



ORACLE®
Certified Associate
Oracle Database 11g
Administrator

Karri Sairamakrishna BuchiReddy

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Lead Python / Java/GO Full Stack Developer

/ Data Engineer/ Solution Architect

Summary

Solution architect and engineering leader with over fourteen years' experience designing and delivering cloud-native, event-driven and AI-enabled systems across financial services, automotive trade compliance, healthcare and retail. Currently holds enterprise design and architecture responsibility for Ford's global customs and trade platform on Google Cloud, following five years as design authority for Capital One's AWS payments and fraud estate. Fellow of the BCS and the IETE, Senior Member of the IEEE and Member of the IET; co-author of eighteen peer-reviewed papers and an invited keynote speaker at international conferences.

Technical Skills

Languages: Java 8/17, Python 3.8/3.9, Go, SQL, PL/SQL, JavaScript, Shell, Ruby.

Frameworks: Spring Boot, Spring MVC, Spring Cloud, Spring Batch, Spring Security, Spring JDBC, Hibernate, Flask, Django, JSF, Angular, JSP/JSTL.

Cloud: AWS (EC2, ECS, Fargate, Lambda, S3, SQS, SNS, RDS, DynamoDB, API Gateway, CloudFront, WAF, IAM, KMS, EMR, Glue, CloudWatch, Route 53, ELB, VPC); GCP (Cloud Functions, Pub/Sub); Azure (VMs, VNets, DevOps).

Data & Messaging: Kafka (Connect, Streams, Schema Registry), IBM MQ, Google Pub/Sub, PostgreSQL, Oracle, MySQL, DB2, Cassandra, DynamoDB, Databricks, PySpark, Hadoop, ELK.

DevOps: Docker, Kubernetes, Terraform, Jenkins, Azure DevOps, Git/GitHub/SVN, Maven, Gradle, Ant, Nexus, Splunk, New Relic, CloudFormation.

Testing: JUnit, Mockito, Cucumber/Gherkin, Selenium, Protractor, Rest Assured, PyTest, Behave, TDD/BDD.

AI & Delivery: Claude, ChatGPT, Google Gemini, Blueprint; Agile Scrum, JIRA, MS Visio, Swagger, SDLC governance, onsite/offshore delivery.

Education

- Masters in Information Technology, Virginia International University, Fairfax VA, 2014.
- Bachelor of Technology in Electric and Communication Engineering Jawaharlal Nehru Technological University India, 2011.

Certificates

- **AWS Certified:** Solutions Architect – Professional; Solutions Architect – Associate; Developer – Associate; Advanced Networking – Specialty.
- **Also:** Project Management Professional (PMP); Oracle Database 11g Administrator Certified Associate.

Memberships

- Fellow, British Computer Society (FBCS) — July 2026
- Distinguished Fellow, Soft Computing Research Society (SCRS) — May 2026
- Associate Member, Association for Computing Machinery (ACM) — May 2026
- Member, Institution of Engineering and Technology (MIET) — January 2026

- Senior Member, Institute of Electrical and Electronics Engineers (IEEE) — August 2025
- Fellow, Institution of Electronics and Telecommunication Engineers (FIETE) — June 2025

Keynote Speakers, Judging and Session Chair

- **Keynote Speaker:** SEATNGA 2026; ICCDM 2026; ICSETI 2026 (JSS Academy of Technical Education, Noida); ICACA 2026; ICDAM 2026 (London Metropolitan University, UK).
- **Session Chair:** IEEE ESCI 2026 (Special Session); ICACIT 2026; ICAAAIML 2025 (Sharda University, Greater Noida).
- **Hackathon Judge:** 2nd SmallAI Hackathon 2026 (Bluffdale ACM Chapter, USA); InOut 2026 Grand Finale (JSS University, Noida); Student Innovators Without Borders 2025.

