ZHIYUAN SONG

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EDUCATION

University of California, Santa Cruz   **Sep. 2022 – June 2026**
Bachelor of Science in Computer Science   *GPA: 3.84/4.00*

EXPERIENCE

Web Developer Intern   **Dec 2024 – Present**
Labs Laboratory | Columbia University   *New York, NY (Remote)*
- Collaborated with Columbia University Labs, an AI and biology lab (published in **Nature**), to enhance their website.
- Designed an SVG-based **human organ interaction system** for precise localization and interaction with **15+ organs**.
- Built the system with **native HTML, CSS, and JavaScript** for **smooth, responsive interactions**.
- **Integrated** the system into the lab's **public knowledge platform**, enhancing accessibility for researchers and public.
- Collaborated via **GitHub PR workflows** with lab researchers to align development with scientific needs.
- Improved the lab's **online presence** and **user experience**, enhancing engagement with AI-driven biomedical research.

Full-Stack Developer Intern & Technical Lead   **Dec 2024 – Present**
3CCA Church   *Los Angeles, CA (Remote)*
- Led the redesign and redevelopment of the 3CCA Church website, enhancing user experience and operational efficiency.
- Built a **scalable architecture** using **React.js** (front-end), **Node.js** (back-end), and **MongoDB** (database).
- Developed **core features** like event management, audio resources, and article publishing to support church operations.
- Optimized **website performance** through **responsive design** and **code splitting**, reducing load times by **30%**.
- Plan to deploy on **AWS** and configure **SSL certificates** to support **HTTPS secure access**.

PROJECTS

AnimeHub | *Full-Stack Development, React, Node.js, Express.js, MongoDB, Javascript*   **June 2024 – Nov 2024**
- Developed a **full-stack** anime forum website for anime enthusiasts, featuring ratings, rankings, and user discussions.
- Implemented a **decoupled architecture** with separate deployments on **Netlify** and **Heroku**, ensuring **scalability**.
- Built **RESTful APIs** with **Express.js** for ratings, filtering, and user management, enhancing **backend efficiency**.
- Optimized **MongoDB** by embedding ID arrays to **simplify data access** and **reduce query overhead**.
- Implemented **JWT authentication** with an **Axios interceptor** for **token refresh** and **seamless API retries**.
- Added multi-language support using **i18n**, storing language preferences in user accounts for persistent customization.
- Enhanced the user interface using **Ant Design** and **Material-UI**, improving usability and **visual appeal**.

Personal Website | *Frontend Design, Next.js, Tailwind CSS, Typescript*   **Oct 2024 – Jan 2025**
- Developed a **personal portfolio website** using **Next.js** and **TypeScript**, focusing on **minimalist UI design**.
- Built **reusable glassmorphism components** with **Tailwind CSS** and TypeScript for scalable, maintainable code.
- Enhanced **user experience** with **Framer Motion** for **smooth animations** and **immersive browsing**.
- Implemented **system-synced light/dark mode** with **next-themes**, supporting **seamless theme switching**.
- Designed **responsive layouts** with **Material UI breakpoints** and Tailwind CSS for **cross-device consistency**.
- **Deployed** on **Vercel** with a **custom domain** and **continuous updates** for better functionality and user experience.

TECHNICAL SKILLS

Programming Languages: JavaScript, TypeScript, Python, C++, Java, C
Frameworks & Libraries: React.js, Next.js, Redux, Tailwind CSS, Node.js, Express.js
Databases, DevOps & Tools: MongoDB, Redis, SQL, Git, Docker, AWS, Linux, Nginx, GitHub Actions