Henry Chen

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Summary

I am a software developer with a strong interest in embracing new technologies and building practical solutions. I enjoy creating efficient systems, using automation to simplify work, and applying clean, maintainable code to make life easier for both myself and others.

I work well in collaborative environments and value clear communication. I am comfortable contributing in diverse teams and can collaborate effectively with people from different backgrounds to achieve shared goals.

Education

University of Western Australia, Master of Information Technology — Feb 2023 – Dec 2024

- **Coursework:** IoT, Web Development, Cloud Computing, High Performance Computing, etc.

University of Sydney, Bachelor of Computing - Computer Science — Feb 2020 – Dec 2022

- **Coursework:** Systems Programming, Agile Software Development, Data Struct. & Algorithms, etc.

Shanghai Jiao Tong University, Summer School Program — Jun 2022 – Jul 2022

- **Coursework:** Data Processing, Computer Management

Work Experience

Software Engineer, Inovit Inc. – Remote, Australia — Jun 2025 – Present

- Migrated the legacy Dealer Portal from .NET Web Forms to a modern stack using **React**, **TypeScript**, and **Vite**, improving frontend load speed by 40% and enabling a responsive, user-friendly interface.
- Designed and implemented a secure API Gateway with **AWS Lambda**, adding rate limiting and request validation to protect backend services.
- Developed backend services with **Django/Python** and integrated with **SQL Server 2016,** modernizing ERP data access for users, orders, and inventory modules.
- Built a **CI/CD** pipeline with **GitHub Actions**, **Git**, **Docker**, and **Nginx**, reducing manual deployment time by 90% and ensuring consistent, automated releases.
- Practiced **Agile Scrum** with **GitHub Projects**, leading sprint planning, backlog refinement, and iterative delivery across the IT team.

Senior Math Tutor, HD Education – Sydney, Australia — Jul 2019 – Jan 2023

- Designed and delivered customized math curricula, incorporating creative teaching strategies to boost engagement.
- Built strong student relationships through clear communication and a supportive learning environment.
- Adapted lesson plans to individual progress, improving comprehension, confidence, and long-term retention.

Internship

IT and Data Intern, Path of Hope Foundation – Perth, Australia — Jul 2024 – Oct 2024

- Led **ETL**, data cleaning, and visualization for the "HOPE Report" supporting domestic violence prevention efforts.
- Migrated the official website to a scalable, secure platform—improving UX and cutting annual costs by several thousand dollars.
- Developed data governance and backup protocols in collaboration with senior staff, improving data reliability and team efficiency.

Extracurricular

National Institute of Technology – Professional Year Program
Mar 2025 – Present (Ongoing)

Projects

IoT - Smart Vision Hat Aug 2023

An **IoT**-based wearable device designed to assist visually impaired individuals. Built with **Raspberry Pi** and **YOLOv8** object detection model.

Tech Stacks: Flask, Python, BootStrap, Firebase, YOLOv8, NoSQL, GitHub Actions

- Developed a **Flask**-based interface integrated with Firebase for auth and data sync.
- Designed and developed a voice-activated AI assistant for visually impaired users via GPT-3.5 API.
- Deployed using **CI/CD** with secure SSH pipelines via **GitHub Actions**.

Full Stack - AASYP Chat System Aug 2024

A modern full-stack internal chat system built for ASEAN-Australia Strategic Youth Partnership (AASYP).

Tech Stacks: Django, Python, BootStrap, React, Firebase, GitHub Actions

- Built a real-time messaging app with user auth, chat, and contact management using **Django**, **WebSocket**, and **React**.
- Designed a clean, responsive UI with real-time search, module transitions, and intuitive navigation.
- Deployed with **Docker** containers and automated CI/CD pipeline via GitHub Actions.

Frontend - Personal Website Nov 2024

A modern personal portfolio website designed to showcase projects, blog posts, and photography.

Tech Stacks: Next.js, React, Typescript, Tailwind CSS, Supabase, Vercel

- Built a responsive, single-page portfolio using Next.js, TypeScript, React, and Tailwind CSS.
- Integrated **Supabase PostgreSQL** as a backend database for managing blog posts, images, and user data, implemented **RESTful** API endpoints.
- Implemented dark/light modes, **responsive** design, image **lazy-loading**, and long-term caching to enhance UX and loading speed on all devices.
- Deployed on **Vercel**'s serverless platform with automatic CI/CD and environment config.

Backend - Parallel Implementation of Search based on Fish School Behaviour Nov 2024

A high-performance computing implementation in C using multi-threading and multi-processing to simulate fish school behavior.

Tech Stacks: OpenMP, MPI, Bash

- Achieved a dynamic simulation of fish school behavior by designing a sequential C simulation that enables diverse testing scenarios through adjustable simulation steps and fish numbers.
- Enhanced the program's speed by introducing a multi-threaded implementation with OpenMP and distributed memory parallelism with MPI, allowing for fine-grained experimentation with process and thread counts, scheduling strategies, and advanced parallelization techniques.
- Automatically tested various combinations of number of processes, threads, and OpenMP scheduling types on the Setonix supercomputer, optimizing cache behavior and array partitioning for maximum performance.
- Recorded a remarkable speedup, achieving 100x performance improvement compared to the serial model when utilizing 4 processors and 32 threads.

Technologies

Languages: Python, Java, C, JavaScript, HTML, CSS, Bash, R

Frameworks & Libraries: Flask, Django, React, Next.js

Cloud & DevOps: AWS (IAM, EC2, S3, Amplify, Lambda), Docker, Git, GitHub Actions, Jenkins

Databases: PostgreSQL, SQL Server, SQLite, Firebase, Supabase

Project Management & Documentation: Trello, Google Workspace, Latex, Markdown, Swagger

References

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