Publications

- **"Sagorika: A Sustainable AI-Driven UAV Ecosystem for Autonomous Plastic Waste Detection and Management."** IPCV'26, CSCE 2026, Las Vegas, July 2026. Springer Nature.
- **"Vaibhav: Fine-Grained Energy Management of Data Center Servers Using PowerNap."** ICAI'26, CSCE 2026, Las Vegas, July 2026. Springer Nature.
- **"Dynamic Inventory Optimization and Cost Reduction Using Motif Knowledge Heterogeneous Dollmaker Graph Attention Network for Global Supply Chain Efficiency."** Research Square preprint, February 2026. doi:10.21203/rs.3.rs-8496455/v1.
- **"AI-Driven Real-Time Data Synchronization in Distributed Financial Systems."** IEEE SoutheastCon 2026, February 2026, pp. 1–7.
- **"DataMind AI: A Dynamic, Agentic Framework for Real-Time Multimodal Retrieval-Augmented Generation."** IEEE, February 2026; presented at ICSETI 2026, JSS Academy of Technical Education, Noida.
- **"An Explainable Hybrid Natural Language Processing and CatBoost Framework for Phishing Website Detection."** Springer Nature, December 2025.
- **"An Architecture for Model Monitoring System with Automated Data Validation and Failure Handling."** IEEE ICCSAI 2025, vol. 3, pp. 1960–1966.
- **"Assessing User Confidence and Acceptance of AI Enhanced Through Multi-LLM Consensus Mechanisms."** International Transactions on Electrical Engineering and Computer Science 4(4), 2025, pp. 227–236.
- **"Improving Retail Efficiency with a Smart Trolley Featuring RFID Billing and Bluetooth Integration."** IEEE ICECIE 2025, Pattaya City, Thailand, pp. 90–95. doi:10.1109/ICECIE66637.2025.11363850.
- **"MiRNAClassifier: Improving Cancer Biomarker Identification with a Spatio-temporal Adjustable Deep Learning Algorithm."** IEEE ICCSP 2025.
- **"Advancements in Topological Qubits: Microsoft's Majorana Approach."** International Journal of Engineering Research & Technology (IJERT) 14(05), May 2025.
- **"AI Chatbots in Banking: Transforming Customer Service and Operational Efficiency."** Advancements in Smart Innovations, Intelligent Systems and Technologies, 2025, pp. 61–81. Best Paper Award, ICIEET 2025.
- **"Quantum Computing for Nanomaterials: Accelerating Material Discovery."** Advancements in Smart Innovations, Intelligent Systems and Technologies, IOS Press, 2025, pp. 102–119.
- **"Islanding Detection of Integrated DG System Using Rate of Change of Frequency over Reactive Power."** International Journal of Power Electronics and Drive Systems 16(3), 2025, pp. 1637–1644.
- **"Enhancing Cloud-Native Applications: A Comparative Study of Java-to-Go Microservices Migration."** International Transactions on Electrical Engineering and Computer Science 4(1), 2025, pp. 1–12. doi:10.62760/iteecs.4.1.2025.127.
- **"Cross-Domain Expert in Designing AI-Driven Microservices."** December 2024. doi:10.1729/Journal.42790.
- **"Artificial Intelligence in Wealth Management and Portfolio Optimization."** ICEEE 2022, January 2022.
- **"Deep Learning Approaches to Stock Market Forecasting."** ICACIT 2022, March 2022.

Professional Profiles

Personal Website <https://sairamakrishnakarri.com/>

LinkedIn	https://www.linkedin.com/in/sairamakrishna-karri-042142121/
Google Scholar	https://scholar.google.com/citations?user=g7K72dUAAAAJ
Web of Science	https://www.webofscience.com/wos/author/record/MIQ-3120-2025
Credly	https://www.credly.com/users/sairamakrishna-karri/badges
Medium	https://medium.com/@sairamakrishna.karri
DZone	https://dzone.com/users/5264446/nagpursai.html
ADPList	https://adplist.org/mentors/sairamakrishna-karri

