Jingheng (Steven) Cai

Tel: +61 0424 807 363 Email: stevencaijingheng@gmail.com
Portfolio: https://steven-portfolio-eight.vercel.app/

PROFILE

Efficient IT and Engineering expert with degrees from the University of New South Wales and the University of Sydney. Experienced in 3D modeling, design automation, and developing communication applications. Skilled in Python, C, C#, HTML, CSS, JavaScript, and various web frameworks, with strengths in problem-solving, efficiency optimization, and user experience enhancement. Demonstrates strategic project management and technical documentation abilities, supported by multilingual proficiency and adaptable problem-solving skills.

EDUCATION

The University of New South Wales Sydney, Australia
The Master of Information Technology - WAM:76/100 Jun 2023 - Present
The University of Sydney Sydney, Australia
Bachelor of Engineering Honors (First Class: Mechanical Engineering) Feb 2019 - Jul 2023

WORK EXPERIENCE

Passive Engineering Service Sydney, Australia
IT & Systems Intern Oct 2023 - Jan 2024

- Client Liaison & Requirement Analysis: Collaborated with clients to gather project requirements and translate them into system specifications, ensuring seamless integration of IT solutions with passive fire safety processes.
- Quotation Automation: Developed and maintained a quotation tool that automated the generation of cost estimates, streamlining the process and reducing manual input by 30%.
- Digital Inspection & Quality Control: Assisted in designing a digital inspection platform for quality control of passive fire stopping installations, enabling real-time tracking of job progress and reducing errors by 20%.
- Inventory & Documentation Management: Created a centralized digital system for managing warehouse stock, integrating barcode scanning for penetration IDs, and automating the creation of penetration registers and fire matrix documentation for improved efficiency and accuracy.

Jacaranda Flame Consulting Sydney, Australia
Technical and Business Analyst - Internship Jun 2022 - Aug 2022

- Innovation in 3D Structural Modeling: Partnered with the University of Sydney to enhance 3D structural modeling processes for Hanlon Industries, resulting in a 15% improvement in accuracy and efficiency of structural assessments.
- Automation of Design Processes: Spearheaded the development and implementation of an automation process for billboard model creation in Tekla Structures, reducing the design cycle time by over 95%, from several days to under 30 minutes.
- Skill Acquisition and Application: Proactively mastered C# programming within 2 months, applying this new skill to customize software functionalities, which directly contributed to meeting the client's unique operational needs.
- Strategic Project Management: Utilized Gantt charts and project management methodologies to track and manage project scope, ensuring the timely delivery of 100% of project milestones, with a project completion rate that exceeded initial timelines by 10%.

RELEVANT PROJECTS

Capstone Project: AI-Powered Flashcard Generation Plugin for Atlassian September 2024 - Present

Technologies: React, TypeScript, Forge API, Gemini API, Confluence API, Forge Storage

- AI-Driven Flashcard Creation: Designed and developed a plugin that integrates Gemini API, enabling the automatic generation of memory-based and comprehension-based flashcards from selected text, greatly enhancing content creation efficiency.
- Frontend Development: Delivered a responsive, intuitive user interface with React and TypeScript, providing a seamless experience for users to manage flashcards and increasing overall user engagement and satisfaction.
- Backend Integration: Engineered backend logic using Forge API and Forge Storage, ensuring smooth handling of flashcard creation, editing, deletion, and categorization, with robust data persistence and real-time updates.
- Testing and Validation: Led comprehensive manual testing efforts, ensuring the plugin’s stability and performance

across key features such as sorting, filtering, pagination, and flashcard management.

Directed Weighted Graph Implementation Project July 2024 - August 2024

Technologies: C++, Dynamic Polymorphism, Automated Testing Frameworks

- Innovative Design and Implementation: Designed and implemented a generic directed weighted graph in C++, utilizing dynamic polymorphism to manage both weighted and unweighted edges, enhancing the flexibility and functionality of the graph manipulation.
- Optimization of Graph Operations: Optimized graph operations including node insertion and edge connections, achieving efficient management of complex graph structures and ensuring high performance even with large datasets.
- Testing Framework Development: Developed and integrated a robust testing framework to validate all graph functionalities, leading to a stable and reliable software component with comprehensive test coverage that confirmed the correctness of all graph operations.
- Documentation and Code Readability Enhancement: Contributed to the improvement of project documentation and code readability, which facilitated easier maintenance and scalability of the graph implementation, receiving commendation for clarity and adherence to best coding practices.

Real-Time Messaging and Video Sharing Application, Sydney October 2023 - November 2023

Technologies: Python, TCP/UDP Sockets, Multithreading

- Efficiency and Concurrency Optimization: Developed a client-server system, achieving a 40% improvement in message delivery speed and supporting simultaneous video streams for up to 100 users.
- Scalable Server Architecture: Implemented a multithreaded server architecture, enhancing system scalability to handle triple the initial user load without performance degradation.
- Real-Time Communication Enhancement: Utilized Python threading to separate listening and sending tasks, ensuring 99.9% uptime for uninterrupted, real-time communication.
- Security and Protocol Design: Crafted custom protocols and a secure authentication system, increasing data security by 30% after rigorous testing and optimization.

ADDITIONAL INFORMATION

- Languages: Mandarin (Native), English (Fluent), Cantonese (Conversational)
- Soft Skills: Analytical, problem-solving, project management, adaptability
- Technical Skills: Python, C++, C, C#, HTML, JavaScript, React, Next.js, CSS, MySQL, SOLIDWORKS, MATLAB, ANSYS, COMSOL, Microsoft Office Suite