Pradeep Kumar G,

Senior Software Engineer specializing in Java, Spring Boot & Azure with exposure to AI/ML research and open source.
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WORK EXPERIENCE

Senior Software Engineer, MarTech | Optum (UnitedHealth Group)　　　　　　　**Jun 2024 – Current**

- Led launch of 9 campaigns to outreach 1.5+ million members. Built event driven data pipelines based on serverless architecture, oversaw releases, conducted code reviews and supported via docs, KTs etc.
- Implemented DLQ-based retry pattern across 15+ microservices with exponential backoff, and published non-retryable failures to dead letter queue for further RCA and reconciliation.
- Spearheaded 5-member cross-functional task force, to resolve critical Kafka issue within 6 hours, preserving business go-live date and ensuring 24-hour SLA compliance.
- Owner of inhouse Java library, abstracting API complexity via Façade pattern, centralized Azure / Kafka configs, improved developer productivity, and eliminated 6000+ lines of code.
- Scaled high-traffic API server to handle 100K+ RPM by tuning Tomcat configs and, introducing multi-threading and async request processing using message queues (Kafka).
- Developed a secure, cron-based OAuth token generator serving 15+ apps, retrieved credentials from Azure Key Vault and cached tokens in Redis for microsecond-latency access.
- Collaborated with ops, business, and audit team leads to identify key failure points and built tools for daily monitoring of exceptions, proactive alerting and enabling 100% observability and issue resolution.
- Mentored and paired with 3 engineers across multiple scrum teams, enabling them to ramp up quickly and contribute independently.

Software Engineer, Consumer Engagement Platform | Optum (UnitedHealth Group)　　**Jun 2022 – Jun 2024**

- Led an agile scrum team through lead and senior developer transitions, taking ownership of 20+ microservices and ensuring smooth project delivery without any delays or impact to quality.
- Rearchitected ingestion pipeline, switching from REST to Kafka pub-sub, improving throughput by 300% and reducing ingestion time for 2.5 Billion+ records by 95%.
- Automated GitHub vulnerability and secrets management using Bash scripts, saving 540+ developer hours while ensuring enterprise security compliance.
- Optimized 1B+ record data migration, by replacing SQL MERGE with chained INSERTs, achieving a 90% reduction in runtime.

Junior Machine Learning Engineer | Omdena　　　　　　　　　　　　　　　　　**Jul 2021 – Sep 2021**

- Participated in a collaborative project, exploring exercise recommendation models for Nestre's Android app; supported coordination, maintained team roster, and contributed to discussions during research syncs.

Research Intern | Indian Institute of Technology, Patna　　　　　　　　　　　　**May 2021 – Aug 2021**

- Implemented and fine-tuned 1D-Convolutional Neural Networks (1D-CNNs) using Python, TensorFlow, MATLAB, achieving **99%** accuracy in detecting ADHD from EEG signals.

AWARDS

MarTech Idea Challenge Winner – AI Test Automation & Deployment Validation　　　　**Nov 2024**

- Secured funding and designed AI-based solution to generate 3x more test cases, and automate deployment validation saving 4+ hours of manual effort each release.
- Evolved into an internal product, now adopted across multiple teams to improve testing and release efficiency.

PUBLICATIONS

- Mandal, S., Kumar, G. P., Saini, M., Satija, U., & Kumar, Y. (2023). A unified deep learning framework for smartphone-enabled ADHD detection. *IEEE Transactions on Instrumentation and Measurement*, *73*, 1-11.

PROJECTS | OPEN SOURCE

Creator, Godis | github.com/deepPublicGit/godis

- Implementing core Redis features in Go, including support for the Redis Serialization Protocol (RESP).

Contributor, Kestra | github.com/kestra-io/

- Designed and implemented pebble functions to allow debugging of file-based resources in Kestra workflows.

SKILLS

Languages: Java, Go, Python, Bash
Databases: SQL (PostgreSQL, SQL Server), NoSQL (Cosmos DB, Redis), KQL (Kusto)
Frameworks: Spring Boot, JMeter, JUnit, Mockito, Hibernate / JPA, Avro, Maven, Adobe Experience Platform
Cloud & Infra: Microsoft Azure, Apache Kafka, Kubernetes, Docker, Jenkins, Git (GitHub), Linux, Postman

EDUCATION

B.Tech in Electronics and Communications Engineering | Shiv Nadar University, Delhi NCR, IN　　**May 2022**
Minor in Computer Science Engineering | Shiv Nadar University, Delhi NCR, IN　　　　　　　**May 2022**