

Rithish Murugan

Software Engineer

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SUMMARY

Software Engineer with 4+ years of experience building scalable backend platforms across supply chain logistics and healthcare technology. Began career modernizing inventory, forecasting, routing, and warehouse systems by automating operations across 10+ warehouses and reducing logistics costs while improving fulfillment efficiency. Progressed into healthcare engineering, building distributed platforms that centralized patient records, and reduced physician documentation workload. Known for owning complex systems, partnering cross-functionally, and now targeting software engineering roles in the U.S. market.

EXPERIENCE

Abridge, Software Engineer

Jan 2025 – Present | Remote, USA

- Architect scalable **microservices** and backend platforms integrating fragmented EHR, lab, imaging, pharmacy, and insurance systems using **Python, FastAPI, Apache Spark, SQL, FHIR, and HL7**, centralizing 400K+ patient records.
- Engineer high-throughput **distributed systems** using **Amazon S3, PostgreSQL, Snowflake, Redis, Apache Kafka**, and ETL frameworks to process 300K+ clinical events daily, reducing retrieval latency and eliminating manual workflows.
- Build low-latency **REST APIs** and AI healthcare copilots using **OpenAI GPT-4o, Anthropic Claude, Llama 3, LangChain, RAG, and Pinecone**, reducing physician documentation workload while accelerating treatment recommendations.
- Develop event-driven backend systems using **LangGraph**, function calling, asynchronous workflows, caching layers, and distributed orchestration frameworks to automate patient summaries across 50K+ monthly clinical interactions.
- Partner with physicians, product leaders, and compliance teams to deploy predictive healthcare models using **XGBoost, TensorFlow, and Scikit-learn**, improving diagnosis speed and increasing hospital throughput.
- Lead cloud infrastructure scalability using **AWS EKS, Docker, Kubernetes, Terraform, CI/CD, CloudWatch**, encryption, audit logging, and **HIPAA compliance**, maintaining 99.99% uptime while reducing infrastructure costs 25%.

Virtualan Software LLC, Software Engineer

May 2024 – Aug 2024 | Chicago, IL

- Engineered scalable backend ETL pipelines using **Python, SQL, AWS S3, and Redshift**, processing **10K+ daily records**, optimizing cloud data workflows, and reducing reporting latency across critical analytics systems.
- **Built and optimized** RESTful APIs using **Python, SQL, Postman, and Swagger**, improving API reliability, increasing test coverage by **35%**, and accelerating backend integrations across cross-functional engineering teams.
- Implemented secure backend systems through **RBAC, data validation, code reviews, and Agile deployment workflows**, reducing production defects while accelerating feature releases across production environments.

Hexaware Technologies, Software Engineer

Mar 2021 – Jul 2023 | Chennai, India

- Architected scalable inventory management microservices using **Java, Spring Boot, REST APIs, and PostgreSQL** across 10+ warehouses, replacing manual planning workflows and improving inventory visibility by 60%.
- Engineered demand forecasting pipelines using **Python, Apache Spark, SQL**, and statistical models to analyze 150K+ historical orders, reducing stockouts while improving inventory utilization.
- Built **event-driven distributed systems** using **Java, Spring Boot, Apache Kafka, Redis, and AWS** to process 50K+ annual shipment events, reducing logistics visibility delays by 40%.
- Designed real-time route optimization services using **Python**, optimization algorithms, **SQL**, and geospatial APIs to automate delivery planning, reducing transportation costs and significantly improving delivery efficiency.
- Led warehouse modernization initiatives using **Docker, Kubernetes, RabbitMQ, and AWS** automation workflows, streamlining fulfillment operations, accelerating dispatch processing, and improving scalability during demand spikes.
- Partnered with operations, logistics, and supply chain leadership teams to modernize manual fulfillment workflows through cloud automation platforms, reducing delivery delays and saving \$100K annually.

SKILLS

Programming Languages: Java, Python, SQL, JavaScript, TypeScript, Go

Backend Engineering: Spring Boot, FastAPI, REST APIs, Microservices, Distributed Systems, Event-Driven Architecture, Asynchronous Processing, API Integrations, System Design, Caching

AI & Machine Learning: OpenAI GPT-4o, Anthropic Claude, Llama 3, LangChain, LangGraph, Retrieval-Augmented Generation (RAG), Pinecone, XGBoost, TensorFlow, Scikit-learn

Cloud & DevOps: AWS, EKS, Amazon S3, Docker, Kubernetes, Terraform, CI/CD, Amazon CloudWatch

Data Engineering: Apache Spark, ETL, PostgreSQL, Snowflake, Redis, Data Pipelines

Streaming & Messaging: Apache Kafka, RabbitMQ

Healthcare Technologies: FHIR, HL7, EHR, EMR, HIPAA, Audit Logging, Encryption

Supply Chain & Logistics: Inventory Management, Demand Forecasting, Route Optimization, Geospatial APIs, Warehouse Automation, Fulfillment Operations

Software Engineering: Agile, Performance Optimization, Scalability, Workflow Automation

EDUCATION

Master of Science in Computer Science

Illinois Institute of Technology

Aug 2023 – May 2025 | Chicago, IL