Sebastian Newberry

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EDUCATION

Wayne State University — Detroit, MI
Bachelor of Science in Computer Science | GPA: 3.97 — *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)