus I
- Regularly attend an assigned section of a course to assist with classroom instruction using active learning techniques.

September 2023 – December 2023

Minneapolis, MN

PROJECTS

Fibonacci Spiral Generator | *Python, TKinter, Visual Studio Code*

- Created a Python GUI for generating Fibonacci spirals, improving user experience.

June 2023 – July 2023

Assembly LCD Clock | *Assembly (x86-64), C, Linux*

- Developed x86-64 assembly for LCD clock display, translating from C. Gained practical assembly-C integration skills.

March 2023 – April 2023

Fractal Drawers | *Java, JFrame, Visual Studio Code*

- Utilized the Canvas class to render the fractal shapes efficiently and handle user input events for panning and zooming functionality.

Sept. 2022 – Oct. 2022