# ENGGAR RANU HARIAWAN

**Site Reliability Engineer | Senior Database Administrator**

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## PROFESSIONAL SUMMARY

Site Reliability Engineer and Senior Database Administrator with **11+ years of experience** in database platform engineering, large-scale migration architecture, and SRE governance. Tech Lead for a PostgreSQL-to-MySQL migration program spanning over 300 database services and 40TB+ of production data with zero data loss and under 5 minutes of cutover downtime, delivering ~$331K/month in infrastructure savings. Proven track record sustaining 99.9%+ uptime across 400+ production database clusters during peak-traffic events, with 100% PCI DSS compliance across multiple audit cycles. Recognized with the TikTok Shop Spot Award (Q4 2025) and a Tokopedia-ByteDance Global E-Commerce Spot Bonus (Q1 2024) for reliability and platform engineering impact.

## CORE SKILLS

**Databases:** PostgreSQL, MySQL, YugabyteDB, ByteNDB, Redis, Elasticsearch, AWS DynamoDB, AWS RDS, GCP CloudSQL

**Migration & Streaming:** Debezium, Kafka, Change Data Capture (CDC), Logical & Physical Replication, Postgres-BDR

**Automation & Languages:** Ansible, Terraform, Jenkins, Go, Python, Bash, SQL

**Infrastructure & Reliability:** Docker, Linux, GCP, AWS, ByteCloud, Backup & Disaster Recovery (WAL-G), PgBouncer, Query Optimization, Kubernetes, CloudNativePG

**Monitoring & Compliance:** Grafana, New Relic, Datadog, DPM SolarWinds (formerly VividCortex), Argos, Polaris, Triangle, PCI DSS

## PROFESSIONAL EXPERIENCE

### ByteDance - Tokopedia
### Site Reliability Engineer
***Apr 2025 – Aug 2026***
*Jakarta, Indonesia · On-site*

- Tech Lead for Tokopedia's PostgreSQL-to-MySQL (PSM) migration program following the ByteDance acquisition — co-designed migration architecture, automation ecosystem, and operational governance as part of a 2-person team
- Migrated over 300 database services (43 P0) and 40TB+ of production data with zero data loss and under 5 minutes of cutover downtime
- Built end-to-end automation for provisioning, CDC replication, validation, and rollback — cutting environment setup time from 5 days to 2 hours (98% faster) and overall migration speed by 70%
- Delivered ~$331K/month (~25%) in infrastructure cost savings via platform migration to ByteCloud; led the ByteNDB migration eliminating legacy RDS dependency (94.2% cost reduction, ~$5.2K/day savings)
- Led discovery and classification of Tokopedia's critical business paths, achieving 100% monitoring coverage of 9 L0 core links across Polaris and Grafana with 57 alarms — zero P2+ incidents in Q4 2025 and enabling shared 24/7 on-call coverage across regional SRE teams
- Standardized SRE monitoring across Polaris, Grafana, Argos, and Triangle, covering 70 Entrance PSM SLAs; investigated and resolved a production payment-database failover involving connection saturation and lock contention
- Authored alert-handling governance documents and SOPs (severity levels, ownership, escalation paths, follow-up actions) that were used to train an AI assistant for alert triage.
- Built a Python-based Risk Insight automation tool (Debezium connector monitoring, Lark bot integration, paginated API aggregation) and delivered a Global Risk Governance dashboard on the Triangle platform
- Recognized with the TikTok Shop Spot Award (STAR), Q4 2025, for improving incident visibility across Tokopedia's critical services

### Tokopedia
### Senior Database Administrator
***Dec 2018 – May 2025***
*Jakarta, Indonesia · Hybrid*

- Owned database platform reliability for 300+ production databases (PostgreSQL, MySQL, YugabyteDB) — HA/replication architecture, backup & restore (WAL-G), disaster recovery readiness, and query optimization
- Built Tokopedia's first PostgreSQL High Availability solution using Patroni, ETCD, Consul, and HAProxy (proof-of-concept through implementation) where none previously existed; initiated GoTo Plus as its first opco deployment
- Built Habound, an internal config-as-code tool for HAProxy, PgBouncer, Patroni, and ETCD, with a full audit trail of every change (who changed it, why, and who approved it); integrated with Terraform, Jenkins, and Ansible to provision servers and apply configuration automatically.

