William Z. Liu

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Education

University of Illinois Urbana-Champaign — **Expected**: May 2026
Bachelor of Science in Computer Science and Linguistics — **GPA**: 3.8/4.0
American Invitational Mathematics Exam, Qualifier: Top 2.5% of students in competition math nationally (2022)

Experience

U.S. Department of Defense | *High-Performance Computing Intern* — May 2024 - Aug 2024
- Trained a multi-modal perception algorithm for autonomous driving using high-performance computers
- Reduced inference times of deep learning perception models with quantization using TensorRT
- Configured a POWER9 (ppc64le) architecture system for the model by compiling from source distributions

AT&T | *Software Engineering Intern* — May 2023 - Aug 2023
- Developed an open-world 3D virtual reality game in Unity and C# to demonstrate edge computing architecture
- Integrated AI into NPC dialogue with OpenAI Whisper and Amazon Polly
- Programmed a Python application using Python and ChatGPT API to generate network topology diagrams based on natural language

Commvault | *Development Intern* — Dec 2022 - May 2023
- Created an application to monitor and display network proxy status
- Built the GUI in .NET MAUI with XAML and C# for consistent cross-platform appearance
- Updated legacy projects from .NET 4 to .NET 6 by transitioning the dependencies using .NET Upgrade Assistant

Research

Shen Research Group | *Undergraduate Researcher* — Jan 2024 - Present
- Devised novel research methods to analyze Chinese propaganda using natural language processing (NLP)
- Utilized NLP techniques such as text classification and topic modeling with NLTK, scikit-learn, and PyTorch

OpenPolitica | *Research Intern* — Sep 2023 - Present
- Helped engineer the infrastructure of an AI-powered web application built with React, Flask, and LangChain
- Developed complex data processing algorithms to enhance the application's analytical capabilities

Virginia State University | *Research Assistant* — Sep 2023 - Dec 2023
- Built a visual evaluation framework in Python and Matplotlib for integrating natural language into drone control

Involvement

NeighborShare | *Volunteer Developer* — May 2024 - Aug 2024
- Maintained and modernized the web architecture of an entirely volunteer-run charity

ACM | *Website Infrastructure Co-Chair* — Jan 2024 - Present
- Coordinated and managed development of the ACM website built with React, Next.js, Yarn, and TailwindCSS

Happenings | *Tech Lead* — Jan 2024 - Present
- Led a team of 15 student developers to build an an event aggregation app with React Native and Firebase

Projects

Parrot | *HTML, CSS, JavaScript, Firebase*
- Developed a web application for shy students to communicate anonymously with their teachers in real-time
- Built it with HTML, CSS, and JavaScript and used Firebase to store the data and manage authentication

Scolisense | *C++, TypeScript, React, Node, Arduino*
- Constructed a shoulder-mounted device to measure scoliosis risk via a connected web application
- Programmed the Arduino microcontroller to collect shoulder angle data from gyroscope with Bluetooth
- Created the connected web application with React and TypeScript

Technical Skills

Languages: Java, Python, C, C++, C#, HTML, CSS, JavaScript, TypeScript
Technologies: Git, React, .NET, Unity, Firebase, AWS, Docker, NodeJS, SQL, TensorFlow, PyTorch, Arduino