

# Rajesh Subramanian

Senior Big Data | AI | ML Engineer | Full-Stack Software Architect



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## Profile

- Specialized in designing **high-throughput distributed systems** with **metadata-driven ETL frameworks** reducing pipeline onboarding time by **70%**
- **Results Driven Architectural Strategy:** Proven track record of transitioning complex monolithic systems to **Cloud-Native Microservices** (Python / Java / Spring Boot / Go ecosystem) with **12 Factor App** methodologies and **Software Design Principles** increasing operational efficiency **gains by 27%**
- **Cost Efficient Distributed Data Engineering:** Architected large-scale pipelines using Big Data Technologies such as **Hadoop, Spark, Docker / Kubernetes (GKE)**, and **Airflow** etc. optimizing workloads to achieve **40% reductions in compute costs**
- **Business Efficiency with AI & Emerging Tech:** Improved business performance by 20% by implementing Machine Learning & Neural Network models
- **Leadership & Full-Stack Mastery:** Deep proficiency in Python and Java ecosystems ( in **Spring Boot, FastAPI, Go** ), Proven track record of ability to upgrade along with evolution of technology
- Active **opensource contributor** in Kaggle and github projects
- **Communication:** B1+ Level German skills.

## Skills

### Big Data & Analytics

Apache Spark, Apache Iceberg,  
Parquet, Hadoop, Kafka, Airflow,  
*Sedona, Dask, Lakehouse*

### Programming & Backend

Python, Java J2EE, Spring  
Boot, Microservices Go, Gin, Fast  
API, Node, Express JS, Nest JS

### Front End

React JS, Angular

### AI | Generative AI | ML

Machine Learning, Neural  
Networks, Model Context  
Protocol (MCP), Building Agent,  
Retrieval-Augmented Generation  
(RAG), **HNSW (Vector Search  
Indexing)**, LangChain, Natural  
Language Processing (NLP),  
Computer Vision

### Databases & Graph

PostgreSQL, MongoDB, Neo4j,  
ArangoDB, Oracle, MySQL,  
Teradata, Database Migration

### Cloud & DevOps

**Cloud-Native Architecture**  
(AWS, Google Cloud), Docker,  
Kubernetes, Infrastructure as  
Code (Terraform), Circle CI

### APIs & Messaging

Kafka, Kafka Streams, Google  
Cloud Pub/Sub, Active MQ,  
gRPC, REST, Webhooks, Socket  
Programming

## Work Experience

<b>Lead Data Engineer</b> <i>BigThinkCode Technologies</i>	07/2025 – Present   Chennai, India
<ul style="list-style-type: none"><li>Architecting projects with techstack React, NestJS , Postgres</li><li>Designing Pipelines for scalable distribution systems</li><li>Socket Programming for LIVE PCM Audio transfer for podcast</li></ul>	
<b>Data &amp; AI Intern</b> <i>Keep Scotland Beautiful</i>	11/2025 – 12/2025   Stirling, Scotland
<ul style="list-style-type: none"><li>Participated in the architecture design phase of the AI project, providing input on data scalability and near-real-time processing requirements</li><li>Actively contributed to the Litter Detection Project by collecting and labeling a high-quality dataset of <b>1000</b> images for AI model training</li></ul>	
<b>Lead Fullstack / Data Engineer</b> <i>BigThinkCode Technologies</i>	08/2022 – 01/2025   Chennai, India
<ul style="list-style-type: none"><li><b>Architected a Metadata-Driven ETL Framework:</b> Developed a pluggable "Configuration-over-Code" system using <b>PySpark</b> , reducing new pipeline onboarding time by <b>70%</b></li><li><b>Engineered Kubernetes-Native Infrastructure:</b> Deployed Spark on <b>GKE</b>, implementing dynamic dependency loading for distributed archives (ZIP/JAR) to ensure seamless scaling and a <b>40% reduction in compute costs</b></li><li><b>Decoupled Business Logic from Engine:</b> Established a 3-tier architecture (JSON Manifest, Orchestrator, Worker Logic) that increased code reusability and maintained <b>99.9% pipeline reliability</b> across global brand datasets</li><li><b>Architected</b> scalable Enterprise level application using <b>SOLID Principles</b> and <b>12 Factor App</b> using Fast API / React / Postgres / AWS</li></ul>	
<b>Full Stack Engineer</b> <i>Software - Freelancer</i>	03/2021 – 07/2022   Pondicherry, India
<b>Technical Manager</b> <i>eSales Technologies Pvt Ltd</i>	03/2012 – 03/2021   Pondicherry, India
<ul style="list-style-type: none"><li><b>Architected Scalable Cloud-Native Web Applications by Leveraging Java / Python ecosystem</b> to design a microservices-based e-commerce ecosystem, improving system modularity and reducing feature deployment cycles by <b>40%</b></li><li><b>Engineered Generic E-commerce Data Warehousing:</b> Built a modular data warehouse architecture to centralize cross-platform retail data, utilizing <b>metadata-driven</b> patterns to support rapid business intelligence and reporting.</li><li><b>Modernized Legacy Infrastructure:</b> Spearheaded the migration of monolithic PLB legacy applications to a <b>Cloud-Native architecture</b>, resulting in a <b>27% gain in operational efficiency</b> and significantly lower maintenance overhead.</li><li><b>Optimized High-Performance APIs:</b> Redesigned core system interfaces using <b>FastAPI</b> and <b>Gin</b>, achieving a <b>30% reduction in latency</b> and ensuring the platform could scale to meet peak traffic demands.</li></ul>	

<b>Associate Consultant</b>	12/2010 – 03/2012   Chennai, India
<i>Oracle Financial Software Services</i>	
Developed and implemented core banking modules for Tier-1 financial clients, ensuring compliance with regulatory standards.	
<b>Programmer Analyst</b>	10/2009 – 12/2010   Chennai, India
<i>Cognizant Technology Solutions India Pvt Limited</i>	
<b>Senior Software Engineer</b>	11/2006 – 09/2009   Chennai, India
<i>iGate Global Solutions</i>	
Led the successful migration of two legacy systems onto a unified platform in terradata, improving data consistency and reporting speed by 27%	

## Education

<b>M.Sc Big Data</b>	01/2025 – 09/2026   Stirling, UK
<i>University of Stirling</i>	
<b>M.B.A - International Business</b>	08/2008 – 05/2012   Pondicherry, India
<i>Loyola College/ Pondicherry University</i>	
<b>Bachelor of Technology - Electrical &amp; Electronics Engineering</b>	08/2002 – 05/2006   Pondicherry, India
<i>Pondicherry University</i>	

## Certifications

- AWS Cloud Practitioner ☈
- Astronomer Certification DAG Authoring for Apache Airflow ☈
- Azure AI Fundamentals