Pradeep Kumar G,

Senior Software Engineer specializing in Java, Spring Boot & Azure with exposure to AI/ML research and open source.
Chennai, India | +91 86677 55070 | Email | LinkedIn | GitHub | Website

WORK EXPERIENCE

Optum (UnitedHealth Group) — Chennai, India

Senior Software Engineer, MarTech Engineering — **Jun 2024 – Current**

- Built event-driven data pipelines using serverless and Kubernetes managed services for 9 outreach campaigns, reaching 1.5M+ members.
- Created reusable Java annotation abstracting DLQ-based retry pattern, enabling teams to add resilient event handling across 15 microservices without writing custom Kafka listeners.
- Diagnosed and resolved critical Kafka pipeline failure in 6 hours, preventing business' go-live delay and maintaining 24-hour SLA.
- Built a Java library centralizing API and Kafka configurations using Facade and Singleton patterns, eliminating over 6000 lines of boilerplate 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.
- Integrated Azure Application Insights across 15 services, for logging and created queries for real-time exception tracking; published custom metadata to audit teams for reconciliation and error tracking.
- Mentored 3 engineers through codebase walkthrough, release processes, and best practices, enabling them to deploy features independently within 2 weeks.

Software Engineer, Consumer Engagement Platform — **Jun 2022 – Jun 2024**

- Led agile scrum team through senior developer transitions, owning 10 microservices while maintaining sprint velocity and delivering with zero production incidents.
- Rearchitected ingestion pipeline, switching from REST to Kafka consumer-producer, improving throughput by 300% and reducing ingestion time for 2.5 billion records by 95%.
- Automated GitHub vulnerability and secrets management using shell scripts, saving 540 developer hours while ensuring enterprise security compliance.
- Proficient at SQL, including temporal tables, query optimizations, stored procedure development, indexing and partitioning strategies on tables containing 1B+ rows and 1TB+ datasets.

Indian Institute of Technology, Patna — Remote, India

Research Intern — **May 2021 – Aug 2021**

- Implemented and fine-tuned 1D-Convolutional Neural Networks (1D-CNNs) using Python/TensorFlow with 99.02% accuracy on the publicly available DS1 dataset (60-second segments) with 10-fold cross-validation.

AWARDS

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

- Secured budget to implement solution to generate 3x more test cases using LLMs and automate deployment validation, saving 4+ hours of manual effort each release.

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/godis

- Built Redis server features in Go, implementing RESP protocol and epoll event handling to achieve sub-millisecond data retrieval latency.

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 (GoLang), Python, Bash
Databases: PostgreSQL, SQL Server, NoSQL (Cosmos DB, Redis), KQL
Backend / Data: Apache Kafka, Spring Boot, JUnit, Mockito, Hibernate / JPA, Avro, Linux
Cloud & CI/CD: Microsoft Azure, Kubernetes, Docker, GitHub Actions, Azure DevOps, Jenkins
Tools: Git, JMeter, Postman, Swagger, Maven, Splunk

EDUCATION

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