

Pang Tianyu

Backend / Full-stack Engineer · Golang · Distributed Systems

lightning007zz@gmail.com

SUMMARY

Backend / full-stack engineer with **6 years of software development experience**, including **3+ years developing core backend systems at DiDi Maps**. Primarily use Go / C++, with experience in microservice architecture, service governance, system refactoring, concurrency, and performance optimization; reduced **per-data-center container requirements by 50%** through core service refactoring while maintaining stable performance. As an independent developer, handle the full delivery lifecycle from requirements and architecture design to deployment and operations, and continue developing an **AI voice companion agent** involving real-time **ASR → LLM → TTS**, tool calling, and long-term memory.

EXPERIENCE

Independent Developer / Full-stack Engineer

Apr 2024 - Present

- **Chatbot | AI Voice Companion Agent (In Development)**: Built a **Go backend** and a real-time **ASR → LLM → TTS** voice pipeline on a Python voice service; implemented streaming LLM execution, turn cancellation and cleanup, plus **controlled tool calling and long-term memory**, supporting memory search/save/delete, both **Function Calling and structured planning**, with memory isolated by account and role.
- **Cross-border E-commerce**: Built Headless Shopify sites with **Next.js / React / Vue**, integrated commerce capabilities through the **Shopify API**, and worked on payment flows, page performance, and SEO.
- **Image Content Platform**: Developed the website and cloud infrastructure with **Amazon Aurora (PostgreSQL)** for business data, **Cloudflare Images / Workers** and **AWS EC2 / S3** for image management, edge services, application deployment, and object storage; implemented hotlink protection for large images, **Docker** containerization, and automated builds and deployments with **GitHub Actions**.
- **Study Abroad Offer Analytics**: Built a **Python**-based offer statistics system for New Channel Study Abroad, automating the previous Excel-based manual workflow and reducing related **labor by about 80%**.
- **Revit BIM Plugin**: Built a wall-module splitting and detailing plugin with **C# / Revit API**, automating a manual wall-splitting workflow and reducing per-project **manpower and processing time by about 50%**.

Backend Architecture Engineer

Jan 2021 - Mar 2024

DiDi · Maps, Point Architecture Team | Beijing, China

- Developed, maintained, and optimized architecture for core backend services covering pickup/drop-off points, recommended points, and place search, primarily using **Golang / C++**.
- Contributed to microservice reliability and disaster-recovery improvements, including service degradation, traffic switching, rate limiting, and emergency procedures for core service availability.
- Refactored parking-violation information and external API services with **Go / Gin**, using **Redis** caching, **SQL** data access, and **goroutines** for concurrent processing. Improved code structure and resource efficiency, reducing **container requirements per data center by 50%** while maintaining performance.
- Designed and built an independent point-tag microservice to centralize tag logic previously spread across services, reducing coupling and improving development efficiency; used **pprof** to analyze function call stacks and performance overhead during request processing.

Big Data Analytics Intern | Ping An One Wallet · Big Data Department | Shanghai, China

Aug 2018 - Nov 2018

- Read Spark SQL source code to understand its internals; used Java to implement API-calling functionality for an internal interview system.

EDUCATION

Carnegie Mellon University 2019 - 2020
M.S. in Electrical and Computer Engineering

St. Olaf College 2014 - 2018
B.A. in Mathematics and Computer Science

SKILLS

Languages	Golang, C/C++, Python, JavaScript/TypeScript, C#
Web	Gin, RESTful API, Next.js, React, Vue, Shopify API
Cloud	AWS EC2/S3, Aurora, Cloudflare Workers/Images, Docker, GitHub Actions CI/CD
Engineering	Microservices, API design, goroutines, service governance
Spoken	Mandarin (Native), English (Fluent), Japanese (Beginner)