

# Sebastian Newberry

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## EDUCATION

### Wayne State University

Bachelor of Science in Computer Science | GPA: 3.97

Detroit, MI

Aug. 2022 – Dec. 2025

## EXPERIENCE

### Detroit Public Schools X Rocket Companies

July – Aug. 2023, 2024, 2025

Tutor, [View Trivia Game Project](#), [View Event Planner Project](#)

Detroit, MI

- Led a team of 5 students in a technology tutoring program funded by Rocket Companies.
- Taught students core cybersecurity principles such as authentication token security, password hashing, and secure user input handling during web development.
- Built an interactive WebSocket-based game to demonstrate real-time communication differences between WebSockets and traditional HTTP.
- Deployed a backend server on a DigitalOcean VPS using Docker for containerization.

### Wayne State Cyber Defense Club

Sep. 2022 – Present

[Windows Active Directory](#), [View Wayne State CTF 2024 and 2025 challenges](#)

Detroit, MI

- Hardened Windows Server 2012 in the Collegiate Cyber Defense Competition (CCDC) to defend against simulated cyberattacks.
- Identified and exploited common web vulnerabilities, including SQLi, LFI, XSS, SSRF, and CSRF, on platforms such as HackTheBox and TryHackMe, while gaining expertise in their prevention techniques.
- Regularly participated in HackTheBox challenges to strengthen my CTF skills and refine my ability to identify and mitigate real-world vulnerabilities.
- Gained hands-on experience with Bash scripting, Linux command-line tools, and Windows PowerShell in working through challenges on the Hackthebox website.
- Developed and designed web exploitation, pwn, and forensics challenges for the Wayne State University CTF competition.
- Utilized tools like Wireshark for capturing network traffic, Ghidra for decompiling binaries, Burp Suite for web reconnaissance and exploitation.
- Deployed CTF challenges using Docker and CTFd to create isolated, reproducible environments.

## PROJECTS

### [Report on RAG \(Retrieval Augmented Generation\)](#) | *Python, PyTorch, LaTeX*

Feb. 2025 - Apr. 2025

- Authored a comprehensive report on Retrieval-Augmented Generation (RAG), demonstrating how LLMs retrieve external documents to answer queries.
- Implemented a practical demo of RAG using the RAGatouille Python library. View the notebook [here](#).

### [Volunteer Opportunities](#) | *ReactJs, NextJs, AWS S3, Pusher Websockets, PostgreSQL*

Sept. 2024 – Dec. 2024

- Collaborated with a team of 5 to build a platform connecting volunteers with organizations.
- Designed and implemented a messaging interface from scratch, enabling seamless real-time communication on the web platform using Pusher Websockets.
- Integrated Mapbox with the project to render listings on maps with relevant information.
- Configured Zustand to implement efficient pagination, enabling seamless data loading without the need for page refreshes.

### [MHacks 15 - Private Delivery](#) | *ReactJs, NextJs, MySQL, Prisma*

Feb. 2023

- Developed a full-stack platform to match delivery requests with available drivers.
- Gained hands-on experience through collaborative development in a 24-hour online hackathon.

## TECHNICAL SKILLS

**Languages:** Python, JavaScript, TypeScript, C++, Java, R, MongoDB, SQL (PostgreSQL, MySQL), HTML/CSS

**Frameworks & Libraries:** Matplotlib, Node.js, NumPy, Pandas, PyTorch, React

**Developer Tools:** Docker, Git

**Cloud Platforms:** AWS (Amplify, Lambda, S3)