

Darpan Kattel

Software Engineer

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Kathmandu, Nepal

SUMMARY

Backend engineer with 4+ years building secure, high-availability systems in Python, Django/DRF and AWS serverless. Re-architected a core payroll platform from synchronous to event-driven, scaling it 10x, and cut build and deploy cycles from 45 minutes to under 30. Strong in distributed systems, DynamoDB data modeling, API design and CI/CD.

SKILLS

Languages	Python, JavaScript/TypeScript, SQL, C/C++
Backend	Django, Django REST Framework, GeoDjango, FastAPI, REST APIs, WebSockets, event-driven architecture, MCP servers
AWS	Lambda, Step Functions, DynamoDB (+ Streams), API Gateway, SQS, EventBridge, S3, EC2, RDS, IoT Core, Timestream, Cognito
Data	PostgreSQL, PostGIS, MySQL, schema design, query optimization
Tooling	Docker, GitHub Actions, CI/CD, NGINX, Gunicorn, Git, uv, Ruff, Husky, SonarQube, pytest

EXPERIENCE

Software Engineer I, Backend — Niural AI

Jan 2026 – Present

- Re-architected the core payroll engine from a synchronous legacy flow into a fully asynchronous, state-machine-driven pipeline, raising supported scale from 200 to 2,000+ employees per run.
- Diagnosed a DynamoDB GSI eventual-consistency race returning inconsistent payroll data under load; shipped validation guards as the immediate fix and drove the async re-architecture as the permanent one.
- Reduced build time 45 → 30 minutes by merging duplicate Lambdas, deleting unused resources and moving common code into shared layers; trimmed ~7 minutes more by swapping pyenv/pipenv for uv, caching packages across builds and committing lockfiles for 9+ functions.
- Built event-driven benefits-enrollment integrations with multiple third-party providers — webhooks, queued workers, status transitions, integration logs and cron sync fallbacks — and proposed the end-user changelog that made enrollment data changes transparent.
- Shipped MCP servers over the payroll system so client-side AI agents could answer payroll questions from live data.
- Implemented a DynamoDB Streams consumer propagating eligible record changes to 401(k) profile sync, plus per-entity feature flags giving admins control over every cron action.
- Owned integrations end to end — scoped requirements with product and design, defined frontend and backend contracts, and coordinated with external partner teams across time zones.
- Raised legacy code quality: backfilled unit tests on financial calculations to unblock refactors, versioned APIs by user type, and added Husky + Ruff pre-commit gates with SonarQube analysis.

Backend Developer — TechTrain Pvt. Ltd., Lalitpur

Jul 2022 – Jun 2025

- Led backend delivery of large-scale GIS and data platforms for (semi-)government agencies — Recent Air, TDF GIS, KVDA GIS Portal and the MoCIT Frequency Management System.
- Designed end-to-end backend architectures in Django, DRF, GeoDjango and PostgreSQL/PostGIS, and defined REST API contracts covering versioning, auth, rate limiting and validation for React and Next.js clients.
- Improved API performance ~30% through query optimization and caching, and made spatial queries nearly 2x faster via indexing, partitioning and query rewrites — at >99.9% uptime on NGINX/Gunicorn with GitHub Actions CI/CD.
- Built a real-time ingestion pipeline on AWS IoT Core with >99.9% message delivery and millisecond read latency on recent timeseries via optimized Timestream schema design.
- Enforced security across deployments — HTTPS, IAM roles, CORS/CSRF protection, managed secrets — on AWS and Nepal's GIDC infrastructure.

EDUCATION

B.E. Computer Engineering

2021 – 2025

IOE, Pulchowk Campus

CERTIFICATIONS & AWARDS

AWS Certified Solutions Architect – Associate

2025

ACES TechFest 4.0 Hackathon — 1st Place