ALAN ZHANG

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EXPERIENCE

Software Engineer – Full Stack Web — May 2025 – Current
@Toll Brothers (Fortune 500) — *Fort Washington, PA*
- Architected and shipped high-impact user-facing features for America's largest luxury homebuilder using **Next.js** and **SCSS**, improving clarity and engagement across thousands of property listings.
- Designed scalable, data-driven page templates and shared UI abstractions that power hundreds of regional and community pages, enabling rapid feature rollout with minimal regression risk.
- Reduced JavaScript bundle size by **15%** and improved page performance by refactoring legacy components, removing **100+ redundant files**, and migrating static content pipelines to **AWS S3 + CloudFront**.
- Launched a site-wide **HomePrint "Print View" system**, aggregating CMS-driven property data into a structured, printer-optimized format used by thousands of customers monthly.
- Led accessibility modernization initiatives—implementing **WCAG-compliant navigation patterns**, **SkipToMain links**, and fully accessible **CustomSelect inputs**—ensuring compliance across major marketing surfaces.

Research Assistant Intern — Aug. 2024 – Dec. 2024
@Temple University — *Remote*
- Developed a technical report on **Software-Defined Networking (SDN)** evaluating trade-offs between **network programmability** and **control-plane centralization**, identifying key areas for performance optimization.
- Reviewed advancements and challenges in SDN technologies such as **programmability**, **flexibility**, and **centralized control**, highlighting areas for further research and implementation.

PROJECTS

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

YSCLunchSoccer | *Next.js, Express.js, Prisma, Supabase, PostgreSQL* — [Live Site](#) | [GitHub](#)
- Designed and built a full-stack platform to solve a real operational problem for our local soccer group: tracking attendance, balancing teams, and reducing pre-game coordination time from **10–20 minutes** to under **1 minute**.
- Implemented a scalable backend using **Express, Prisma, and Supabase PostgreSQL**, enabling reliable session creation, attendance logging, and real-time player availability tracking for **100+ recurring users**.
- Developed secure authentication and session management using **Supabase Auth**, JWT cookies, and protected routes to ensure consistent login behavior across devices.
- Implemented an automated **fair team generation algorithm** using player skill history and availability data, eliminating manual balancing and reducing pre-game organization effort by **90%**.

Topflight Tracker | *Next.js, GSAP, Axios, Sass, JavaScript, Redis* — [Live Site](#) | [GitHub](#)
- Developed a multi-league football analytics platform displaying **standings**, **fixtures**, and **results**.
- Integrated **Redis caching** to reduce duplicate API calls and cut data-fetching latency, improving load times.
- Implemented monitoring and fallback logic for third-party API outages, increasing system reliability and ensuring consistent user experience during peak match periods.

StreamerTracker TFT | *Python, Flask, PostgreSQL, Next.js, GSAP* — [Live Site](#) | [GitHub](#)
- Built a **streamer tracking app** for Teamfight Tactics showing match history, team compositions, and augments.
- Implemented a **Flask backend** with API integrations and a scalable **Neon PostgreSQL database**.

EDUCATION

University of Maryland – College Park — Aug. 2022 – May 2025
Bachelor of Science in **Computer Science** — *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, Express.js, GraphQL, REST APIs
Database & ORM Technologies: PostgreSQL, MySQL, MongoDB, Redis, Prisma, SQL
Cloud & DevOps: Git, GitHub, GitLab, Bitbucket, AWS (S3, CloudFront), Docker, Jira, Vercel, Supabase