Ford, Dearborn MI Nov 2024 – Till Date

Lead Software Developer / Solution Architect

- **Architected** and built **containerized, modular microservices** with **Java** and **Spring**, resulting in **highly available** and **fault-tolerant** systems supporting Ford's global operations.
- **Implemented** secure **identity, access, and network configurations** on **GCP** in accordance with **internal policies** and **regulatory requirements**.
- **Developed** robust **APIs (RESTful & SOAP)** that facilitate **seamless data exchange** between **heterogeneous systems**, enhancing **performance** and **interoperability**.
- **Utilized IBM MQ** and **Google Pub/Sub** to handle **asynchronous communication** and **process events** in **real time**.
- **Contributed** to **Ford Global Customs** initiatives that support **global customs compliance**, integrating with **international trade systems** to **streamline cross-border logistics**.
- Coached junior developers, ran code reviews and set engineering standards (TDD/BDD), and drove Scrum delivery across sprint planning, stand-ups and retrospectives.
- **Oversaw onsite and offshore teams**, ensuring **seamless communication, collaboration, and alignment** across **multiple time zones**.
- **Applied generative AI** across the delivery lifecycle, using **Claude, ChatGPT, Google Gemini and Blueprint** for design exploration, code review, test generation and technical documentation, shortening turnaround on routine engineering work and improving consistency across the codebase.

Environment: Java 17, Spring (Boot, MVC), Google Cloud Platform, Cloud Functions, IBM MQ, Google Pub/Sub, Jenkins, Git, Maven/Gradle, SOAP/RESTful APIs, TDD/BDD, JUnit, Cucumber, Rest Assured, Claude, ChatGPT, Google Gemini, Blueprint.

Capital One, Richmond VA July 2019 – November 2024

Sr. Lead Software Developer / Solution Architect

- Implemented Spring Boot microservices to process messages through the Kafka cluster.
- Built microservices on Spring with cloud-native architectures, deploying to EC2, Fargate, ECS and Lambda.
- Developed REST microservices for Mastercard and Visa fraud reporting, and further CPAL microservices.
- Configured auto-scaling, highly available microservices with monitoring and logging across AWS, Docker, Jenkins and Splunk.
- Built and operated the platform on AWS using **RDS, CloudWatch, EC2, Elastic Load Balancer, Route 53, KMS, SNS, S3, Lambda and IAM**.
- Troubleshoot and tuned performance, and provided 24/7 production database support, ensuring overnight processes met business service-level agreements.
- Worked across the full SDLC: requirements gathering, modelling, analysis, architecture design and prototyping.
- Designed the architecture for PAYEX NextGen inbound and outbound microservices.
- Developed the Client Registry, Session Control and Return Handler microservices using Spring Boot, REST Template, Web Client, Kafka, IAM roles, Jenkins pipelines, ECS, SQS, SNS, Spring JDBC template, PostgreSQL, DLQ, S3, target groups, autoscaling, ELB and EC2.

- Generated the Entry Detail and Addenda Records, Batch Header and Trailer Records, and File Header and Trailer Records that form the NACHA file, delivered to the EFG mailbox at scheduled times for downstream processing by PEP+/FED to disburse funds to the end customer.
- Published PAYEX messages as Base64 and SHA-256 encrypted JSON byte arrays, carrying overall, ACH debit and per-client credit amounts in the addendum via the Rail Integration API and the PAYEX commercial package.
- Owned AMI rehydration, maintenance and enhancement of the existing ACH components — Detail, Batch and File Record Creators, File Creator, Return File and Return Record Processors, NOC Record Processor and Journal — built with **Spring Core, Spring AOP, Spring ORM, SQS, SNS topics, Cassandra, Swagger and YAML**.
- Implemented KMS encryption and decryption for the return handler component.
- Created security groups through Nimbus, building the repository and Terraform scripts and running them from the Nimbus console.
- Led the team through architecture, design, development, testing and deployment of the Payments NextGen component.

