ERIC LIU

BACKEND SOFTWARE ENGINEER

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SUMMARY

Backend software engineer specializing in SaaS systems and cloud integrations. At ByteDance, drove end-to-end technical design and cross-team delivery of core ByteHouse backend services spanning multi-tenant account and identity management, first-party usage-based billing, AWS Marketplace and Volcano Engine integrations, and customer-facing observability. Earlier experience includes telco backend systems at Circles.Life and PCI DSS-compliant payment integrations for McDonald's across 20+ international markets.

SKILLS

Languages:	Go, Java, Python, JavaScript / Node.js
Backend:	Microservices, REST APIs, API gateways, multi-tenant SaaS, asynchronous workflows
Cloud & Infrastructure:	AWS (Marketplace, SNS/SQS, S3), Volcano Engine, Kubernetes
Data & Messaging:	MySQL, MongoDB, RabbitMQ
Identity & Access:	Account/user lifecycle, JWT session lifecycle, API-key lifecycle, gateway authentication, control-plane authorization
Billing & Payments:	Usage metering, Stripe, payment reconciliation, PCI DSS
Observability:	VictoriaMetrics, InfluxDB, Grafana, Prometheus/Alertmanager, AWS CloudWatch, Volcano Engine Cloud Monitor

EXPERIENCE

Intentional Career Break | Jan 2025 – Present

Took an intentional break from full-time work for personal and family commitments; resumed structured technical preparation and an active return to software engineering in 2026.

Software Engineer - ByteDance | Singapore | Jul 2020 - Dec 2024

- Led cross-team technical delivery for major initiatives from requirements and technical design through design reviews, Jira task decomposition, QA/release planning, migrations, and production support; represented the backend squad, coordinated work across teams, supported on-call and customer issue resolution, and ran knowledge-sharing sessions on new engineering standards.
- Took ownership of ByteHouse observability after the dedicated SRE team was reassigned and redesigned an internal-only telemetry stack into a tenant-aware customer capability; enhanced service metrics, defined customer-facing performance and lifecycle signals, exported telemetry to Volcano Engine Cloud Monitor and AWS CloudWatch, and built developer dashboards and alerts on the same data.
- Designed and built ByteHouse's production account and identity service in Go, covering multi-tenant onboarding, organization and user lifecycle, JWT sessions, API-key lifecycle, email verification, regional routing, gateway authentication, and control-plane authorization across backend services.
- Built AWS Marketplace subscription, provisioning, and metering flows using SNS/SQS; as ByteHouse expanded across regions, diagnosed a competing-consumer failure in the shared queue and redesigned event routing around region-specific queues. Implemented corresponding Volcano Engine integrations for prepaid/postpaid entitlements, metering, lifecycle webhooks, and API-gateway translation across three regions on each cloud.
- Architected first-party usage-based billing for direct SaaS customers: calculated compute and storage usage from telemetry, generated monthly tax invoices, integrated Stripe tokenization and idempotent payment collection/reconciliation, and automated dunning, suspension, and offboarding.
- Served as the sole backend engineer on an early ByteHouse commercialization effort that adapted ByteDance's internal OLAP platform for external customer deployment; built its account and authentication system from scratch and integrated session handling across existing Python Flask and Java/Zuul gateways.

Software Engineer - Circles.Life | Singapore | Jan 2019 - Jun 2020

- Developed Node.js microservices supporting MVNO customer onboarding, plan customization, account preferences, and internal customer-service workflows.
- Contributed to API gateway services and built RabbitMQ-based asynchronous integrations with external network systems supporting mobile, web, and internal applications.

Software Engineer - Sopra Steria | Singapore | Aug 2017 - Jan 2019

- Implemented PCI DSS-compliant credit-card and digital-wallet integrations with MiGS, CyberSource, Braintree, and WeChat Pay for McDonald's McDelivery across 20+ international markets.
- Developed Java backend services and REST APIs for mobile ordering and coordinated technical integrations with client and payment-service-provider teams.

EDUCATION

National University of Singapore

- Bachelor of Computing (Honours) in Computer Science | 2013 – 2017
- NUS Overseas Colleges (NOC) Silicon Valley Program | 2015 – 2016

LANGUAGES

Fluent English and Chinese