ZHIYUAN SONG

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EDUCATION

University of California, Santa Cruz   **Sep. 2022 – June 2026**
Bachelor of Science in Computer Science   *GPA: 3.60/4.00*

EXPERIENCE

Full-Stack Engineer   **April 2025 – July 2025**
LoopInterview   *Santa Cruz, CA*
- Developed and **launched** a paid **AI interview platform** with customizable sessions and real-time feedback
- Built the AI engine using Gemini API and prompt engineering to enable multi-turn, multi-role, tone-adaptive interviews
- Created personalized interview generation by extracting key info from resumes and jd using regex and LLMs
- Integrated ElevenLabs for voice synthesis and Three.js for visual interviewer presentation to enhance immersion
- Contributed to a modern stack using **Next.js** (TypeScript), **Flask, Firebase**, and **Docker**, deployed on **Google Cloud**

Web Developer Intern   **Dec 2024 – July 2025**
Laboratory of AI & Biomedical Science, Columbia University   *New York, NY (Remote)*
- Developed and maintained lab website and public portals, focusing on visualizing research data and outcomes
- Boosted platform traffic by **5,000+** visits post-MEDICINE **launch**, expanding global visibility of lab work
- Built analytics charts with D3.js, refactored **200+** pages, and created a download system for scalability
- Refactored the lab website architecture for full mobile responsiveness and optimized interaction flow
- Credited as co-author in two submitted papers (**Nature & Nature Medicine**) for contributions to platform development

Full-Stack Developer Intern & Technical Lead   **Jan 2025 – June 2025**
3CCA Church - Nonprofit   *Remote*
- **Led** the development of a new online platform using the **MERN stack**, deployed and **in active use**
- Built the admin system and core modules (events, audio, articles) to support non-technical staff operations
- Designed system architecture and flexible MongoDB schemas to enable scalable content management and development

PROJECTS

TalentSync | *MERN, Gemini API, Stripe, Access Control*   **Feb 2025 – Present**
- Built and **launched** an **AI-powered job platform** to solve resume–JD mismatch and weak cover letter alignment
- Extracted resume & JD fields via pdf-parse, regex, and Gemini with **100%** accuracy for personalized generation.
- Developed JD analysis engine with HR / HM / ATS scoring for personalized feedback and questions
- Built a multi-step AI prompt flow to generate personalized cover letters based on JD, company, and user experience.
- Integrated **Stripe** with tiered membership system and enforced fine-grained access via Redux and backend auth
- Modular backend enables **dynamic model routing** (GPT-4o, Gemini Flash 2.0) and future model integration

AnimeHub | *Full-Stack · MERN (MongoDB, Express.js, React, Node.js)*   **June 2024 – Nov 2024**
- Built and deployed a multilingual anime community platform for sharing and tracking using decoupled MERN stack
- Implemented **RESTful APIs** for rating, filtering, and user management, ensuring modular backend functionality
- Implemented JWT authentication with an Axios interceptor for token refresh and **seamless API retries**.
- Used Redis to temporarily store verification codes for secure and time-limited user registration.

RESEARCH PUBLICATIONS

Z. Song, M. Duggan, *et al.* "*Multi-organ MRI Digitizes Biological Aging Clocks Across Proteomics, Metabolomics, and Genetics.*" *Nature Medicine* (Accepted in Principle), 2025.
Z. Song, J. Wen, *et al.* "*Sleep Chart of Biological Aging Clocks Across Organs and Omics.*" *Nature* (Under Review), 2025.

TECHNICAL SKILLS

Programming Languages: JavaScript, TypeScript, Python, C++, Java, C, SQL
Frameworks & Libraries: React.js, Next.js, Redux, Tailwind CSS, Node.js, Express.js, Flask
Databases & DevOps: MongoDB, Redis, PostgreSQL, Firebase, Docker, Git, GitHub Actions, Nginx, Linux
AI & Tools: OpenAI API, Gemini API, Stripe, ElevenLabs, Google Cloud, AWS, Prompt Engineering