

Alexander Kim

Senior Full-Stack Developer

Remote (Global)

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Summary

Senior Full-Stack Developer with 5+ years of hands-on experience architecting scalable, fault-tolerant AI and health-care platforms. Specialized in delivering production-grade systems using **Python/FastAPI**, **React/TypeScript**, and **Kafka/PostgreSQL**. Known for strong technical ownership, pragmatic design, and mentoring junior engineers. Passionate about intuitive UX and AI integration that drives real impact.

Selected Technical Highlights

- Built **Speech Coach**, a production-ready AI coaching platform with GPT-based feedback, speech recognition, and TTR analysis.
- Designed DICOM routing and storage system with asynchronous PACS-to-local and PACS-to-S3 transfer modes, full C-MOVE/C-STORE support, and HAProxy-based load management.
- Delivered multi-bot prompt-chaining orchestration layer using FastAPI, Redis, PostgreSQL, and Telegram API.
- Integrated ClickHouse + Redpanda for real-time token analytics at scale with streaming ingest.
- Led full-stack UX delivery for LLM refinement workflows and user-facing performance dashboards.

Core Skills

Python (FastAPI) · Java (Spring Boot) · JavaScript/TypeScript (React, Next.js, NestJS) · GraphQL · Redis · PostgreSQL · Docker · Kafka & Flink · ClickHouse · MinIO · Jenkins/GitHub Actions · WebSocket & SSE · Prometheus + Grafana + Loki · Test Automation

Key Projects

Speech Coach — Open Source Project (pre-launch)

2025.03 – Present

Founder / Lead Engineer

- Designed and led development of a pre-launch AI language coaching product, targeting non-native senior engineers preparing for international roles.
- Architected modular microservices backend using FastAPI, PostgreSQL, Kafka, and ClickHouse; optimized for scalability and pluggable metric pipelines.
- Implemented full observability stack with Grafana, Loki, and Prometheus to enable real-time monitoring of lexical and behavioral language metrics.
- Built developer onboarding pipeline with full documentation, open-source release strategy, and initial traction through tech community outreach.

GitHub: github.com/aksovius/speech-coach

Docs: speech-coach.alexanderkim.dev

DICOM Routing System

2025.05 – 2025.07

System Architect / Lead Developer

- Designed and led development of a scalable DICOM routing and storage platform, capable of handling over 100GB of medical imaging data per day.
- Implemented asynchronous, horizontally scalable routing with Redis streams, C-MOVE/C-STORE support, and HAProxy load balancing; tested with concurrent load from 5 PACS sources.
- Achieved fault-tolerant delivery with 3-step retry logic, Redis-based queuing, deduplication via DICOM UUIDs, and PostgreSQL + Redis clustering.
- Mentored a mid-level frontend engineer, delegated tasks, and conducted technical planning as project lead.

Stack: FastAPI, PostgreSQL, Redis, pynetdicom, Docker, HAProxy, S3

Professional Experience

Douzone (Healthcare Division, Korea)

2024.06 – Present

Senior Full-Stack Developer

- Designed and deployed mission-critical metrics pipeline using Kafka and Flink across 20+ topics, ensuring idempotency and zero data loss for healthcare data.
- Migrated state management from Redux to Zustand; improved app responsiveness and reduced boilerplate by 30%.
- Spearheaded CI/CD automation with Jenkins and Playwright, cutting deployment cycle from 3h to 1h and improving test coverage.
- Collaborated with compliance teams to align streaming data pipelines with medical regulatory standards.

Stack: React, TypeScript, Zustand, Spring Boot, Kafka, Flink, Docker, PostgreSQL, HAProxy, Jest, Playwright

Gachon University R&D (AI + MedTech)

2022.06 – 2024.05

Middle Full-Stack Developer

- Built Celery-based AI platform with GPU partitioning (MIG) across 6 distributed servers for scalable inference.
- Integrated real-time DICOM processing via WebSockets; processed 100+ medical images per hour with U-net segmentation.
- Built monitoring dashboards using Prometheus and Grafana for production system observability.

Stack: React, Next.js, Redux, FastAPI, Docker, MongoDB, MySQL, JWT, Grafana, Celery

Deep Inspection (South Korea)

2021.09 – 2022.05

Full-Stack Developer

- Built QA platform with Mask R-CNN and 2D/3D defect visualization for automated quality control.
- Reduced reporting time by 80% via document sync and UI improvements.

Stack: React, Socket.io, MongoDB, JWT, Python, REST

Smart City Lab (South Korea)

2020.03 – 2021.08

Full-Stack Developer

- Built steel inventory and crack analysis system with custom U-net models for predictive maintenance.
- Automated weekly report generation and added RBAC support for multi-tenant access control.

Stack: React, Express.js, PostgreSQL, JWT, Bootstrap

Part-time Roles

RevisionOnline (Remote, Australia)

2025.02 – 2025.04

Senior Full-Stack Developer (Volunteer)

- Fixed critical exam submission issues using Fabric.js; resolved blocking bugs affecting user experience.
- Refactored complex UI state logic for improved stability and maintainability in high-stakes testing environment.
- Integrated Supabase authentication and redesigned the user profile flow for better UX.

Stack: Next.js, NestJS, Supabase, PostgreSQL, Fabric.js

KAIST ICLab (Remote/Part-time)

2023.11 – 2024.03

Senior Full-Stack Developer / Solution Architect

- Proposed and implemented complete architecture for a real-time audio/video analytics dashboard.
- Led backend development and collaborated closely with AI and frontend developers in distributed team.
- Dockerized AI pipelines and implemented real-time metrics export with SSE for live data streaming.

Stack: React, Express.js, Docker, MongoDB, Celery, SSE

Education

- **M.S., Sungkyunkwan University** — Convergence Engineering, 2022 (GPA 4.04/4.5)
- **B.S., Korea National Open University** — Computer Science (expected 2026)
- **B.S., MEPhI (Russia)** — Civil Engineering, 2013