

Senior Software Engineer with 5 years building AI-powered, large-scale e-commerce search at Tokopedia and ByteDance (TikTok Shop) — working with ML-driven ranking and retrieval, personalization, query understanding (NLP) pipelines, and large-scale A/B experimentation. Served as the end-to-end technical owner of Search Result Page — the platform's largest GMV contributor — identifying business and technical pain points, defining scalable architecture and technical strategy, and driving cross-functional execution across Product, Backend, Frontend, QA, and external stakeholders. Core engineer of the TikTok Shop × Tokopedia search integration onto an AI-powered, personalized search stack, and architect of a full cloud-platform migration completed in under 2 months with zero downtime — search GMV +18.5%, infrastructure cost -55%, latency -78% — in Golang and Elasticsearch at 100M+ user scale.

Key Achievements

- **End-to-end technical owner of Tokopedia's Search Result Page (2024–2026):** point of contact for Search Result Page initiative, setting technical direction, coordinating every function to a single delivery plan, re-aligning stakeholders as priorities shifted, and staying accountable from design review through A/B rollout. Nearly every feature shipped on the page went through this role.
- **Core engineer of the TikTok Shop × Tokopedia search integration** (100M+ users): delivered the majority of the search API integration with TikTok Shop's AI-powered search engine and fully owned filters & sorting. Zero downtime under a 1-month deadline: search GMV +18.5%, order rate +13.2%, search UV +24.3%.
- **Architected the migration of Tokopedia's search stack to ByteDance's global platform** — completed in under a year with zero downtime — and split it into dedicated platform services built from scratch (search_provider, search_pack): infrastructure cost -55% (-\$87K/yr), latency 1,200ms → 850ms, release bug rate 50% → 0%, 100% availability from cutover.
- **Enabled TikTok ads monetization on Tokopedia search:** delivered every monetization integration with TikTok Ad Platform Solution — normal ads: ad GMV +6.7%, delivery +7.9%; pseudo ads (GMV Max): GMV +21.7%, delivery +49.1% — while reducing a projected +506ms latency regression to +185ms.
- **Owned search governance & compliance:** query blacklists, item-level intervention, and curated-query rewrites for adult content, policy violations, and app-store requirements — resolved a PO Google Play incident in <1 hour, preventing app removal; related complaints cut to zero.
- **Technical leadership beyond code:** authored 27 technical designs, performed 1,000+ code reviews across both companies as the team's quality gate, mentored junior engineers, interviewed backend-engineer candidates, and presented twice at Tokopedia's Architecture Review Board.

Work Experience

Senior Software Engineer
Jakarta, Indonesia

Bytedance

Jan 2024 - Present

Following ByteDance's acquisition of Tokopedia, entrusted as the technical owner of the Search Result Page (SRP): the single point of contact for all SRP initiatives — identifying pain points, defining technical direction, and aligning PM, Backend, Frontend, QA, and other teams' stakeholders on one delivery plan — while remaining accountable through the full cycle: design review, tech review, development, joint testing, QA, showcase, and A/B start to end — working AI-first in daily engineering with Trae and ByteDance's internal AI tooling.

- **Search engine unification:** integrated Tokopedia's search API with TikTok Shop's AI-powered search and ad engines — personalized ranking and retrieval — then expanded the integration across store cards, video, shop page, and desktop. Initial integration search GMV +18.5%, store-card GMV +4.5–6.6%, desktop search GMV/user +2.6%, precise store-name matching GMV/DAU +1.5%.
- **Platform re-architecture:** rebuilt the search API using ByteDance AI-powered internal platform solution (Kitex, ByteES, Byte, ByteRedis, dynamic config) and led the cutover plan for the GCP migration, completed in under 2 months with zero downtime — -350ms latency, -55% annual cost; then created the engine aggregator and ecommerce item mapper as dedicated services — bug rate 50% → 0% — saved 2 engineering days per engine/mapper feature.
- **Ads monetization:** led the search side of TikTok Ad Manager integration, enabling normal ads & pseudo ads (GMV Max) while keeping legacy Tokopedia Ad discoverable through the transition — normal ads GMV +6.7%, normal ad delivery +7.9%, pseudo ads GMV +21.7%, pseudo ad delivery +49.1%; saved 2–3 engineering days per ad feature.
- **Growth & campaign features:** shipped pop-up coupons (high-value-user test: search GMV +11.1%, AOV +10.9%), promotion labels & banner, co-funded voucher cards, and a dynamic campaign banner system (100+ banners incl. iPhone launch & payday events); 12.12 campaign contributed +\$56.7M GMV.
- **Latest product wins (2026):** led end-to-end delivery of Bonus Promotion on SRP (GMV/user +3.1%, main orders/user +5.7%, payment penetration +3.3%) and Instant & Same-Day delivery labels (order rate +1.1%, product clicks/user +0.6%) — both statistically significant A/B wins.

