

Zekai (Kai) Zhao

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github.com/Zekai-Zhao775 | linkedin.com/in/zekai-kai-zhao | Co-op: Winter & Summer 2026

EDUCATION

Western University

Master of Engineering in Software Engineering, GPA: 3.6/4.0

London, ON

Sep 2024 - Expected Aug 2026

Xidian University

Bachelor of Engineering in Computer Science, GPA: 3.7/4.0

Xi'an, China

Sep 2019 - Jul 2024

EXPERIENCE

Robarts Research Institute

Research Intern

London, ON

Mar 2025 - Aug 2025

- Collaborated with research team as a software developer on a full-stack multi-agent real-time voice virtual therapist system for accessible mental health support needs, utilizing Next.js, OpenAI Realtime API and Agent SDK
- Refactored voice processing pipeline from STT - LLM - TTS workflow to end-to-end voice model using OpenAI Realtime API with WebRTC, reducing response latency by 62% from approximately 1300ms to under 500ms
- Implemented seamless agent handoff mechanisms between specialized AI therapists, built custom agent tools for history context retrieval and progress tracking that reduced context window usage by 80% through capping only 20 recent messages plus structured therapeutic data
- Integrated 3D VRM avatar rendering with lip sync using Three.js with WebXR support for immersive VR experiences

Tech for Social Impact, Western University

Full-Stack Developer (Part-time)

London, ON

Feb 2025 - Aug 2025

- Developed main page, donation page and footer component using React 19 with Tailwind CSS for Fund Homecare Canada non-profit website refactor, improving user experience for 100+ cancer patient families accessing palliative care services
- Built serverless Stripe payment processing using Node.js AWS Lambda functions and API Gateway REST endpoints to handle donation checkout sessions and webhook events, eliminated monthly infrastructure costs
- Integrated Google Analytics 4 with custom event tracking to monitor user engagement across multiple traffic sources, enabling data-driven decisions for advertising budget allocation and marketing campaign optimization

PROJECTS

IntelligentBI | Spring Boot, React, MySQL, Redis, RabbitMQ, OpenAI API

Jun 2025 - Aug 2025

- Developed full-stack AI-powered business intelligence platform enabling one-click Excel data analysis with automated chart generation using Spring Boot, React, and MySQL database with MyBatis Plus
- Integrated OpenAI Chat Completions API for intelligent data visualization building Excel-to-ECharts pipeline with custom prompt engineering and JSON response parsing, achieving 95% accuracy in chart type selection
- Designed asynchronous processing architecture leveraging RabbitMQ message queues and custom thread pool executors, eliminating API timeouts and enabling concurrent AI processing without blocking user interface
- Implemented Redis caching for rate limiting and session management with support for concurrent user sessions

SocialHub | Node.js, Express.js, PostgreSQL, Prisma, Firebase Auth, GKE

Oct 2024 - Dec 2024

- Built RESTful API backend with Node.js, Express.js, and TypeScript, implementing 20+ endpoints for users, posts, and comments with Prisma ORM and Google Cloud SQL (PostgreSQL)
- Implemented Firebase Auth with JWT-based stateless authentication and role-based authorization
- Containerized application with Docker and deployed on Google Kubernetes Engine (GKE) with automated CI/CD pipeline using GitHub Actions, enabling horizontal scaling, zero-downtime rolling updates, and load balancing.

TECHNICAL SKILLS

Languages: JavaScript, TypeScript, Java, Python, HTML, CSS, SQL

Frameworks & Libraries: React, Next.js, Spring Boot, Node.js, Express, OpenAI Agent SDK, JUnit, Tailwind CSS

Databases & Tools: PostgreSQL, MySQL, JPA, MyBatis Plus, Redis, Prisma

Cloud & DevOps: Docker, Google Cloud Platform, Firebase, GitHub Actions, AWS Lambda, Kubernetes

Dev Tools: Git, Postman, Agile, OpenAPI, UML, Claude Code, Cursor