

Nikhil Tiwari

Lead Software Engineer

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PROFESSIONAL SUMMARY

Results-driven Senior Software Engineer with 7 years of experience in backend development, scalable architecture, and system optimization. Expertise in PHP, Java, Python, Golang, AWS, and microservices, with a proven track record of improving system performance, reducing costs, and leading cross-functional teams. Adept at designing and implementing event-driven architectures, caching strategies, and high-performance systems. Passionate about mentoring teams, driving innovation, and delivering impactful solutions.

TECHNICAL SKILLS

Programming Languages: PHP, Java, Python, Golang, JavaScript/Node.js, HTML/CSS

Cloud & DevOps: AWS (EC2, S3, SQS, SNS, EventBridge, Lambda, RDS, ElastiCache, CloudWatch, IaC), Docker, Kubernetes, CI/CD

Databases: MySQL, Redis, MongoDB

Tools & Frameworks: Laravel, Spring Boot, Kafka, RESTful APIs, gRPC, JMeter, XDebug

Architectures: Microservices, Event-Driven Architecture, Serverless, Scalable Systems

Other Skills: Performance Optimization, SQL Query Tuning, Caching Strategies, Monitoring & Alerting (ELK, Splunk, CloudWatch)

Core Programming Concepts: OOPs, Design Patterns, Data Structures, Algorithms, System Design

PROFESSIONAL EXPERIENCE

SELF EMPLOYED

Delhi, Delhi

Skill Development | Jan 2025 - Now

- Focused on Data Structures & Algorithms (DSA) and AI/ML to strengthen foundational knowledge and problem-solving skills.
- Exploring AI/ML concepts, including supervised and unsupervised learning, neural networks, and natural language processing (NLP).
- Working on personal projects to apply AI/ML techniques in real-world scenarios.

OPTUM (UHG)

Gurugram, Haryana

Lead Software Engineer | Oct 2020 – Dec 2024

- **Performance Optimization:**
 - o Reduced MySQL query load times from 2 seconds to 200-500ms, improving system efficiency by 1.5x and lowering RDS CPU utilization from 70% to 50%.
 - o Migrated non-lag-sensitive queries from product DB to replica DB, reducing query execution time.
 - o Reduced ElastiCache CPU utilization by identifying and resolving duplicate event publishing.

- **Architectural Improvements:**
 - Designed and implemented a high-performance archival service, reducing database load and improving application latency.
 - Developed a Golang-based microservice using AWS SQS and EventBridge, replacing HTTP-based systems and reducing operational costs.
 - Designed and implemented a horizontal cache management system (CSM), reducing stale cache issues and improving system performance.
- **ETL Pipeline Redesign:**
 - Developed a PHP-based consumer layer from scratch as part of an ETL pipeline redesign project, replacing an HTTP-based system.
 - Collaborated with cross-functional teams to process messages from a queue, reducing processing time from 7 hours to 2 hours—a 71% improvement.
- **Leadership & Mentorship:**
 - Mentored junior developers, conducted code reviews, and set coding standards, improving team productivity and code quality.
 - Conducted training sessions on caching strategies and created detailed documentation for microservices.
- **Monitoring & Alerting:**
 - Implemented OpenTelemetry (OTEL) instrumentation and created dashboards for real-time monitoring, enabling proactive issue detection and resolution.
 - Integrated alerting mechanisms into the baseline framework, ensuring 100% error log capture and aggregation in production.
- **Cross-Functional Collaboration:**
 - Worked with DevOps to migrate from EC2 to EKS, optimize CI/CD pipelines, and reduce infrastructure costs.
 - Collaborated with QA teams to achieve >90% code coverage through unit and integration tests.
- **Security & Compliance:**
 - Addressed Dependabot issues and performed PII/PHI compliance checks, enhancing application security.
- **Recognition:**
 - Received multiple performance awards for dedication, collaboration, and delivering high-quality solutions on time.

NOTIFYVISITORS

Delhi, Delhi

Software Engineer

Feb 2019 - Jan 2020

- Led the development of Progressive Web Applications (PWA) and Trusted Web Activities (TWA), automating APK generation and improving deployment efficiency.
- Built a Kafka-based Pub-Sub system for large-scale analytics, enabling efficient streaming of user session and heatmap data.
- Developed a custom wrapper for Google Workbox, enhancing client-side caching and improving application performance.
- Designed and implemented a rate-limiting system to manage API traffic and prevent abuse.

BIGLY TECHNOLOGIES

Noida, UP

Junior Software Developer

Nov 2017 - June 2018

- Designed and tested RESTful APIs to enhance backend functionality and data integration.
- Transitioned from Core PHP to Laravel, improving code maintainability and scalability.
- Utilized PHP, MySQL, HTML, CSS, and JavaScript for full-stack development.

KEY ACHIEVEMENTS

- Designed and developed a horizontal cache management system (CSM), reducing stale cache issues and improving system performance.
- Implemented a data archival framework, improving query performance and reducing database load. Archived data can now be queried through AWS Athena.
- Developed a config-based rule manager framework, enabling dynamic rule processing and improving system adaptability.
- Migrated services from EC2 to EKS, reducing infrastructure costs and improving resource utilization.
- Facilitated daily scrum meetings, sprint planning, and retrospectives, ensuring timely delivery of features.

EDUCATION

APS UNIVERSITY

Satna, MP

Bachelor of Computer Application (BCA)

2014-2017

OBJECTIVE

Seeking a Lead Engineer role to drive technical excellence, mentor teams, and build scalable, high-performance systems. I aim to leverage my expertise in cloud computing, microservices, and event-driven architectures to deliver impactful solutions. Passionate about continuous learning, innovation, and making a real-world impact through technology.