- **Experimentation:** designed and ran 12+ A/B experiments on ByteDance's experimentation platform — owning technical design, rollout, and experiment operation from start to end — partnering with Data Science on result readout and PM on ship decisions, across coupons, product cards, filters, and ranking.
- **Codebase modernization:** deprecated 100+ legacy feature flags, 25+ stale experiments, and 5+ dead dependencies; CPU −19%, memory −17%, disk −22% across a 20-host fleet with zero P0/P1 regressions.
- **Operational & team leadership:** resolved 100+ production on-call cases (internal + seller/user escalations), represented Search in 20+ cross-department standby sessions, and ran knowledge-sharing sessions on experimentation, API gateway, and event-streaming platforms for teams inside and outside Search.

Software Engineer
Jakarta, Indonesia

Tokopedia

Oct 2021 - Dec 2023

Backend engineer on the Search team at Tokopedia — Indonesia's largest online marketplace and one of its leading technology companies, serving 100M+ monthly active users and 10M+ merchants, and a pioneer of the country's digital-commerce transformation. Repeatedly trusted as PIC for cross-team programs (Go, Elasticsearch, GCP); all figures below are from formal performance-calibration records.

- **Tokopedia Product Card Reimagine:** owned and led the end-to-end redesign of Tokopedia's product card — centralized and standardized the product card contract across all Tokopedia pages, rebuilt the Search API, and established SRP as the reference implementation adopted by other teams. Result: 45.5% performance enhancement for Android's SRP, paid-order conversion +1.17%, add-to-cart +1.48%, clicks/session +3.05%, filter & sort usage +6.45%.
- **Elasticsearch cost & performance:** cut Elasticsearch spend 40% (−\$24K/month, 192 CPU cores freed) and reduced search latency from 370ms peak to a stable 100ms (2.5×); led the Elasticsearch 6→7 production migration and 4 cluster-scaling operations.
- **Zero-downtime legacy deprecation:** coordinated 14+ squads across 10 teams to deprecate 7 legacy endpoints and redirect 7 GraphQL queries — with migration trackers, war rooms, and mitigation plans.
- **Campaign & discovery experiments:** merchant promo aggregators for double-date campaigns (CTR +4%, paid-order conversion +5.06%), dropdown quick filters (conversion +35.8% in top category), and video-in-product-card (conversion +1.45–3.86% in key categories).
- **Engineering velocity & quality:** built a query-builder suite and keyword/mapping-understanding modules saving 2–5 story points per sprint each; cut Redis memory 11–21%; 696 code reviews in one year; presented 2× at the Architecture Review Board; mentored junior engineers.

Education

- **B.Sc. Computer Science,** Petra Christian University, Indonesia. **2017 - 2021**
Graduated with Honors. GPA: 3.54/4.00. Final-year project focused on blockchain development.

Awards & Recognition

- **Spot Award, Bytedance** **2025**
Recognized for rapidly delivering multiple business-critical initiatives in parallel, including user growth features, advertising integrations, and cross-functional projects, while maintaining end-to-end ownership and execution quality.

Technical Skills

- Languages: Go (primary), Python, JavaScript, SQL, PHP
- Data & Infrastructure: Elasticsearch, Redis, PostgreSQL, Kafka, NSQ, Google Cloud Platform, Byte Cloud, distributed microservices
- APIs & Protocols: REST, gRPC, Thrift, GraphQL
- Engineering & Leadership: Distributed systems, system and API design, A/B experimentation (design, rollout, monitoring, and analysis), technical design documents, cross-functional execution and project delivery, stakeholder alignment, knowledge sharing and mentoring, on-call and incident response