# ALAN ZHANG

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## EXPERIENCE

### Software Engineer – Full Stack
**@Toll Brothers** *(Fortune 500)*

May 2025 – Current
*Fort Washington, PA*

- Architected and developed new user-facing features for America's luxury homebuilder, using a modern stack including Next.js, SCSS, and a headless CMS to enhance the digital home-buying experience.
- Reduced bundle size by 15% and boosted developer velocity by migrating static data to AWS S3 and refactoring the codebase to eliminate over 100 redundant files with reusable templates.
- Accelerate feature delivery in an Agile environment by managing an average of 10 pull requests per month from conception to deployment. Improve code quality and prevente critical bugs by conducting rigorous peer reviews in Jira, directly contributing to the stability of high-traffic marketing sites.
- Enhanced the home-buying journey by designing and launching a site-wide "Print View" feature (with sorting) for thousands of property listings, consolidating disparate data points into a clean, printer-friendly summary.

### Research Assistant Intern
*@Temple University*

Aug. 2024 – Dec. 2024
*Remote*

- Developed a technical report on Software-Defined Networking (SDN) that evaluated the trade-offs between network programmability and control-plane centralization, identifying key areas for performance optimation.
- Reviewed 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
*@MindHome*

April 2024 – Aug. 2024
*Remote*

- Improved user experience and application performance by leading the implementation of high-performance UI updates using React and React Native. Proactively identified and resolved key performance bottlenecks, resulting in a more responsive and efficient user interface.
- Developed and optimized key components of React applications, proactively identifying and resolving performance bottlenecks to elevate user experience and efficiency.

## PROJECTS

**Web Portfolio** | *Next.js, GSAP, Sass, JavaScript*     [Web Portfolio Link](#) | [GitHub Link](#)
- Developed an online portfolio using Next.js to showcase personal projects, technical skills, and relevant experience.

**StreamerTracker TFT** | *Python, Flask, PostgreSQL, Next.js, GSAP*     [Streamer Tracker](#) | [GitHub Link](#)
- Developed a specialized tracking application for Teamfight Tactics streamers using Next.js, showcasing statistics and updates on streamer match history, team compositions, augments, and more.
- Utilized Python and Flask to handle backend processing, managing intricate data interactions and providing API for frontend consumption.
- Integrated Neon for PostgreSQL database management, optimizing data storage and retrieval to efficiently handle streamer statistics and user requests.

**Topflight Tracker** | *Next.js, GSAP, Axios, Sass, JavaScript, Redis*     [Topflight Tracker](#) | [GitHub Link](#)
- Solved the problem of fragmented real-time sports data for top leagues by developing a football tracking application that consolidated standings, fixtures, and results into a single, intuitive interface.
- 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.

## EDUCATION

### University of Maryland - College Park
*Bachelor of Science in Computer Science*

Aug 2022 - May 2025
*College Park, MD*

## TECHNICAL SKILLS

**Programming Languages**: JavaScript, TypeScript, Python, Java, SQL, C++
**Front-end/Back-end Technologies**: React.js, Next.js, Node.js, HTML, CSS, SCSS, Tailwind CSS, GSAP, Flask
**Database Technologies**: SQL, MySQL, PostgreSQL, MongoDB, Redis
**Cloud & DevOps**: Git, Github, Gitlab, Bitbucket, AWS (S3, CloudFront), Docker, Jira
**Software and Tools**: MATLAB, RStudio, TensorFlow, PyTorch, Pandas, NumPy