- Led PostgreSQL 12–14 and Ubuntu 18–22 upgrades for critical services — 30% faster administrative operations, $11.7K/month savings, under 2 minutes of downtime
- Delivered 100% PCI DSS compliance across multiple audit cycles, including an MD5-to-SHA256 encryption proof of concept for PCI DSS v4.0; built automation reducing audit-activity workload by 70%
- Led large-scale migrations (Aliyun-to-GCP, YugabyteDB-to-PostgreSQL, ByteCloud pilot) — improved service latency from 500–800ms to 2–10ms
- Sustained 99.9%+ uptime during mega sales campaigns (11.11, 12.12, Ramadhan) handling 2–4x normal traffic; supported an all-time-high $56.7M GMV on 12.12
- Led the Database Observability project in ByteCloud with the DevOps observability team; mentored junior engineers across the DBE and DBP teams and helped bring Tokopedia's DB practices into the GTL team
- Recognized with the Tokopedia-ByteDance-Global E-Commerce 2024 Q1 Spot Bonus for PostgreSQL HA initiatives and audit automation

**Digiasia Bios**
**Core Engineer**
***Feb 2018 – Dec 2018***
*Jakarta, Indonesia · On-site*

- Designed and maintained backend infrastructure supporting fintech services
- Developed automation and database solutions for internal platforms

**Witami Tunai Mandiri (Truemoney)**
**Backend Developer / Financial Reporting & Database Engineer**
***Nov 2015 – Jan 2018***
*Jakarta, Indonesia*

- Built financial reporting data pipelines and an enterprise data warehouse (Python, Pandas); implemented bi-directional PostgreSQL replication with Postgres-BDR
- Developed internal APIs with Python-Flask and supported financial fraud investigations through data analysis

**CNAIndo Teknologi**
**Full Stack Developer**
***Oct 2014 – Nov 2015***
*Jakarta, Indonesia*

- Developed enterprise software for securities companies, including a brokerage office system for NH Korindo Securities and the BEST online trading platform for BCA Sekuritas (Oracle, Java, Python, PHP, MySQL)

## AWARDS & RECOGNITION

**TikTok Shop Spot Award (STAR) — Q4 2025, ByteDance**

- Recognized for leading discovery and classification of Tokopedia's critical business paths after the PSM migration — achieved 100% L0 core-link monitoring coverage (9 links, 57 alarms) and zero P2+ incidents in Q4 2025

**Tokopedia-ByteDance-Global E-Commerce 2024 Q1 Spot Bonus**

- Recognized for pioneering PostgreSQL High Availability (HAProxy) at Tokopedia, building audit automation that cut workload by 70%, and initiating GoTo Plus as the first OpCo deployment

## EDUCATION

**Universitas Gunadarma — Bekasi, Indonesia** 2010 – 2014
*Bachelor of Engineering, Informatics Engineering*
*• Laboratory Assistant at Informatics Engineering and Computer Development Division*

## PERSONAL PROJECT

• Built Financial Command Center, an AI-powered personal finance app (TypeScript, Next.js, MySQL on TiDB Cloud, OpenRouter LLM API) that ingests transactions from chat, Telegram, Gmail, and CSV, and combines rule-based anomaly detection with LLM recommendations.

## CERTIFICATIONS

- GCP: Complete Google Data Engineer and Cloud Architect Guide — Udemy, Jul 2025
- SQL (Advanced) Certificate — HackerRank, Jul 2025
- SQL (Intermediate) Certificate — HackerRank, Jul 2025