

Chaewon Kim

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SKILLS

Programming Languages	Javascript Typescript Python C++ C HTML/CSS
Technologies and Tools	React Node.js Redux Express Vite FastAPI MongoDB NoSQL OOP websocket Git Bootstrap Figma Unit Testing Integration Testing Jest Vitest E2E Testing Cypress Playwright CI/CD Github Actions Cloud Computing Google Cloud Digital Ocean WordPress MySQL Docker Postman RESTful APIs AI BigQuery Elasticsearch CORS Prometheus Grafana Azure Application Insights Azure Monitor
Languages	Korean (Native) English (Professional)

TEAM PROJECTS

YVR Traffic

Oct 2023 - May 2024

Frontend Developer

- Collaborated on a website for BC residents showing live traffic conditions using highway cameras and geolocation.
- Integrated **Google Maps API** via **Google Cloud** to display the user's real-time location with a dynamic blue position marker.
- Collaborated closely with backend developers to integrate frontend features with real-time location data, enabling geolocation tracking, route rendering, and traffic camera image loading via Google Maps API.

Smart Diagnosis (Figma Design Project)

Sep 2024 - Dec 2024

Team Leader

- Led a UI/UX design team to prototype a smart healthcare app for self-diagnosis, medication suggestions, and appointments.
- Managed task distribution, timeline planning, and led final project presentation.
- Applied **User-Centered Design** and **iterative design process**, including research, multiple prototype-feedback loops, and final UI refinement.
- Created high-fidelity mockups and user flows using **Figma**.

PERSONAL PROJECTS

Discord Bot

Backend Developer, DevOps

- Developed a **Python** Discord bot that automatically notifies team channels when a pull request is created or approved, integrating **GitHub webhooks** for real-time event delivery.
- Implemented observability stack using **Prometheus**, **Grafana**, and **Azure App Insights** to monitor a production Discord bot, tracking latency (p50/p95/p99), error rates, and connection health following the RED method.
- Built and configured **Grafana dashboards** visualizing real-time bot metrics across multi-cloud infrastructure (GCP and Azure), with **SLO tracking** targeting sub-200ms response times.
- Leveraged **CI/CD** pipelines using **Jenkins**, **Harbor** and **ArgoCD** for automated testing and deployment.

PawBondAI (Hackathon - AI Accelerate: Unlocking New Frontiers)

Full Stack Developer

- Developed an AI-powered dog adoption matching platform using **React (TypeScript, Vite)** for frontend and **FastAPI (Python)** for backend.
- Implemented **RAG** system using **Elasticsearch** with semantic text fields and **Google Vertex AI** inference endpoints for embeddings, building **hybrid queries** that combine vector similarity with structured filters across 4 core indices.
- Integrated **BigQuery** for data warehousing, **SQL** analytics on adoption outcomes, and **BigQuery ML** logistic regression model for outcome predictions with confidence scoring.
- Deployed backend on **Google Cloud Run** with **Docker** containerization, and frontend on **Netlify**.
- Secured API communication using **CORS** configuration, **Pydantic** validation, and **Google Cloud Storage** for chat history persistence with session management.
- Created **RESTful API** with FastAPI supporting **CRUD** operations, bulk CSV uploads, predictive analytics, and multilingual document processing.
- Designed responsive UI with **TailwindCSS** and **shadcn/ui** components, implementing **TanStack Query** for efficient data fetching and state management.

PERSONAL PROJECTS

Real-Time Collaborative Notes App

Full Stack Developer

- Developed a multi-user real-time notes web application with collaborative editing **React (Vite)** for frontend and **Node.js/Express** for backend.
- Deployed backend on a **DigitalOcean** Droplet with **NGINX** reverse proxy, **PM2** for process management, **HTTPS** via Let's Encrypt, and frontend on Vercel with custom domain.
- Used TipTap, Yjs, and Hocuspocus server(**Websocket**) to manage presence indicators and **Socket.IO** for real-time note updates.
- Built and managed backend services with **Node.js**, **Express**, **JWT authentication**, and **MongoDB (Mongoose)** for storing notes and shared access roles.
- Managed client-side state using **Redux Toolkit**, and implemented responsive UI with **Bootstrap** and custom **CSS**.
- Wrote and maintained automated tests using **Vitest**, **Cypress**, and **Playwright** to ensure reliability across core flows and browsers
- Set up **CI/CD** pipelines using **GitHub Actions** for automated testing and deployment.

AI Chat App

Full Stack Developer

- Developed a conversational AI website using **React (Vite)** for frontend and **Node.js/Express** for backend, integrating **OpenAI's GPT-3.5 Turbo API** for context-aware responses.
- Deployed backend on a **DigitalOcean** Droplet with **NGINX** reverse proxy, **PM2** for process management, **HTTPS** via Let's Encrypt, and frontend on Vercel with custom domain.
- Secured API communication using **Axios**, **CORS** configuration, and environment-based **.env** management for backend and frontend.
- Designed a responsive **Bootstrap**-based UI with **React Markdown**, smooth **CSS** transitions, and real-time message rendering.
- Set up **CI/CD** pipelines using **GitHub Actions** for automated testing and deployment.

Portfolio Website

Cloud DevOps, Web Developer

- Deployed a custom **WordPress** portfolio on a **DigitalOcean** Kubernetes Cluster, using **PVCs** for **MySQL** and content persistence.
- Wrote **Kubernetes** configuration files (*manifest.yaml*) to automate **HTTPS** setup with cert-manager and Let's Encrypt using a ClusterIssuer.
- Configured **NGINX** Ingress Controller with Ingress rules to expose WordPress at *www.chaewon.ca*, securing traffic over **HTTPS**.
- Managed DNS on **DigitalOcean** with A record routing, and customized **WordPress Plugin** with **PHP**, **Javascript**, and **CSS** to add dark mode, responsive UI, and dynamic resume sections.

C++ SDL2 Game Projects

Developer

- Built classic games like Pong and Snake using **C++** and **SDL2**, focusing on game loop design, rendering, and user input.
- Applied **object-oriented principles** for modular game structure (Game Engine, Player, Ball, etc.).
- Integrated basic sound effects and scorekeeping, and packaged builds for macOS.

EDUCATION

Diploma in Computer Science

Douglas College

Studies began in Associate of Science program (2020–2022), transitioned to Diploma in Computer Science major

Sep 2020 - Feb 2025
New Westminster, Canada