

# Prakash Parajuli

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## Summary

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Sr. Software Engineer focused on payment infrastructure and financial data systems. Background in building CRMs, commission engines, and ETL pipelines for merchant services. MS in Computer Science from USC.

## Technical Skills

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**Languages:** TypeScript, Python, JavaScript, Java, Golang

**Backend:** NestJS, Spring Boot, Node.js, Express, TypeORM, BullMQ

**Frontend:** Angular, React, Redux, SCSS, Bootstrap, Angular Material

**Data & ETL:** Apache Airflow, PySpark, Apache Kafka, Pandas

**Databases:** SQL, PostgreSQL, MongoDB, MySQL, Redis

**Cloud & DevOps:** AWS (EC2, Lambda, S3, SNS), Azure, Docker, Kubernetes, Terraform, GitHub Actions

**Testing:** Jest, Testcontainers, JUnit, Karma, Jasmine

## Professional Experience

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### Sr. Software Engineer

September 2023 – Present

VizyPay LLC

Waukee, Iowa

- Designed and built a full-stack fintech CRM using NestJS, Angular, PostgreSQL, and MongoDB, supporting thousands of agents and internal teams across merchant onboarding, underwriting, commissions, payroll, and multi-tier hierarchy management.
- Built an automated residuals and commission engine processing millions of merchant transaction records per cycle, replacing a manual monthly process and cutting turnaround from days to under 20 minutes using BullMQ queues, event-driven listeners, and PostgreSQL transaction isolation.
- Diagnosed and fixed production deadlocks in concurrent financial workflows by introducing PostgreSQL advisory locks, retry orchestration, and idempotency checks, preventing data corruption in bonus and clawback processing.
- Developed and tuned 100+ Apache Airflow DAGs to process Fiserv merchant payment data including transactions, authorizations, batches, and tax reporting, reducing query time by 30% and CPU usage by 70%.
- Designed a granular IAM system with ability-based authorization, OAuth2 SSO via Azure AD, JWT auth, and MongoDB-backed policy documents, enforcing role-based access control across multiple organizational tiers and functional roles.
- Integrated Worth and AccessOne underwriting APIs with webhook-driven sync, turning KYB/KYC merchant review from a multi-hour manual process into an automated workflow with real-time status tracking.
- Set up integration testing with Testcontainers (PostgreSQL, MongoDB, Redis) and GitHub Actions CI/CD, implemented PII redaction for sensitive fields (SSN, TIN, bank accounts), and added structured audit logging for compliance across all write operations.
- Led design reviews and technical planning in a team of 10+ developers, defined PR review standards and contribution guidelines, and onboarded new engineers on backend architecture and domain context.
- **Stack:** NestJS, Angular 19, TypeORM, PostgreSQL, MongoDB, BullMQ, Redis, Apache Airflow, PySpark, Docker, Azure

### Software Engineer

August 2018 – June 2021

Karyathalo IT & Web Solutions

Kathmandu, Nepal

- Developed and maintained REST APIs across multiple microservices using Java, Spring Boot, NestJS, and MySQL, serving both mobile and web clients across several concurrent projects.

- Introduced Apache Kafka for event streaming between microservices, replacing polling-based sync and cutting inter-service latency for order and notification workflows.
- Rewrote order search queries and refactored data access layer, improving response times by 10x for multi-criteria lookups by adding composite indexes and fixing N+1 query patterns.
- Drove adoption of test-driven development using JUnit and Jest, containerized services with Docker, and improved CI/CD on Azure Pipelines, leading to a 20% drop in post-release defects.
- **Stack:** Java, Spring Boot, NestJS, Node.js, React, Angular, Docker, Azure, Apache Kafka, MySQL

## Software Engineer

December 2016 – June 2018

*Brand Builder Pvt. Ltd.*

*Pokhara, Nepal*

- Developed core modules for an in-house Real Estate CRM including property listings, agent assignment, lead tracking, and automated follow-up workflows, used daily by the sales team to manage active deals.
- Built RESTful APIs in Node.js and Python with authentication, input validation, and rate limiting, and designed MySQL and MongoDB schemas for the property and lead data model serving both web and mobile clients.
- Set up AWS infrastructure (EC2, S3, VPC) with separate staging and production environments, cutting the team's release cycle from ad-hoc manual deploys to a repeatable pipeline.
- **Stack:** Node.js, Angular, React, Python, AWS, MySQL, MongoDB

## Education

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### University of Southern California

*Master of Science in Computer Science, GPA: 3.82/4.0*

August 2021 – May 2023

*Los Angeles, California*

### Advanced College of Engineering and Management

*Bachelor of Engineering in Computer Engineering, GPA: 4.0/4.0*

September 2014 – September 2018

*Lalitpur, Nepal*

## Certifications

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AWS Certified Developer – Associate | Certified Kubernetes Application Developer (CKAD) | Certified Scrum Master (CSM) | HashiCorp Terraform Associate (003)

## Projects

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### Distributed Microservices Architecture | *Spring Boot, Kubernetes, GCP, Prometheus*

- Designed a multi-service system with Spring Boot, deployed on GCP Kubernetes. Added Jaeger for distributed tracing, Resilience4j for circuit-breaking and retries, Prometheus for metrics, and GitHub Actions for CI/CD.

### Clinical NER with Transformer Models | *Python, BERT, RoBERTa, DeBERTa, HuggingFace*

- Fine-tuned BERT, RoBERTa, and DeBERTa for named entity recognition on clinical patient notes, achieving an F1 score of 88.21 with DeBERTa-Large. Handled custom tokenization and data cleaning for medical text.

### IoT Vehicle Monitoring System | *Android, GPS, IoT, Haversine Algorithm*

- Led a team building a GPS-based vehicle tracking system for the Nepal Government, with an Android app for real-time monitoring and tax notifications. Used the Haversine formula for distance calculation.

## Achievements

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**Dean's Merit Scholarship, USC** – Awarded for academic performance during Master's program.

**Academic Scholarships** – Received multiple scholarships for academic excellence during undergraduate studies.

**Cyber Security Training** – Delivered training to Nepal Police Department in coordination with Prof. Subarna Shakya.

**Published Research** – *Vehicle Monitoring System Using Internet of Things.*