Sebastian Newberry

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EDUCATION

Wayne State University Detroit, MI

Bachelor of Science in Computer Science | GPA: 3.85 *Aug. 2022 – Dec. 2025*

EXPERIENCE

Detroit Public Schools X Rocket Companies July 2024 – Aug. 2024, July 2023 – Aug. 2023

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 some important aspects of cybersecurity when creating websites, including signing auth cookies, making secure passwords, hashing passwords before putting them in a database, and much more.
- Created a game using websockets to demonstrate the difference between how websocket servers and traditional http servers work.
- Created and hosted a backend server on a DigitalOcean Virtual Private Server using Docker.

Wayne State Cyber Defense Club Sep. 2022 – Present

Windows Active Directory, View Wayne State CTF challenges *Detroit, MI*

- Hardened Windows Server 2012 in the Collegiate Cyber Defense Competition.
- 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 challenges for the Wayne State University CTF competition.
- One challenge involved using SQL injection to leak a flag from the session table in the database.
- One challenge expanded on the first by using a known session key and using knowledge of the express-session library to sign a cookie using HMAC, making the attacker an admin user.
- The last challenge was a scripting challenge for users script a solution to a problem using the "pwn" library in python.
- Used Docker to Host the three challenges on CTFtime.

PROJECTS

Volunteer Opportunities | *ReactJs, NextJs, AWS S3, Pusher Websockets, PostgreSQL* Sept. 2024 – Dec. 2024

- Worked with a group of 5 people on creating a website to connect 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

- Created a full stack application that can connect people with delivery needs to drivers.
- Participated in an online Hackathon, and learned a lot through collaboration with others.

TECHNICAL SKILLS

Languages: JavaScript, TypeScript, Python, R, Java, C++, SQL (Postgres, MySQL), MongoDB, HTML/CSS
Frameworks: React, Node.js
Developer Tools: Git, Docker, AWS S3, AWS Lambda, AWS Amplify
Libraries: pandas, NumPy, Matplotlib