Deepti Venkatesh

Software engineer

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SUMMARY

- Software Engineer with 5+ years of experience building scalable and high-performance applications across full-stack, cloud, and distributed environments.
- Proficient in Java, Spring Boot, and microservices architecture, with strong expertise in React.js, Node.js, and RESTful APIs for delivering user-focused solutions.
- Experienced in designing distributed systems, consensus protocols (RAFT, Paxos, PBFT), and event-driven architectures to ensure fault tolerance and system reliability.
- Skilled in leveraging AWS, GCP, Docker, Kubernetes, and CI/CD pipelines to deliver secure, cloud-native, and resilient platforms.
- Adept at applying object-oriented programming principles and modern software engineering practices to develop modular, maintainable, and robust applications.

WORK EXPERIENCE

Software Engineer, ML/Data - Intern *Aug 2024 — Dec 2024*
IUS Auto *Stony Brook, NY*

- Designed a semantic search interface with React, Next.js, and Tailwind to query FAISS vector indexes of 2M+ Doc2Vec embeddings, delivering sub-second results and improving legal search efficiency.
- Developed interactive UI components for clause similarity, confidence scoring, and document previews, which accelerated user decision-making and increased task completion by 30%.
- Integrated REST APIs with JWT-based secure embedding queries to safeguard sensitive data while maintaining seamless access.
- Deployed static assets to AWS S3 + CloudFront for low-latency delivery, ensuring scalable and globally accessible search experiences.

Software Engineer *Sep 2022 — Jul 2023*
Data Snipe Tech Pvt Ltd. *Bengaluru, India*

- Architected a Kafka-driven document processing platform on AWS (S3, Lambda, ECS, SNS/SQS) to ingest 10K+ PDFs/hour, enabling scalable and modular workflows.
- Deployed stateless, Dockerized Spring Boot services on ECS Fargate to support autoscaling and zero-downtime upgrades, which reduced deployment failures by 90%.
- Implemented AWS KMS, IAM least-privilege roles, and CloudWatch-ELK logging to secure delivery flows and provide SOC 2-compliant traceability.
- Automated infrastructure provisioning with Terraform and streamlined CI/CD pipelines in GitLab, cutting deployment time from 30 to 9 minutes.

Senior Software Engineer *Dec 2020 — Jul 2022*
Accenture Solutions Pvt Limited *Bengaluru, India*

- Engineered Kafka-based, event-driven microservices to process 100K+ claim events/day, achieving 80% improvement in SLA compliance and backend scalability.
- Designed Spring Boot services with MongoDB, Redis, and REST APIs to optimize policy renewals and premium calculations, boosting API performance 4x under load.
- Built a real-time ETL pipeline (Kafka → S3 → Redshift) to accelerate claims analytics availability, reducing latency from 6 hours to 30 minutes.
- Secured microservices using OAuth2 + Okta authentication and ELK-based auditing to satisfy regulatory requirements and strengthen system reliability.
- Standardized CI/CD pipelines with GitLab, Docker, and Kubernetes on AWS EKS to shorten release cycles from 45 to <10 minutes, while mentoring 5+ engineers on best practices.

Software Engineer *Nov 2018 — Dec 2020*

- Developed and maintained 15+ REST APIs with Java/Spring Boot to enhance policy issuance workflows, cutting error rates by 40%.
- Migrated legacy monolithic applications to a microservices architecture, accelerating release frequency from monthly to bi-weekly.
- Integrated external KYC and verification services through SOAP/REST APIs to digitize customer onboarding, reducing manual intervention.
- Strengthened claims and payment workflows through enhanced input validation and bug resolution, lowering QA defects by 20%.

- Wrote 250+ unit and integration tests (JUnit, Mockito) to raise code coverage from 55% to 85%, thereby increasing release stability and reliability.

Software Engineer Intern *Jul 2017 — Dec 2017*
HCL Technologies *Bengaluru, India*

- Assisted in developing RESTful services using Java and Spring Boot to support integration of legacy modules, gaining exposure to scalable platform design.
- Contributed to building and testing microservice components with Hibernate and Spring Data, enhancing application maintainability and supporting modernization efforts.
- Applied object-oriented programming concepts such as inheritance, encapsulation, and polymorphism to design clean, modular code, improving readability and ease of maintenance.

CORE SKILLS

Programming Languages: Java, Python, R, C++, HTML, JavaScript, CSS, Go, SQL
Paradigms & Concepts: Object-Oriented Programming (Encapsulation, Inheritance, Polymorphism), Functional Programming, Microservices Architecture, Event-driven Architecture, Infrastructure as Code
Backend Frameworks: Spring Boot, Hibernate, Node.js, Express.js, RESTful APIs, SOAP
Frontend Frameworks & Libraries: React.js, Next.js, Tailwind CSS
Distributed Systems & Messaging: Apache Kafka, gRPC, RAFT, Paxos, PBFT, Protocol Buffers
Cloud & DevOps: AWS (S3, ECS Fargate, Lambda, EKS, CloudFront, RDS, IAM, KMS, CloudWatch), GCP (App Scripts, Hosting, CI/CD), Docker, Kubernetes, Terraform, Ansible, GitLab CI/CD, Jenkins, Maven
Databases & Search Systems: MongoDB, PostgreSQL, Redis, SQLite, DB2, Redshift, FAISS, Doc2Vec
Monitoring & Observability: Prometheus, Grafana, OpenTelemetry, ELK Stack, Sentry, PagerDuty, Slack
Authentication & Security: OAuth2, JWT, Okta, IAM Roles, SOC 2 Compliance
Testing & Quality Assurance: JUnit, Mockito, TestNG, REST Assured, Unit Test, Jest, Cypress, Selenium, Puppeteer, Postman, JaCoCo, SonarQube, pre-commit hooks, GitLab/Jenkins CI test pipelines
Collaboration & Tools: Git, GitHub, Bitbucket, JIRA, Agile, Scrum

EDUCATION

Stony Brook University | Stony Brook, United States
Masters in Information Systems - Data Science / *(Aug 2023 – May 2025)*

PES University | Bengaluru, India
Bachelor's, Electronics and Communications / *(Aug 2014 – May 2018)*

PROJECTS

Software Engineer Full Stack - CS Workflow *Jan 2024 — Dec 2024*
Tech-Stack: (MERN | Mongo | Express | React | Node.js | GCP

- Built a role-based workflow automation platform with MERN stack on GCP to digitize departmental operations, ensuring secure access and high availability.
- Automated document signing and reminder flows using Adobe PDF and Google APIs to streamline approvals, which reduced turnaround from days to a single day.
- Developed event-driven orchestration with GCP App Scripts, Postal, and Docker to support 1,000+ users, enabling scalable and fault-tolerant task execution.

Fault-tolerant Distributed Transaction System *Aug 2023 — Dec 2023*
Tech-Stack: (Golang | gRPC | Paxos | RAFT | PBFT | Protocol Buffers)

- Designed a distributed transaction platform with Golang and gRPC to achieve consistent replication, enabling sub-500ms responses across replicas.
- Implemented RAFT, Multi-Paxos, and PBFT protocols to withstand asynchronous failures, ensuring strong consistency and availability.
- Optimized communication with Protocol Buffers to minimize serialization overhead, resulting in efficient and reliable inter-node messaging.