ZHIYUAN SONG

1355 Ruby Ct, Apt 1, Capitola, CA, 95010

📞 909-551-8610 ✉ songzhiyuan98@gmail.com 🔗 linkedin.com/in/zhiyuan 🌐 zhiyuansong.dev

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 – March 2025
Labs Laboratory | Columbia University   *New York, NY (Remote)*
- Led the development of the **lab's public knowledge portal**, optimizing information management, and user experience; contributed technical solutions as a Co-author for a research paper expected to be published in **Nature**.
- Developed an **interactive SVG-based anatomical visualization system**, enabling precise interaction with **15+ organs**, improving research data visualization and **enhancing user engagement.**
- **Optimized** the research data management system, building a **serverless architecture** with **Netlify Functions + MongoDB**, reducing **98% code redundancy** across **200+ pages**, and **converting 1400 lines of code into 2 reusable lines**, improving scalability and maintainability.
- **Strengthened** research data **security**, implementing **MongoDB IP whitelisting**, **access control policies**, and **encryption**, ensuring compliance with data protection standards.
- Implemented data request monitoring using **Brevo API**, based on Principal Investigator (PI) feedback, enabling real-time tracking of dataset access trends.
- Designed and optimized **frontend interactive components**, aligning with academic research needs, improving UI responsiveness and animation, and enhancing data visualization usability and researcher interaction experience.
- Collaborated with researchers and engineers, using **GitHub PR workflows** to align development with scientific requirements, ensuring effective research presentation and data sharing.

Full-Stack Developer Intern & Technical Lead   Jan 2025 – 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