

Chenghao Ye

Senior Software Engineer | Go | High-Scale Microservices & Backend Systems

+86 133 3606 1945 • yechenghao516@gmail.com • linkedin.com/in/chenghao-ye

Profile

Senior Software Engineer specialising in Go microservices and large-scale systems, with a **Master of Science in Information Technology** from Carnegie Mellon University.

Five years' experience **building and operating Go backend services** for Tencent Music's platform with **over 500 million monthly active users**, focusing on API design, data pipelines, internal multi-tenant architecture and observability. Proven track record improving latency, storage efficiency and production operability, including an internal segmentation platform **handling 1.9 billion queries per day**.

Professional Experience

Tencent Music Entertainment -- Commercial Advertising

Apr 2021 -- Mar 2026

Shenzhen, China | Promoted from Software Development Engineer I to II in Jan 2023 and to III in Jan 2025.

User Segmentation Platform

Solution Designer and Primary Developer

- Designed and primarily developed a shared internal segmentation platform in Go, Redis-compatible storage and Kafka, providing a unified API for targeting, entitlement and A/B tests and handling **1.9 billion queries/day** across **57 downstream services**.
- Replaced one-key-per-user-segment-relationship storage with compact per-user segment lists; the corresponding platform storage footprint fell from approximately **200 GB to 30 GB**. Built a rate-limited Kafka/Lua import path that loaded **30 million records in approximately 101 seconds, 7.2 times faster** than the Pipeline benchmark.
- Implemented BigCache with Maglev request affinity, achieving a **75% local-cache hit rate**; cache-related monitoring recorded a **1.76 ms average** and **9.90 ms P99**.

Promotion and Billing Services

Core Developer | Consumer-facing services processing over one million orders annually with transaction value exceeding RMB 100 million.

- Built an order-aggregation service in Go and MySQL that grouped **850,000** small orders by song and redistributed play counts, cutting downstream delivery tasks by **40% overall** and **91%** in one major campaign.
- Used Redis caching and moved deferrable order work to asynchronous processing, reducing average order latency from **210 ms** to **approximately 90 ms**; the share of campaign-page responses completed within 200 ms rose from **approximately 65% to 94%**.
- Was responsible for synchronising wallet transaction records during a wallet-unification migration covering **114,069 accounts**; in the first month, the unified flow processed **590,000 iOS top-ups** worth **RMB 17.1 million**, with a stable production transition.

Advertising and Event Processing

Core Contributor | Advertising platform processing **16.4 billion requests/day** across more than 17 media applications.

- Worked on a standalone Kafka event-enrichment service (20 topics, 288 partitions, 18 consumer groups), processing **approximately 3.5 million records/minute** service-wide and allowing enrichment workloads to scale independently from latency-sensitive reporting.
- Implemented a configurable reward-verification and distribution module integrating **10+ upstream and downstream systems**, reducing most new-media onboarding from weeks to days; an associated K-song experiment group recorded a **1.8% revenue uplift**.
- Redesigned monitoring for the event-enrichment and reward services, consolidating over **100,000 high-cardinality dimension values** into approximately **600 defined business scenarios** while preserving failure-scenario coverage and making alerts actionable.

Technical Skills

- Programming & Scripting:** Go (advanced); Java, Python, Bash & Shell Scripting (familiar)
- Backend & Data Technologies:** Redis, Kafka; MySQL, MongoDB, Elasticsearch; REST APIs and Protobuf-based RPC
- Observability & Engineering:** Production monitoring with Prometheus and Grafana; performance analysis, reliability reviews and incident response
- Systems Architecture:** Microservices, multi-tenant architecture, event-driven processing, horizontal scaling; multi-tier caching, consistent hashing, data consistency; idempotency, rate limiting, resilience and fault tolerance

Education

- Carnegie Mellon University** 2019 -- 2020
[Master of Science in Information Technology, Privacy Engineering](#) DISTINCTION (GPA 3.8)
Information Security and Privacy Policy, Distributed Systems, API Design and Implementation, Software Construction.
- The University of Edinburgh** 2017 -- 2019
[Bachelor of Science in Computer Science](#) FIRST CLASS HONOURS (GPA 4.0)
Internet of Things (IoT), Computer Security, Database Systems, Machine Learning & AI, Software System Design.

Publications

"Retrofitting Security and Privacy Measures to Smart Home Devices" First author, 6th IEEE International Conference on Internet of Things: Systems, Management and Security, 2019.