Manoj Chapagain

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SENIOR SOFTWARE ENGINEER

Software Engineer with 8+ years of experience designing and scaling distributed systems that power high-impact products. Known for leading complex projects from concept to production and consistently delivering solutions that enhance reliability, performance, and experience at scale.

WORK EXPERIENCE

Software Engineer — Mechatronic, Canada — *Feb. 2024 – Present*
- Owned full lifecycle of projects from code to production-grade, leveraging docker, kubernetes, automated scripts and ci pipelines
- Built firmware module for resource-constrained IoT devices and responsive web interface, enabling real-time device management at scale
- Fined-tuned small models (gpt-2, qwen3); Designed, and deployed AI agents and automation workflows with LangGraph, OpenAI api

Backend Developer — Microsec, Singapore — *May. 2022 – Apr. 2023*
- Engineered PKI security protocols from concept to deployment on IoT/OT devices, using Python Cryptography library for certificate provisioning, encrypted messaging, and integrity
- Architected microservices from design to high-availability clusters, deploying docker + kubernetes across multi-node setups with high-availability and fast auto-scaling

Sr. Software Engineer — Codavatar, Kathmandu, Nepal — *Jan. 2021 – Mar. 2022*
- Led backend team from roadmap to on-time delivery of production services, hitting every milestone under tight deadlines
- Optimized Krispcall (cloud telephony) from core features to 50 k concurrent calls, integrating webRTC, twilio, fastAPI, and redis
- Tidied up codebase with clean architecture; applying domain-driven design to cut technical debt and improve API performance

Full Stack Developer — Khalti Digital Wallet, Lalitpur, Nepal — *Nov. 2017 – Dec. 2020*
- Built fintech frontend from zero to 100 k users in 12 months, scaling fontend (React, Mobx) for early-stage startup
- Engineered PCI-compliant payment gateway and digital wallet from backend to live integrations, using Python/django, React, and aws (lambda, RDS, s3) with 50+ bank/telecom APIs

Jr. Full-Stack Developer — Grepsr, Kathmandu, Nepal — *Dec. 2016 – Nov. 2017*
- Developed web-scraping pipelines and internal projects; using microservices, gRPC, Docker, and Kubernetes

EDUCATION

Project Managemnt - IT — Seneca College, Toronto, Canada — *May. 2023 – Dec. 2023*

Bachelor's degree in Computer Engineering —
Tribhuvan University, IOE Pulchowk Campus, Lalitpur, Nepal — *Nov. 2012 – Sep. 2016*

PUBLICATIONS

Effects of Auto-Tuning and Pitch Normalization on Query by Humming —
International Journal of Advanced engineering, June 2020 — *Source*

SKILLS

Languages: Python, JavaScript/TypeScript, SQL, Shell (bash/zsh)
Frameworks & Libraries: FastAPI, Django/DRF, Flask, React, Node.js, gRPC, GraphQL (Ariadne/Graphene), SQLAlchemy, Redis, RabbitMQ, LangGraph, Pinecone, scikit-learn, Pandas, Selenium
DevOps & Cloud: Kubernetes (K8s), Docker, Terraform, AWS (EC2, S3, RDS, Lambda), CI/CD (GitHub Actions, GitLab CI), Ansible, Nginx, Linux
Testing & Docs: Pytest, Cypress, Postman, Swagger/OpenAPI, Ruff, Flake8, MkDocs
Others: Jira, Asana, Qase