

PARITOSH TRIPATHI

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Summary

Backend engineer with 4 years building **microservices**, **distributed systems**, and **event-driven architectures** in **Python** and **Golang**. I Design and ship solid backend system end-to-end independently, from technical design and ADRs through production, scaling, and observability.

Experience

Software Engineer II

June 2026 – Present

Sharpsell

- Architected a high-throughput **ClickHouse & dbt ELT platform** across **100+ tenants**, replacing legacy Python ETLs to slash nightly runtimes from **5 hours to 15 minutes (20× speedup)** and dropping analytical query latency by **15+ seconds** down to **1–2 seconds**.
- Decommissioned heavy **db.m7g.8xlarge RDS OLAP** instances by provisioning **ClickHouse on AWS ECS** via AWS CDK with EC2 capacity providers, cutting database costs by **85% (~\$25,000/year)** and shrinking storage footprint by **75%** (1 TB to ~200 GB) via columnar compression.
- Architected a zero-downtime **Postgres-to-ClickHouse CDC pipeline** (PeerDB on AWS ECS Fargate) across 4 microservices, replacing CPU autoscaling with step-scaling driven by **custom CloudWatch metrics** to maintain replication-slot lag under **1 GB** across multi-tenant mirrors.
- Engineered an idempotent **upsert migration framework** with a custom Python query translation engine, programmatically rewriting legacy SQL to ClickHouse SQL to execute seamless cutovers for **100+ Superset client dashboards**.
- Developed custom **Model Context Protocol (MCP) servers** for Apache Superset and ClickHouse, accelerating agentic AI workflows for automated SQL translation, live query execution, and rapid system debugging.

Software Engineer II

April 2025 - June 2026

Parspec

- Designed and Implemented **Golang saga-based inventory ingestion service** that keeps DynamoDB and OpenSearch consistent via compensating rollback, using DynamoDB conditional-write distributed locks to serialize **3.9M+ concurrent writes** across 7,800+ manufacturers at **0.3 ms avg latency and p99 under 5 ms**
- Built **Hermes**, a **Python** FastAPI control-plane on AWS ECS Fargate, ALB host-header routing, CodeBuild, and Route53 that provisions per-branch ephemeral environments; turned multi-hour manual setup into a self-service API, driving **7× growth in active developers**
- Owned and developed the **public application API**: designed Google AIP-compliant batch endpoints and the v2 redesign over **PostgreSQL, Aurora, and OpenSearch**, serving **100K+ items per hour** at sub-100ms p99
- Designed **ERP financial-workflow integrations** — credits & returns, goods receipt, and delivery tickets — over **Workato** webhooks on a byErpId lookup pattern, with automatic partial-quantity line splitting across SAP, JD Edwards, and Eclipse
- Led **Product Finder 2.0**: built a config-driven weighted soft-ranking engine for **+23% accuracy**; parallelized OpenSearch fetches with **Golang** goroutines to cut latency from **10 ms to 2 ms**; emitted Mixpanel metrics at each ranking step for product visibility.
- Designed **Nexus** and **Kronos**, the platform's async-task and centralized-cron services on SQS, ECS, and WebSocket with DLQ-backed retries and queue-depth autoscaling.

Software Engineer I

Aug 2022 - Dec 2024

Anakin

- Developed a config-driven **Generic Compiler Service** on **Python** FastAPI transforming unstructured data into structured datasets at **100 GB per day**, with dual-queue SQS, DLQ, and multi-sink writes to MongoDB, BigQuery, and S3 which cut new-team onboarding from **3 days to 4 hours**.
- Designed an event-driven microservice architecture handling **150M+ events per month** at 99.9% uptime, using async consumers and backpressure to absorb **50K-events-per-minute peaks**; several teams reused the pattern to speed up development.
- Executed an **Android device-orchestration platform** in **Python** with scheduling across on-prem and cloud device pools, Frida runtime injection, and lifecycle tracking; ran 100+ connected devices across concurrent automation sessions.
- Developed reusable microservice templates in **Python and Golang adopted by 6 teams**, compressing feature dev from 2 days to 3 hours; resolved 50+ production incidents and cut infra cost \$3K per month using **S3 Glacier and CloudWatch Logs**.
- Built **BigQuery** and Looker Studio analytics with Grafana monitoring on Kubernetes and automated Slack alerting, cutting reprocessing overhead **40%** and on-call escalations 30%
- Engineer of the Quarter, Q3 2024** — for backend throughput gains, production-incident resolution, and mentoring junior engineers

Projects

- **PaidPilot** built a dual-provider web-search assistant with live citation grounding, serving 100+ users, using **Cloudflare** AI workers – *React, FastAPI, LLaMA 70B, RAG*.
- **Vidhi** built a domain RAG assistant for Indian law with a citation-regex hallucination guard, streaming the first token in under 2 sec, using **Cloudflare** AI worker *React, FastAPI, LLaMA 70B, SSE*.

Education

Bennett University

B.Tech in Computer Science, Specialization in Data Science · CGPA: 8.0/10

Skills

Languages: Python, Golang, Java, SQL

Backend: Django/DRF, FastAPI, REST, gRPC, OpenAPI; pytest, TDD

Data: PostgreSQL, MySQL/Aurora, DynamoDB, MongoDB, OpenSearch, Redis, BigQuery, Clickhouse

Distributed Systems: sagas, distributed locking, event-driven design, idempotency, backpressure, DLQ/retry

Cloud & DevOps: AWS (ECS Fargate, Lambda, SQS, DynamoDB, Aurora, Route53, ALB), Docker, Kubernetes, Terraform, GitHub Actions

Developer Tools: Claude Code, Cursor, Codex, MCP