Prem Kumar

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Jodhpur, India

Summary

New Grad Backend Engineer specializing in **high-performance distributed systems** and **event-driven architecture**. **Proven track record** of designing and optimizing **low-latency platforms**, delivering **35-50% improvements** in throughput and reliability. Core expertise in **Python, Kafka, and cloud-native technologies** with experience in **trading systems** and **real-time data processing**.

Technical Skills

- **Languages:** Python, C++, Java, TypeScript/Node.js, Go, SQL
- **Backend Technologies:** Flask, FastAPI, Kafka, Redis, REST APIs, WebSockets
- **Infrastructure & DevOps:** Docker, Kubernetes, AWS, GitHub Actions, Linux, CI/CD

Experience

- **Citadel Securities** — *New York, USA*
  Software Engineering Intern — May 2025 - July 2025
  - Architected Python-based trading simulator that processed 100K+ trades/second with under 5ms latency for production-grade strategy validation.
  - Optimized Kafka and Redis data streams, reducing data ingestion lag by 35% and ensuring high-reliability real-time streaming for trading pipelines.
  - Automated CI/CD pipelines using Docker and GitHub Actions, improving deployment reliability by 40% and eliminating manual deployment errors.
  - Implemented graceful degradation, retry mechanisms, and health checks that maintained system stability during peak load stress tests.
  - Designed comprehensive logging and metrics system that improved incident response time by providing real-time visibility into system performance.

Projects

- **Smart Grading App (IITJ Course Project)** — Python, TypeScript, React, AWS
  Full-stack grading platform — GitHub | Live Demo
  - Automated manual grading workflows via secure REST APIs, reducing professor grading time by 50% while maintaining 99% accuracy for 150+ students.
  - Implemented comprehensive metrics and logging that provided full observability into grading workflows and reduced error resolution time by 60%.
- **Packet Analyzer Dashboard** — Python, Dash, Networking
  Real-time network monitoring system — GitHub
  - Built a real-time packet processing dashboard for network security, handling 500 packets/second with 92% accuracy for traffic analysis and monitoring.
  - Reduced false positives by 20% and increased throughput by 25% by refining detection algorithms and implementing concurrent processing.
  - Achieved sub-100ms response time for security alerts by developing custom detection algorithms for identifying network anomalies.

Education

- **Indian Institute of Technology Jodhpur** — *Jodhpur, India*
  B.Tech in Artificial Intelligence and Data Science • GPA: 8.52/10 — 2022 - 2026 (Expected)
  - Relevant Coursework: Data Structures & Algorithms, Operating Systems, Distributed Systems, Database Management, Machine Learning
- **Kendriya Vidyalaya Mokamaghat** — *Class XII: 92.4%*
  CBSE Board — 2022
- **Kendriya Vidyalaya Mokamaghat** — *Class X: 91.6%*
  CBSE Board — 2020

Achievements

- **JEE Advanced AIR 3003 (Top 1.2%)** — *Among 250,000 applicants*
- **Raiya Purushkar Award** — *National Scouts & Guides Excellence Award*
- **National-level Football Player** — *Kendriya Vidyalaya Sangathan*

Leadership & Positions of Responsibility

- **Web Development Head, Sandstone 5.0** — *2025*
- **Proite Head, Ignus 25'** — *2025*
- **Informal's Head, Prometeo'25** — *2024*
- **Assistant Head - Pronite, Ignus'24** — *2024*