

KAPIL SHARMA

SENIOR / LEAD SOFTWARE ENGINEER | BACKEND | DISTRIBUTED SYSTEMS | CLOUD | GENAI

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PROFESSIONAL SUMMARY

Senior/Lead Software Engineer with 10 years of overall experience, including 7+ years of software engineering experience building and operating scalable cloud-native backend systems. Strong expertise in Node.js, TypeScript, PostgreSQL, MongoDB, AWS, Kafka, and event-driven distributed systems. Experienced in architecture modernization, production debugging and root cause analysis, performance and memory optimization, data consistency, messaging reliability, and technical solution definition. Contributed to GenAI solutions including RAG and embeddings, and spearheaded solution definition for an Agentic Semantic Detection system.

PROFESSIONAL EXPERIENCE

Lead Software Engineer | Uplers - Client: Precisely | Mar 2026 - Present | Remote

- Investigated and resolved existing Out-of-Memory (OOM) issues in backend services, identifying memory-intensive processing patterns and improving service stability.
- Identified and addressed data consistency challenges in Kafka publishing workflows, improving reliability of metadata propagation across distributed services.
- Investigated issues in the existing Kafka consumer architecture, identifying processing and reliability problems and driving improvements to consumer behavior.
- Spearheaded solution definition for an Agentic Semantic Detection solution, contributing to architecture and technical direction for applying AI and agentic capabilities to semantic metadata detection.
- Evaluated MongoDB deployment options, including MongoDB Atlas versus MongoDB, with focus on write concern, consistency, reliability, and operational trade-offs.
- Contributed to architectural and system-design decisions across Node.js, TypeScript, MongoDB, Kafka, AWS, and distributed event-driven services.
- Collaborated with architects and senior engineers to investigate production issues, evaluate architectural trade-offs, and improve scalability, consistency, and reliability of distributed data-processing workflows.

Senior Software Engineer (Senior Associate) | Randstad - Deployed at Cognizant for Warner Bros. Discovery (WBD) | Mar 2025 – Mar 2026 | Remote

- Migrated a legacy backend toward hexagonal architecture, improving modularity, testability, and long-term maintainability.
- Designed and developed scalable Node.js services and GraphQL APIs, simplifying frontend data access.
- Built and enhanced event-driven workflows using AWS SQS, SNS, EventBridge, and Kinesis.
- Collaborated closely with architects and staff engineers on system design and technical decisions.
- Independently handled production debugging and root cause analysis across distributed services.
- Performed performance tuning and query optimization, including pagination strategies and indexing, to improve response times and system reliability.
- Contributed to GenAI-based RAG and embedding solutions for summarization and question-answering workflows.

Sr. Software Developer / Tech Lead | NMIMS University - Technology Solutions | Jul 2022 - Jan 2025 | Mumbai

- Mentored and guided 25+ developers in adopting best practices in Node.js, JavaScript, and databases.
- Resolved online-test scalability issues by implementing a Redis caching layer, reducing load on MySQL.
- Led a team of 4 in building a Visiting Faculty Tracking application with multi-stage approval workflows.
- Established engineering practices around ESLint, JSDoc, Jest, Husky, TypeScript, centralized logging, and error handling.
- Optimized PostgreSQL queries in the Question Bank Management System, improving retrieval performance.
- Automated MS Word question-paper generation using Node.js and PowerShell scripts; introduced BullMQ queues for concurrent file processing.
- Hardened session logic, protected sensitive APIs, and fixed security vulnerabilities across applications.

Software Engineer | JForce Solutions | Apr 2019 - Jul 2022 | Mumbai

- Architected and developed a Timetable module using Node.js, Express, EJS, and SQL Server, achieving 7x faster generation speed.
- Enabled real-time updates using Socket.io and built responsive frontend experiences with HTML, CSS, Bootstrap, and jQuery.
- Redesigned the UI of an LMS portal using HTML5, CSS3, Bootstrap, and jQuery to improve user experience.
- Provided knowledge transfer and mentoring for a team of 3 engineers after project completion.

EARLIER PROFESSIONAL EXPERIENCE

Senior Executive – Customer Service (Webchat) | Capita | Aug 2016 – Sep 2018 | Mumbai

- Provided technical and process support through live chat while maintaining high customer satisfaction.

PROJECTS

RankTrix - SEO Intelligence Platform | ranktrix.com | In Development | Independent

- Independently conceptualizing and developing an SEO intelligence platform focused on search intent, topical relevance, content quality, and content intelligence.
- Defining product architecture and technical direction with emphasis on contextual analysis beyond traditional keyword-based SEO scoring.
- Owning the project end-to-end across product direction, system design, backend engineering, experimentation, and technical implementation.

CodeTracr - Semantic Code Intelligence Platform | Open Source | Early Beta | Independent

- Independently conceptualizing and developing an open-source static analysis platform that builds a semantic code graph directly from source code ASTs to analyze code lineage, dependencies, and change impact.
- Designed the core analysis architecture around AST parsing, symbol resolution, graph construction, and graph traversal algorithms to derive source-level relationships across modern TypeScript/JavaScript codebases.
- Owning the project end-to-end across system architecture, TypeScript implementation, graph-analysis algorithms, repository abstraction, API design, benchmarking, and developer tooling.

BytesJourney | bytesjourney.com | Personal Technical Project | Independent

- Independently built and maintaining a technical platform focused on software engineering and developer learning, with emphasis on practical Node.js and JavaScript concepts.

TECHNICAL SKILLS

Backend: Node.js, TypeScript, JavaScript, Express, REST APIs, GraphQL

Cloud and DevOps: AWS Lambda, ECS, ECR, S3, SQS, SNS, EventBridge, Kinesis, Docker, GitHub Actions

Distributed Systems: Apache Kafka, Event-Driven Architecture, Asynchronous Processing, Distributed Services, Messaging Reliability

Databases: PostgreSQL, MongoDB, MongoDB Atlas, MySQL, SQL Server, Redis

Architecture: Hexagonal Architecture, Cloud-Native Design, System Design, Scalability, Reliability, Data Consistency

AI / GenAI: LLMs, RAG, Embeddings, Agentic Solutions, Semantic Detection

Quality and Operations: Performance Optimization, Memory Optimization, Debugging, Root Cause Analysis, Jest, ESLint, Husky, Centralized Logging

Other: BullMQ, PowerShell, Socket.io

EDUCATION

B.Sc. Physics (Hons.) | Liberal College of Science, Imphal, Manipur, India | 2013 - 2016

CERTIFICATION

Web Designing & Development - Arena Animation (2018)