

Xichen Zhang

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Education

University at Buffalo, The State University of New York

Bachelor of Arts in Mathematics: Computing and Applied Concentration, Expected May 2025

Relevant Courses: Introduction to Computer Science II, Survey of Differential Equations, Multi-variable Calculus, Linear Algebra, Data- Structures, Data-oriented Computing, Discrete Structure, Calculus III, Computer Complexity and Algorithms, Intro to Numerical Analysis I

Technical skills

Programming Languages: Python, SQL, Java, R, HTML, CSS

Machine Learning Libraries: TensorFlow, Keras, Scikit-learn, Matplotlib, Numpy, Pandas, Streamlit, Ollama

Work Experience

Teaching Assistant, CS department, University at Buffalo

Sept 2024 - May 2025

- Guided **80+** students weekly in mastering foundational concepts in logic, set theory, graph theory. Conducted individualized tutoring that boosted the average student's coding efficiency by 20
- Empowering learners to tackle algorithmic challenges with strengthened confidence through tailored instruction on specific programming languages

Security Analyst Intern, Merlin Dental Laboratory, Philadelphia

May 2024 - Aug 2024

- Developed and deployed an advanced **Intrusion Detection System (IDS)** using **Python** and **Snort**, enabling **real-time network traffic analysis** and threat detection. Proactively prevented 31 unauthorized access attempts, safeguarding sensitive company data
- Implemented and optimized **multi-factor authentication (MFA)** and access control policies, strengthening system security and minimizing unauthorized access risks

Academic Projects

NoteWiz : UB AI Hackathon

Jan 2025 - Feb 2025

- Engineered an AI-powered **study assistant** in **Streamlit**, assisting **150+ students** by **automating note structuring** and enhancing content organization
- Upgraded AI-generated study materials using **few-shot learning** with Mistral's **LLM**, improving **content accuracy by 25%**. Refined AI response mechanisms using **prompt engineering** and **retrieval-augmented generation (RAG)**, ensuring **higher contextual relevance**.

Dynamic System Research : Research Assistant – Buffalo, NY

Oct 2023 - May 2024

- Optimized and developed computational models to study equilibrium conditions under different scenarios
- Applied **differential equations and computational methods** to simulate long-term behavioral trends
- Advanced model accuracy by **20%**, enabling better prediction of human responses to environmental changes

Flashing Your Room: Amazon Web Services, UI/UX Design, C, Python

Mar 2022 – Apr 2022

- Created front end with HTML and CSS to construct a responsive website using **React.js**, **HTML**, and **CSS**.
- Streamlined system reproduction acceleration rates and enhanced security with two-factor authentication.

Professional Certification

- Google Cybersecurity
- Machine Learning Specialization(Stanford&Deeplearning.AI)

Extracurricular Activities

NetDef Cybersecurity Competition, System Competitor, Buffalo, NY

Apr 2023 - May 2023

- Earned **2nd** place in campus network defense systems against **14 teams**
- Eradicated invasive viruses in Linux and Ubuntu in a group of 4