

Henry Chen

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Summary

Full-stack software engineer with hands-on experience building modern web applications and integrating AI / computer-vision features (YOLOv8, GPT-3.5) into user-facing products. Comfortable across the stack — **Python/Django** on the backend, **React/TypeScript/Next.js** on the frontend — with a focus on RESTful API design, cloud deployment, and clean, maintainable code.

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 Structure & Algorithms, etc.

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

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

Work Experience

Software Engineer, Inovit Inc. – Sydney, Australia Jun 2025 – Present

- Migrated the legacy Dealer Portal from .NET Web Forms to a modern stack using **React 19**, **TypeScript**, and **Vite**, delivering a responsive, user-friendly B2B e-commerce interface.
- Designed and implemented **49 RESTful API endpoints** with **Django 5 / DRF** and **SQL Server**, including **cross-repo OpenAPI type generation** for end-to-end type safety between backend and frontend.
- Architected **4-region database routing** and executed a **zero-downtime migration** on a shared production SQL Server, modernizing ERP data access for users, orders, and inventory modules.
- Implemented a secure API Gateway with **AWS Lambda**, adding rate limiting and request validation to protect backend services.
- Built a **CI/CD** pipeline with **GitHub Actions**, **Docker**, and **Nginx**, reducing manual deployment time and ensuring consistent, automated releases.
- Practiced **Agile Scrum** with **GitHub Projects**, contributing to 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

AI / IoT - Smart Vision Hat

Aug 2023

An IoT-based wearable device designed to assist visually impaired individuals, combining computer vision and a voice-activated AI assistant.

Tech Stacks: Flask, Python, Bootstrap, Firebase, YOLOv8, Raspberry Pi, GitHub Actions

- Deployed the **YOLOv8** object-detection model on **Raspberry Pi** for real-time scene understanding.
- Designed and developed a voice-activated AI assistant using the **GPT-3.5 API** for natural-language interaction.
- Built a **Flask**-based web interface integrated with Firebase for authentication and data sync.
- 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.

Full Stack - Personal Website

Nov 2024 – Present

A bilingual (EN/ZH) personal portfolio, blog, and photography gallery with privacy-first analytics and WCAG AAA accessibility.

Tech Stacks: Next.js 16, React 19, TypeScript, Tailwind CSS 4, Supabase, Jest, Playwright, Vercel

- Built a responsive portfolio with **12 pages** and **10 API routes** using **Next.js 16** (Turbopack), **React 19**, and **TypeScript**.
- Integrated **Supabase PostgreSQL** and Supabase Storage as backend for blog posts, photo assets, and command-palette search; implemented **RESTful** API routes with ISR and on-demand revalidation.
- Implemented internationalisation (next-intl), dark/light themes, masonry photo gallery with lightbox, Cmd+K command palette, and **Framer Motion** animations.
- Set up a full CI pipeline (lint, typecheck, unit tests with Jest, **29 Playwright E2E tests**) running on every PR; auto-deployed to **Vercel**.

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, TypeScript, JavaScript, Java, C, HTML, CSS, Bash, R

Frameworks & Libraries: Django, DRF, Flask, React, Next.js, Node.js, Tailwind CSS

AI / ML: OpenAI API (GPT-3.5), YOLOv8, Prompt Engineering

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

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

Project Management & Documentation: GitHub Projects, Agile / Scrum, OpenAPI / Swagger, LaTeX, Markdown

References

Natalie Djurdjevic

Lecturer, National Institute of Technology

0473 031 419

Kevin Wang

Vice President, University of NSW Law Review

0468 331 441