

Jeffrey Abreu

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EDUCATION

Binghamton University, State University of New York, Thomas J. Watson College of Engineering and Applied Science

Bachelor of Science in Computer Science

Graduated May 2025

Major GPA: 3.91/4.00 | Cumulative GPA: 3.90/4.00 | Dean's List: Fall 2021 – Present | Binghamton University Scholars Program

TECHNICAL SKILLS

Languages: Python, Java, C, C++, C#, Rust, JavaScript, TypeScript, HTML, CSS

Software, OS, and Frameworks: VS Code, Eclipse, VIM, X2GO, Logisim, Github, Linux, OpenGL

Additional: Microsoft Word, Microsoft Excel, Microsoft Powerpoint, Replit, Django, Node.js

Relevant Coursework: Advanced OOP in C++, Programming for the Web, Programming with Objects & Data Structures, Operating Systems, Linear Algebra, Number Systems, Data Structures and Algorithms, Software Engineering, Automata Theory

Libraries and APIs: GLFW, GLAD, RESTful APIs, DOM API, Fetch API, Unity, React

PROJECT EXPERIENCE

Top-Down RPG, Independent project

Thiells, NY

C# Developer

January 2025 - June 2025

- Designed a **top-down RPG** inspired by classic video games such as The Legend of Zelda, Stardew, and Enter the Gungeon
- Utilized the **Unity** engine's tilemap feature to create a dynamic town with **animated environments** and **scene transitions**
- Developed an **attack** and **walking** feature for the player, as well as **NPCs** that use **AI** to interact with the player's actions in **C#**
- Used **Docker** to **containerize** the project to allow for **portability** without requiring the source code of the game itself

Lending Library Single-Page Application, Group project

Binghamton, NY

JavaScript Developer

November 2024 - December 2024

- Developed a web application using JavaScript, DOM APIs, and the fetch API to interact with a server-side lending library service.
- Implemented responsive UI components that displayed search results, book details, and borrower information dynamically
- Integrated **Parcel** bundler to streamline project build and serve the application on a local development server

Matrix Multiplication with POSIX Threads, Independent Project

Binghamton, NY

C Developer

April 2024 – May 2024

- Implemented single-threaded and **multi-threaded** matrix multiplication in C, using **pthread**s for concurrent execution
- Optimized performance by partitioning the workload among threads, achieving significant speedup on large matrices
- Ensured accuracy through automated result comparison to expected outputs, demonstrating robust **concurrency** handling

SharedPtr Smart Pointer, Independent Project

Binghamton, NY

C++ Developer

December 2024 - December 2024

- Recreated a **thread-safe**, exception-safe reference-counting smart pointer based on the `std::shared_ptr` class template
- Employed **atomic** operations for managing reference counts, ensuring safe usage across multiple threads
- Implemented **copy/move** constructors and assignment operators to handle various ownership scenarios without memory leaks

WORK EXPERIENCE

Undergraduate Research Assistant, Spring 2025 at SUNY Binghamton

Binghamton, NY

Rust-Based Circuit Placement

January 2025 - Present

- Assisting in researching **circuit placement** strategies using **Rust**, focusing on optimization techniques
- Utilized **Dijkstra's** algorithm and **BFS** to calculate all cell distances from a source that will be used to partition the circuit
- Developing a method to partition the circuit and assign cells appropriately using **recursive bisection placement**

American Eagle

West Nyack, NY

Brand Ambassador

July 2023 - Present

- Prepare merchandise for the sales floor by efficiently unpacking, censoring, tagging, and restocking merchandise shipments
- Utilize electronic equipment to determine the stock balance and ensure that merchandise is full to its optimal amount
- Deliver exceptional **customer service** by promptly addressing inquiries, assisting with selections, and processing transactions

LEADERSHIP EXPERIENCE

HACKBU

Binghamton, NY

Group Member

January 2022 - May 2022

- Attended programming workshops and worked individually to make a simple website using **HTML** and **CSS**
- Added features that allowed the website to display images and text related to food recipes

VOLUNTEER EXPERIENCE

TechWorks!

Binghamton, NY

Team Member

March 2022 - April 2022

- Efficiently managed and allocated funds to procure video games for a Techworks showcase at a community college.
- Created a presentation on Techworks' technological influence and history, which was showcased at the event.