Rajkumar Kumaravelu

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Summary

With 5 years of experience as a Software Engineer, I have comprehensive expertise in various technologies, such as Java, React, AWS, MySQL, Node.js, MongoDB, Kafka, Elastic Search, and more. Passionate about Cloud and Java, I thrive on exploring and mastering emerging technologies.

Professional Experience

LeadHawk, Boston, USA   Jun' 23 – Dec' 23
Software Engineer Coop

- Architected and developed a SaaS platform that aids users in identifying and generating leads, incorporating Java, Spring Boot, and React.js to deliver robust and scalable solutions.
- Enhanced inter-service communication by implementing a distributed Kafka cluster across multiple AWS EC2 Availability Zones, optimizing data flow and system reliability.
- Optimized data retrieval and real-time alerting by configuring a two-node EC2 Elasticsearch cluster, improving the efficiency of filter-based data distribution.
- Developed and automated REST services for user-saved filters, utilizing Spring Framework and advanced query techniques for dynamic data fetching and real-time alert dispatch.
- Dockerized the application for improved scalability and deployed it on AWS ECS, ensuring optimized service orchestration and resilience.
- Utilized GitHub Actions for CI/CD**,** automating build and deployment processes to enhance development efficiency and reduce manual errors.

National Payments Corporation of India, Chennai, India   Jan '22 – Aug '22
Associate Certification Operations – Software Engineer

- Programmed scalable REST APIs with Spring Boot, for Test Management Automation Tool leveraging Eureka Discovery Server for enhanced inter-service communication, achieving significantly lower latency.
- Engineered REST APIs to grant external vendors tailored access to critical reports, integrating service registry with meticulous adherence to NPCI's API design standards, fostering seamless collaboration and communication channels.
- Leveraged Spring security and implemented OAuth2 and JWT tokens for secure authentication and authorization.
- Optimized object construction by designing services using the Builder pattern, improving code maintainability and clarity.
- Implemented cache feature using Redis for storing public certificates, reducing the retrieval time by 70% and significantly enhancing data validation efficiency.
- Integrated Hibernate ORM with Spring Boot using Spring Data JPA for Data Persistence to the database and reduced the lines of code by 10%.
- Streamlined the reporting system using iText library and increased the number of reports by 50%.
- Conducted load tests using JMeter and created unit test cases using JUnit and Mockito.

Straive, Puducherry, India   May '16 – Dec '21
Senior Subject Matter Expert – Software Engineer

- Worked on the development of an edu-tech platform, handled full-stack web development using Spring-React framework, aimed at providing education content to users.
- Responsible for crafting back-end REST APIs to support a dynamic content delivery feature on an edu-tech platform using the Spring framework in a Microservices environment. Implemented rigorous testing with JUnit and Mockito to ensure robust functionality and reliability of the feature.
- Developed a responsive analytics UI dashboard React and implemented high-performance charts consuming Chart.js library capable of displaying 1000 data points.
- Created reusable components using React Hooks and Redux for Central State Management, ensuring state consistency and increased efficiency by 10%.
- Implemented a user-driven image upload feature for an edu-tech platform, leveraging AWS S3 for efficient image storage.

- Enhanced content management by developing functionality to record image metadata in a MySQL database, integrated within a Spring-based Microservices architecture.
- Managed the lifecycle of a dynamic content delivery feature within a Dockerized React and Spring Boot full-stack application, ensuring seamless deployment and updates through Docker Hub.
- Utilized Pub/Sub model and created a message processing pipeline using AWS SQS that subscribed to a topic.
- Established monitoring and real-time email alerts for dead letter queues using serverless lambda functions significantly minimizing downtime and eliminating backlogs by two times.
- Designed and deployed an in-app messaging system using the Spring framework and STOMP protocol, facilitating real-time communication on the Straive platform.

Projects

Immutable Cloud Servers - AWS| Pulumi | GCP   Sep '23-Dec '23
- Engineered assignment submission portal enabling a real-time notification system with AWS RDS for data storage.
- Built customized AMI of Linux-Debian using Packer and deployed the application on AWS EC2 instance.
- Implemented Elastic Load Balancer to distribute traffic across Instances and Auto Scalers to scale instances.
- Performed continuous integration using GitHub Actions and Continuous deployment using Pulumi with zero downtime update and CloudWatch for log collection and application monitoring.

Insurance Plan - Springboot | Kafka | Elastic Search   May '23-Sep '23
- Designed microservice architecture to store insurance plans using Spring boot ensuring clean code practices and optimal performance for service interaction.
- Attained high throughput and low-latency data access by implementing Redis an in-memory data store for storing insurance plans in key-value pairs.
- Achieved Asynchronous communication and loose coupling between microservices by integrating Kafka for message queuing and enhanced reliability and scalability of the system.
- Employed ElasticSearch for indexing and searching data, significantly improving data retrieval speed and accuracy, thereby enhancing user experience.

Flatmate Expense Tracker – Node.js | React.js | MongoDB   Nov'22 – Dec '22
- Spearheaded the development of a full-stack application that enables users (individuals and groups) to monitor and analyze expenses.
- Engineered a backend system using Node.js and MongoDB, integrating scheduled cron jobs to automate the dispatch of detailed monthly spending reports to users.
- Implemented individual session management within the application, enabling a personalized experience where groups can independently record and oversee their expenses and budgets.

Education

Northeastern University, Boston, MA - **Master of Science in Information Systems**   Sep' 22 – Apr' 24
Courses: Data Structures and Algorithms, Cloud Computing, Big Data & Distributed Systems, Web development

Technical Skills

Programming Languages: Java, JavaScript, Python
Web Technologies: HTML, CSS, Bootstrap, Spring, React.js, Node.js, Hibernate
Database & Distributed Systems: SQL, MongoDB, Postgres, Redis, Elastic Search, Kafka
Cloud & CI/CD: Git, AWS, Pulumi, Packer, Docker, Kubernetes, GitHub Actions
Others: Postman, Mockito, JUnit, OAuth2, Agile & Scrum, JMeter, Maven