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*

RELEVANT COURSEWORK

- Computer Architecture
- Algorithm Analysis
- Principles of Computer System Design
- Intro to Machine Learning
- Programming Abstractions in Python
- Computer Systems and C Programming

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.
- Developed an **interactive anatomy visualization tool** with precise localization for **15+ organs**.
- Used **SVG** and **native JavaScript** to enable **dynamic interaction** and improve research accessibility.
- Collaborated on **GitHub** through **PR-based workflows**, analyzing documentation and contributing to the codebase.
- Participated in regular **progress meetings** to align with the research team's goals.
- Enhanced research efficiency and exploration through **intuitive interface** design and responsive system improvements.

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%**.
- Configured **server deployment** with **SSL certificates** and planned to deploy on **AWS** for scalability and reliability.

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, Java, Python, C++, C, C#, HTML/CSS, Assembly Language, R
Libraries: Redux, Context API, Axios, Socket.io, Scikit-learn, Pandas, NumPy, Matplotlib, Redis, Mongoose, JWT
Frameworks/Databases: React, Node.js, Express.js, MongoDB, Redis
Tools: Linux, Unix, Git, GitHub, VS Code, Ubuntu, PyCharm, Jupyter

REWARDS

Dean's Honor: Winter 2024, Fall 2023, Spring 2023, Winter 2023, Fall 2022