Wenxi (Vincent) Jiao

AI & Software Engineer · Applications & Applied AI

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PROFILE

AI graduate from the University of Auckland. I build **apps for daily life, AI assistants and research tools**, taking projects from idea to release. My work includes **four App Store apps**, a seating tool used weekly for around 30 meetup participants, and an open-source AI framework. Seeking an applied AI or software engineering role in New Zealand.

01 INDEPENDENT ENGINEERING

Yumi — Founder & AI engineer — Mar 2026 - Present

An AI assistant that turns conversation into actions in everyday apps. Ask it to remind you to buy milk, and it creates a task in Mugi. Ask about a new word, and it can make a study card in Memori. I built the assistant, app connections and supporting services.

TOOLS

Connected applications

yumi-nexus
Platform ↗
Shared sign-in ↗

Connect chat to real reminders, habits and study materials.

Built tools to **manage reminders, record habit check-ins, organise vocabulary and generate study cards**. Changes appear in Mugi and Memori.

Enforced the **signed-in user's identity on the server** so the AI cannot select another account. Added Firebase sign-in, app permissions and configurable approval before tools run.

APP

Mobile & web client

Flutter / Dart
Web client ↗
Simulated demo ↗

Bring chat, voice and app actions to mobile and web.

Built a **Flutter client for iOS, Android and web** with replies appearing as they are generated, voice, action approvals, searchable history and ten interface languages.

Preserved **message drafts across navigation and window resizing**. Tested streamed replies, sign-in and input method editors (IMEs); deployed the web client and a simulated demo.

CORE

Open-source agent core

GitHub ↗
PyPI ↗
Apache-2.0

Let developers give an AI assistant access to their app's functions.

Published **yumi-agent on PyPI**, with a setup command and developer libraries. Apps connect their functions over **WebSocket**, using Python, TypeScript, Dart or Swift.

Supported **Claude, Gemini, OpenAI and Ollama** so the assistant can select and call connected app functions while streaming its response.

Added **SQLite/LanceDB memory**, versioned prompts and automated tests using simulated AI responses. Automated package releases with GitHub Actions and OIDC.

PLATFORM

Multi-user platform

yumi-enterprise
Closed source

Keep user data separate and give administrators control over costs and access.

Extended the core through **plugins**. Separated customer data in PostgreSQL; added OAuth sign-in, hashed credentials and limits on login attempts.

Built a **React admin console with usage and cost limits**, plus execution records to investigate which tools the assistant used.

Enforced access levels in SQL. Administrative access to message content requires a **saved audit record before viewing**.

DELIVERY

Deployment & reliability

GCP / self-hosted
Docker · Terraform

Deploy the service and verify that saved data can be recovered.

Deployed with **Docker Compose, Caddy/TLS and health checks**. Provisioned GCP with Terraform and GitHub OIDC; later moved the API to a self-hosted Mac mini.

Implemented backups and release rollback. **Validated recovery by restoring a backup in a separate environment** and comparing database tables.

EDUCATION

Master of Artificial Intelligence
University of Auckland
Feb 2025 - Jul 2026
Final results released Sep 2026.
Research: CiteSeek.

BEng, Communication Engineering
Tianjin University, China
Sep 2019 - Jul 2023
Thesis: training a simulated ship to navigate and avoid collisions.

CORE SKILLS

AI & retrieval
Tool calling, agent loops, MCP, RAG, embeddings, retrieval evaluation.

Machine learning
PyTorch, reinforcement learning (SAC, PPO, TD3), Transformers, LSTM, computer vision.

Backend & data
Python, FastAPI, SQL, WebSocket; PostgreSQL, SQLite, LanceDB, Firestore.

Applications
Flutter / Dart, SwiftUI, ARKit; TypeScript, React, Streamlit.

Cloud & delivery
GCP, Firebase, Terraform, Docker, GitHub Actions, OIDC, pytest.

LANGUAGES

English
Professional working

Mandarin · Native

Japanese · JLPT N2

WORK ELIGIBILITY

3-year open NZ Post Study Work Visa

02 PRODUCTS IN USE

Mugi ↗

2026

App Store release

Flutter · Firebase
RFC 5545 reminders

An app for daily tasks, habits and a mood diary.

Built **reminders, goals, flexible habit check-ins and a mood diary**, with notifications and ten interface languages. Users can create tasks through Yumi chat.

Implementation: tested RFC 5545 recurrence rules, including intervals, limits and end dates.

Memori ↗

2025 - 2026

App Store release

Flutter · Firebase
Adaptive review

Save new words as study cards and practise them in short reviews.

Built **AI-assisted vocabulary cards in ten learning languages**, with meanings, pronunciation and examples. Reviews adapt to what each learner remembers; cards can also be created through Yumi.

Implementation: migrated from SwiftUI to Flutter, with regression tests to preserve review scheduling.

SaKi ↗

2025 - 2026

App Store release

SwiftUI · ARKit
RealityKit

A walking game that turns your own route into a trail to follow.

