Harsh P. Bajaj

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Senior Software Engineer

Software Engineer with experience building scalable, secure, and intelligent enterprise applications for Global Fortune 500 technology companies, ensuring high availability and performance. Proven expertise in full-stack development, AI/ML integration, cloud infrastructure, and microservices. Passionate about creating tools that enhance workforce productivity and collaboration and mentoring junior developers in ML and design patterns.

Skills

Full-stack development | AI/ML integration | Cloud infrastructure | Microservices | Python | Java | C++ | C# | JavaScript
Go | Spring Boot | .NET | TensorFlow | Keras | Synapse | ML Flow | Apache Spark | | DevOps
Azure (Service Fabric, ML, Functions) | AWS (Sagemaker, EC2, CloudFormation) | Docker | Kubernetes | Kafka
Kusto Explorer | Git | Jira | Visual Studio | JetBrains | RESTful APIs | CI/CD | GenAI | BFF Patterns | NoSQL | DynamoDB
MongoDB | CosmosDB

Professional Experience

Microsoft - Redmond, WA July 2021 - present
Software Engineer II (Silicon, Cloud Hardware Infrastructure)

- Designed and implemented a scalable orchestration platform using Databricks, Apache Spark, and Azure Synapse, enabling seamless data processing across global enterprise datasets.
- Developed a machine learning pipeline using Python and Synapse ML to predict GPU failures from telemetry data, deploying models as AI agents in Azure Foundry.
- Built a distributed telemetry ingestion system using Docker, Kafka, C++, and .NET, integrating with system-level APIs and secured via Entra ID and certificates.
- Collaborated cross-functionally with hardware and software teams to deliver high performance and secure and maintainable tools for cloud infrastructure monitoring.

Amazon Web Services - Seattle, WA July 2019 - July 2021
Software Development Engineer (AWS Identity)
Engineered TOTP-based authentication for AWS SSO Console using Java, enhancing secure access for enterprise users.

- Built and maintained CI/CD pipelines using AWS CodeDeploy and CloudFormation, improving deployment efficiency and reliability.
- Designed a shadow AI system using AWS Sagemaker, EC2, and CloudWatch, integrating Jupyter notebooks and Java-based services for internal analytics.

FireEye - Milpitas, CA May 2018 - August 2018
Software Engineering Intern (Email & Cloud Security)
Developed a custom K-Means clustering algorithm for logline analysis, integrated with Jira, automating issue tracking and improving internal support workflows.

Education

Master of Science (M.S.), Computer Science
University of Illinois, Chicago
Relevant Coursework: Cloud Computing | Machine Learning | Distributed Systems | AI Safety | Big Data | Deep Learning

Bachelor of Technology (B.Tech), Computer Science and Engineering
Vellore Institute of Technology
Relevant Coursework: OOP | Data Mining | Linear Algebra | Graph Theory | Computer Networks

Projects

- Built a chatbot using Azure AI, LLMs, and KQL to help users optimize queries in Azure Data Explorer. Integrated document embeddings and SQL frameworks to enhance internal data accessibility.

- Developed a GenAI system using AWS Bedrock to forecast stock trends by aggregating data from financial news, websites, and the Federal Reserve.

- Developed an end-to-end RAG system that indexed custom documents using VectorStoreIndex and retrieved contextually relevant data for LLM-based responses. Enabled ability to analyze two companies, from the same sector, using financial earnings release in quarter.

- Built a Retrieval-Augmented Generation (RAG) solution using Azure AI Search, Azure OpenAI, and Python, enabling efficient semantic indexing, retrieval, and generation of context-aware responses. Used vector search to query hotel reviews based on semantic indexing against vector embedding from user query.