

Brian Shao

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EDUCATION

Stony Brook University

September 2021 - May 2024

Bachelor of Science in Computer Science, Specialization in Security and Privacy

Stony Brook, NY

GPA: 3.62

Relevant Coursework: Cloud Computing, Web Security, Software Engineering, Software Security, Fundamentals of Computer Security, Scripting Languages, Compiler Design, System Fundamentals II, Analysis of Algorithms, Computer Networks

EXPERIENCE

Blockchain Lab: Lead Research Assistant

September 2023 - May 2024

Bitcoin Full Node, Python

Stony Brook, NY

- Help facilitate bi-weekly meetings by setting up lab equipment to ensure a smooth flow of presentations
- Configured Secure Shell (SSH) for remote connections to laboratory computers, optimizing the environment with Bash as the default shell to streamline workflow and improve remote operational efficiency by 20%
- Exhibited proficiency in Windows operating systems by effectively managing access privileges and executing advanced shell commands, thereby maintaining system integrity, enhancing security, and improving efficiency
- Worked with Bitcoin python libraries to parse and readdress 618,000,000 Bitcoin transactions

Stony Brook University: Operating Systems Research Assistant

January 2024 - Present

eBPF (Extended Berkeley Packet Filtering), C, Linux CLI, bpftools, bpftrace

Stony Brook, NY

- Researched eBPF's impact on Linux security and systems, laying foundational knowledge for practical applications
- Set up eBPF on Ubuntu, demonstrating Linux CLI and BpfTools proficiency for development and testing
- Developing dual applications targeting buffer overflow protection: a user-space program susceptible to attacks, and a kernel-space eBPF program that efficiently validates memory writes, ensuring enhanced system integrity

PROJECTS

GoogleMaps Clone | *Javascript, Axios, OSRM, PostgreSQL, MongoDB, Mapnik, Docker, Ansible* February 2024

- Developed a high-availability map service efficiently handling over 1,600 RPS, ensuring robust performance
- Automated multiserver deployment with Ansible, enhancing efficiency and cutting provisioning time by 30%
- Wrote and optimized SQL queries for searching locations, roads, and buildings, improving search speed by 20%
- Developed a comprehensive U.S. OpenStreetMap index, processing geographic data including 185 million nodes, 20 million ways, and 203 thousand relations, enabling highly scalable and precise routing solutions across regions

Mind Scribe | *MERN, Javascript, PageFlip, Redux, GPT-4, Axios*

February 2024

- Developed a MERN stack application, enabling a supportive platform for individuals with mental health concerns
- Implemented an interactive journal with react-page-flip, enhancing UX with customizable cover themes
- Integrated Redux for highly efficient state management and seamless communication across components
- Used Axios and integrated GPT-4 API to generate personalized emotional feedback for user journal entries

TECHNICAL SKILLS

Languages: Python, JavaScript, HTML/CSS, C/C++, Java, SQL, PHP, R, MIPS

Technologies/Frameworks: Agile Methodologies (Scrum), React, MongoDB, Postman, Axios, PostgreSQL, Mapnik, PyMongo, Linux CLI, API (Maps, REST, OpenAI), Node.js, Express, WordPress, Google Cloud Console

Developer Tools: Ansible, Docker, K6, Kubernetes, Git, Powershell, Bash, Wireshark, Github, Figma, Heroku, VS Code, Visual Studio, IntelliJ

Certification: Google Cybersecurity (Coursera - December 2023)