Released an augmented-reality walking game where players **record a route and follow a glowing trail through the camera view**, collecting virtual objects with sound and vibration cues.

Implementation: ARKit/RealityKit with motion smoothing, position-jump rejection and tracking recovery.

Tsukimi ↗

2026

App Store release

SwiftUI · PencilKit
WidgetKit

Share drawings and photo notes with one person on their Home Screen.

Released a **private, two-person space for drawings and photo notes**; drafts stay private until sent.

Implementation: PencilKit drawing, anonymous pairing and WidgetKit, with picture delivery independent of widget refresh.

1.1.0 submitted for App Review: Built AI photo editing with local version history and opt-in nearby pairing for compatible iPhones.

Meetup Seater ↗

2025 - Present

In weekly use

Python · Streamlit

Help an event organiser seat people with new conversation partners.

Used weekly for around 30 participants at an Auckland Japanese-English meetup. Built phone check-in, live table assignments and round controls for the organiser.

Design choice: a weighted seating algorithm balances languages and table sizes, prioritising new conversation partners between rounds.

Karate Match Timer ↗

Oct 2026

Used at a live event

SwiftUI · AppKit
Electron · JavaScript

Time karate matches and display scores for a community event.

Built and operated the tool at an Auckland karate community's first exhibition on 10 October 2026. The instructor requested a copy for future events.

Implementation: built macOS and Windows apps with separate operator and audience windows. Used monotonic timing and restored saved matches in a paused state; also built an offline browser timer.

03 NEW PRODUCTS IN DEVELOPMENT

Loci ↗

2026

Private preview

Flutter
iPhone & Mac

Track job applications, interviews and the documents sent for each role.

Built an organiser for **applications, interview dates, notes and résumé versions**, keeping the next step and application history together.

Design choice: save locally so editing works offline; merge independent edits and keep both versions of conflicting fields. Tested offline edits, restarts and conflicts; added versioned attachments.

Joysemble ↗

2026

In development

Flutter
iOS, Android & web

Party games for a group in the same room, using one phone or several.

Building **Word Mystery and Antidote at Dawn**, with private roles and guided turns. Word Mystery asks players to describe secret words and vote for the person with a different one.

Implementation: offline shared-phone play and connected rooms with private views and shared round state. Seven interface languages and word translations; players use a common spoken language.

ONGOING WORK I continue to build, test and refine products, learning from practical use and feedback.

04 APPLIED AI & RESEARCH

CiteSeek ↗

2026

Master's research

Python · Agentic RAG
FastAPI · React
SQLite · MCP

Find research papers relevant to a claim and show passages for review.

Built a **paper-search and reading workbench** to help researchers find sources behind a claim and inspect the relevant passages.

Evaluation: compared nine pipelines on 28 curated machine-learning claims. The best retrieved a labelled relevant paper in the first five results for **27/28 claims, versus 9/28 with keyword search (BM25)**. This small benchmark measures paper retrieval, not whether a passage proves a claim.

Implementation: combined scholarly search, citation expansion, semantic embeddings and passage-level checks, with PDF/HTML parsing and deduplication. Ranking by citation frequency alone achieved **89.3% Hit@5** before model-based relevance assessment.

Integration: delivered a command-line tool and eight MCP tools for use by other AI systems. Integrated with my supervisor's system without modifying its source code.

Ship RL

2023

BEng thesis

PyTorch · SAC
MATLAB
Physics simulation

Train a simulated ship to follow a route and avoid collisions.

Trained a navigation policy with rewards based on maritime collision-avoidance rules (COLREGs). Achieved **95% collision avoidance after approximately 4,000 training episodes in simulation**.

Simulation: built a four-degree-of-freedom MMG ship model that accounts for inertia and delayed response to controls.

Implementation: implemented Soft Actor-Critic from the research paper in PyTorch and compared two reward designs.

05 COMMUNITY & INTERESTS

Community

University & local life

Volunteer work in community sport and student support.

Train weekly with a **non-profit karate community in Auckland offering free participation**. Volunteered as a **calligrapher** for its first exhibition, lettering participants' names on certificates.

Supported new students' transition to university life as a **UniGuide volunteer** at the University of Auckland.

Languages

Weekly meetups

Connect with people across cultures.

Attend **Korean, Japanese and English meetups every week** in Auckland. I keep learning languages to make friends with people from different cultural backgrounds.

Music & making

Guitar · Home projects

Make guitar practice more immersive with sound-responsive lighting.

Built a **home automation setup with AI voice control** for lights and appliances, and programmed lighting to respond to my voice and guitar. I also enjoy **busking with guitar and vocals**.

Interests

Outside software

Keep learning new skills and stay active.

In Auckland, I have explored **barista training, motorcycle riding, forklift operation and light-aircraft flying**. Other interests include running and half-marathons.

ALWAYS LEARNING I keep exploring new skills and languages, meeting people across cultures and trying ideas in everyday life.