Environment: Java 8/17, Python 3.8/3.9, Go, J2EE, Spring Boot, Spring Cloud, Spring JDBC Template, REST Template, Kafka, REST, SOAP UI, Postman, Flask, Django, JSON, JavaScript, CSS3, HTML, AJAX, JDBC, PostgreSQL, Cassandra, DynamoDB, AWS (EC2, ECS, VPC, Autoscaling, Security Groups, CLI, SQS, SNS, S3, Lambda, API Gateway, CloudFront, WAF, Cognito, User Pool, Assume Role, KMS, Java SDK), Docker, Kubernetes, Terraform, Jenkins, Git, Maven, JUnit, Mockito, Cucumber, IntelliJ IDEA, Log4j 1.2, Splunk, New Relic, ELK, Scrum, MS Office, SQL Studio.

Capital One, Red Rock-Monitoring System May 2018 – June 2019

Sr. Python Developer / Lead Software Developer / Data Engineer

- Led predictive credit-scoring analysis to determine whether credit extended to new or existing applicants would result in profit or loss.
- Modernised the application in PySpark by analysing the legacy ETL codebase.
- Created model monitoring (red rock) using python, Py-Spark, Avro, EMR, Lambda, Cron (job Scheduled), and SNS to validate data and notify discrepancies from credit bureau data (Equifax, Experian, TransUnion, and transaction) using data lake.
- Developed Data Frame solutions to pre-process large sets of structured, with different file formats (Text files, Avro data files, Sequence files, XML and JSON files, ORC, and Parquet).
- Deployed the infrastructure and application using CI/CD pipeline (PyLint, White Source, Check Marx, AWS CLI, Behave Framework, PyTest & Jenkins)

Environment: Python, NumPy, Py Spark, Behave, Boto 3, Yaml, Cucumber, HTML5, CSS3, JavaScript, GitHub, M S office 2010 and 2013, AWS, EMR, S3, lambda, Cron (job Scheduled), CloudWatch, AWS EMR, VPC, Security Groups, AWS CLI, SNS, MS Visio.

Evolent Health, Arlington VA April 2017 – May 2018

Sr. Software Engineer

- Implemented the business and navigation layers using Spring dependency injection, annotations and Spring MVC.
- Created various web services using JAX-WS and generated the WSDL.
- Identified and resolved production performance issues through dynamic monitoring with Catchpoint and New Relic.
- Created CI/CD pipelines for python, Java apps in **Azure DevOps** by integrating source codes **GitHub**, and artifacts. Created deployment areas such as **testing, pre-production, and production environment** in **Kubernetes** cluster.

Capital One, Richmond VA

July 2016 – Mar 2017

Lead Java Full Stack Developer

- Designed and built REST web services using Spring Boot and microservices.
- Built the Services Group Lookup, Servicing Notes, Merchant Decline and Symphysis APIs on the Chassis framework.
- Wrote shell and Ruby scripts to generate the environment parameter files used to deploy web services on AWS.
- Led a team of 8 members for the development and deployment of applications in the IRIS.

Eli Lilly, Indianapolis, IN Jan 2016 – June 2016

Sr. Java Full Stack Developer

- Developed the SDTM code-list conversion tool in line with the Computer Systems and Electronic Records; Electronic Signatures (LQS302) procedure.
- Implemented Role-Based authentication using Spring Security.
- Developed lab reference tables in MySQL to support data import into the Quantum Clinical Metadata Repository (CMDR).

Tyson Food INC., Springdale, AR July 2015 – Jan 2016

Sr. Java Developer

- Handled shipping and receiving flows across intercompany, customer and export operations.
- Developed the Presentation and Controller layers using JSP, HTML, Java Script, Business logic using Spring (IOC, AOP), and Persistent layer DAO for all modules.
- Handled Production Support of the application, fixed bugs efficiently, and prepared RCA documents as part of the process.

Hadiamondstar Software Solutions, LLC. Fairfax Aug 2014 – Jun 2015

Sr. Technical Recruiter

- Ran full-cycle technical recruitment for US client and vendor channels — sourcing, screening, rate negotiation and placement of consultants on corp-to-corp contracts, consistently meeting company placement targets.

Ramsai Software Solutions, India Aug 2011 – April 2013

Java Developer

- Worked across the complete project life cycle, from requirements through to delivery.
- Implemented consumption of RESTful web services.