

Alan Zhang

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EDUCATION

University of Maryland - College Park

Expected May 2025

Bachelor of Science in Computer Science

College Park, MD

- **Relevant Coursework:** Data Structures and Algorithms, Artificial Intelligence (AI, Python, Numpy, PyTorch), Object-Oriented Programming (Java), Parallel Computing (C++), Technologies and Paradigms (Dafny, Property Based Testing, JUnit, Hoare logic, Coq)

PROJECTS

Web Portfolio | Next.js, GSAP, Sass, React, JavaScript

[Web Portfolio Link](#) | [GitHub Link](#)

- Developed a dynamic online portfolio using Next.js to showcase full-stack development projects, technical skills, and relevant experience.
- Leveraged advanced JavaScript and React features (components) to create interactive elements and enhance website functionality.
- Utilized Resend and React email for the contact form functionality. Employed Sass for styling, helping to preserve modular and maintainable CSS.

Topflight Tracker | Next.js, GSAP, Axios, Sass, JavaScript, Redis

[Topflight Tracker](#) | [GitHub Link](#)

- Developed a comprehensive football tracking application using Next.js, displaying real-time standings, fixtures, and results for top European leagues.
- Implemented server-side rendering (SSR) to optimize API calls to Football Data API, minimizing client-side load and enhancing app performance.
- Utilized Axios for API requests, ensuring efficient data fetching from football leagues, while managing API rate limits through caching strategies.
- Integrated Redis for caching API responses, reducing redundant API calls and improving load times by storing league data and news updates for a defined period.

EXPERIENCE

Research Assistant Intern

August 2024 – Current

@Temple University

Remote

- Engaging in academic research related to Software-Defined Networking (SDN), focusing on the separation of control and data planes, enhancing network flexibility, and understanding SDN's role in simplifying complex network configurations.
- Contributing to the analysis of SDN architecture, including its use of OpenFlow to manage network traffic dynamically and securely through a centralized controller, allowing for efficient packet forwarding.
- Reviewing recent advancements and challenges in SDN technologies such as programmability, flexibility, and control-plane centralization, highlighting areas for further research and practical implementations.

Software Developer Intern

April 2024 – August 2024

@MindHome

Remote

- Worked on updates and enhancements to the company website, leveraging React for web application portions and React Native for mobile optimizations.
- Contributed personal insights and recommendations for leveraging React to enhance aesthetics and functionality of our web application.
- Collaborated closely with a team of interns to develop and refine React application projects, enhancing project outcomes through effective teamwork.
- Gained foundational skills in robotics programming by engaging with Linux and Python, gaining practical experience in developing and testing automated solutions.

TECHNICAL SKILLS

Programming Languages: JavaScript, TypeScript, SQL, Python, Java, C++,

Web Technologies: React.js, Next.js, Node.js, GSAP, Tailwind CSS, Three.js, HTML, CSS, Hooks API

Database Technologies: SQL, MySQL PostgreSQL, MongoDB, Redis

Software and Tools: MATLAB, RStudio, TensorFlow, PyTorch, Pandas, NumPy, GitHub, Microsoft Office, Excel,