Chao Fan

Toronto, ON | (+1) 416-716-5612 | contact@chaof.dev

LinkedIn | GitHub | chaof.dev

Software Engineer | Full-Stack

Software Engineer with 4+ years of experience building high-scale web applications serving 10M+ users at HelloFresh. Deep expertise in Full Stack development (React, Go, Node.js) and cloud-native architecture (Kubernetes, AWS). Proven track record of integrating AI/ML capabilities into production systems using LangChain, LangGraph and AWS Bedrock.

- **Frontend & Edge:** React, Next.js, TypeScript, Cloudflare Workers (Edge Compute).
- **Backend & Distributed Systems:** Golang, Python, Node.js, gRPC, Kafka (Event Streaming), Microservices, PostgreSQL, Redis.
- **AI & ML Engineering:** RAG Pipelines, LangChain, LangGraph, AWS Bedrock, Vector Databases (Embeddings), LLM Orchestration.
- **DevOps & Cloud:** AWS (EKS, Lambda), Kubernetes, Docker, Terraform, OpenTelemetry, Grafana.

WORK EXPERIENCE

Hellofresh - Software Engineer

Oct 2022 - Present

- **Dynamic User Journey: (NextJS + Cloudflare worker)**
  - Led greenfield development of **server-side rendering (SSR)** pipeline on **Cloudflare Workers**, delivering personalized funnels with 200ms p95 latency and achieving +2.6% conversion uplift through iterative **A/B testing**
  - Built server-side segmentation layer enabling **CMS-driven content** targeting across customer cohorts, unblocking cross-segment experimentation and campaign optimization
  - Implemented Cloudflare **caching** strategy for SSR experiment redirection, ensuring consistent personalized experiences while maintaining edge performance

- **Golang Microservices:**
  - Built scalable Go microservice supporting 15+ global markets with **customer segmentation** and experiment allocation via **Statsig and Kafka event streaming**
  - Designed **hexagonal architecture** with config-driven rule engine, enabling marketing teams to launch campaigns in minutes vs. days without code deployments
  - Improved system **observability and testability**, enabling reliable **server-side experimentation**

and faster iteration cycles

- **AI-Powered Recipe Recommendation Agent:**

.

  - Engineered an **agentic RAG prototype** using **LangGraph** and **AWS Bedrock (Claude)** to validate personalized meal planning workflows, moving beyond simple QA to stateful multi-turn reasoning.
  - Designed a **hybrid retrieval pipeline** that balances efficiency and accuracy by combining **Vector Search** (Cosine Similarity for candidate generation) with **LLM-based constraint filtering** (for strict dietary safety).
  - Developed a **conversational evaluation interface** in Streamlit to test "human-in-the-loop" feedback (Accept/Retry), utilizing **Pydantic** for strict type validation and structured output parsing.

- **NodeJS BFF service & gRPC integration:**

  - **Engineered a high-performance Aggregation Layer (BFF)** using Node.js and gRPC, optimizing payload delivery for the frontend application.
  - **Unlocked real-time personalization** by moving logic upstream to the BFF, achieving a **54% reduction in latency (240ms P99)**.
  - Established a robust data pipeline connection, utilizing Kafka to publish high-volume user engagement signals to the downstream data lake for ML model training.

Mark2Win IT Solutions - Software Engineer June 2021 - Oct 2022

- **E-commerce Platform:**

  - Architected a **React/Redux SPA** with **JWT-secured Node.js/Express** backend, integrating **Stripe/PayPal** payments and reducing Time-to-Interactive by 20% via **code-splitting** and **lazy loading**.
  - Implemented full-stack observability using **OpenTelemetry** and **Grafana**, defining **SLIs** for latency and error rates with automated alerting to prevent performance regressions.

- **TechCube Learning Management System (LMS):**

  - Built a **React** dashboard with a **Redis caching layer**, reducing mean API latency by **60% (450ms → 180ms)** and minimizing redundant database queries.
  - Enhanced the **CI/CD pipeline** by enforcing **Jest/Cypress** testing gates (80% coverage), significantly improving release reliability and preventing production rollbacks.

EDUCATION

Bachelor of Science in Mathematics Sep 2010 - May 2015

The Pennsylvania State University, USA.