

Jeyanthi Thangiah

Engineering Manager and AI Solutions Architect

Washington DC Metro Area jeyanthi.thangiah@gmail.com linkedin.com/in/jeyanthithangiah jeyanthithangiah.com

PROFESSIONAL SUMMARY

Engineering leader with 22+ years of experience managing cross-functional teams and delivering enterprise-scale AI solutions in defense and government sectors. Proven track record of **leading engineering teams** at AWS and managing complex technical projects across government agencies. Previously served as **technical leader** for the **AWS Transform** service and **ProServe experience** with the **APEX** team, building next-generation AI products. Extensive AWS cloud platform expertise with proven ability to quickly master similar cloud technologies. Extensive experience managing engineering teams in public sector environments (DOD, DOJ, NIH, FDA, NIAID) with demonstrated ability to lead technical teams while maintaining strong technical depth and delivering mission-critical systems.

CORE COMPETENCIES

AI & Modern Tech: Bedrock, SageMaker, LangGraph, AgentCore

Engineering Management: Team Leadership, Project Delivery

AI Infrastructure: Model Serving, Distributed Systems, ECS, Lambda

Programming: Python, C++, TypeScript, Java, JavaScript

Cloud & DevOps: AWS, CDK, CI/CD, Infrastructure as Code

Data Engineering: Big Data, ETL Pipelines, Real-time Processing

PROFESSIONAL EXPERIENCE

Software Development Engineer July 2024 - September 2025
Amazon Web Services (AWS) | Arlington, Virginia

AWS Transform, SEG Platform & APEX Project Development - Building next-generation Agentic AI products for enterprise transformation, AI agent orchestration, and professional services enablement

APEX (Agentic AI Professional Services Experience) Project

- Technical Leadership : **Led technical architecture** for APEX project, enabling ProServe teams to build customer solutions using latest AWS agentic AI tools
- Knowledge Extraction MCP Blueprint : Delivered **Knowledge Extraction MCP Blueprint** that processes customer documents and builds contextual knowledge bases, enabling AI agents to understand customer-specific information for intelligent decision-making. Built initial version using **scikit-learn, SageMaker AI, and Step Functions** for AI pipeline orchestration
- Technical Architecture : Built **Headless Agent** running on **AWS AgentCore** and **Strands** with intelligent state management using **DynamoDB** , featuring 4-phase agentic document processing (Reception, Time Window, Batch Processing, KB Ingestion) with adaptive learning loops
- ProServe Enablement : Enabling ProServe teams to build customer solutions with knowledge base indexing capabilities, reducing time-to-expertise by 60% through reusable blueprints

Technology Stack: AWS Bedrock, AWS AgentCore, SageMaker, Step Functions, LangGraph, DynamoDB, Cognito, MCP (Model Context Protocol), Strands SDK, Lambda, ECS, CDK, TypeScript, Python, Vector Databases, scikit-learn

AWS Transform & SEG Platform Development

- **Technical Leadership** : **Core developer of industry's first agentic AI migration service** that transforms .NET, mainframe, and VMware workloads 4x-80x faster than traditional approaches
- **Technical Architecture** : Built scalable, AI-powered transformation tools with **complete job management capabilities** including Human-in-the-Loop (HITL) flows for enterprise transformation workflows, using ECS, Lambda, S3, DynamoDB, and CloudWatch , deployed via CDK
- **Multi-Region Infrastructure** : Led FRA region build implementation coordinating 15+ teams, implementing DynamoDB Global Tables, Cross-Region Service Discovery, VPC peering, and Route53 using CDK constructs
- **SEG Platform Architecture** : **Architecting revolutionary hybrid AI platform** combining LangGraph workflow orchestration with Strands SDK agent execution , **instrumental in achieving GA readiness for 2025 launch**
- **AppSec Leadership** : **Complete AppSec ownership** for SEG Milestone 2 with comprehensive threat models, delivered **zero security issues** across all deliverables

Technology Stack: LangGraph, Strands SDK, DynamoDB, Lambda, Step Functions, SageMaker, Bedrock, Vector Databases, Multi-region deployment, ECS, CDK, TypeScript, Java, Python, VPC, Route53, Global Tables, WebSockets, React

Software Development Manager

February 2022 - July 2024

Amazon Web Services (AWS) | Arlington, Virginia

CodeCatalyst Workflows - CI/CD Team

- **Engineering Team Management** : **Led cross-functional development team of 9 engineers**, ensuring high-quality deliverables and adherence to AWS development standards
- **AWS Service Ownership** : **Owned complete service lifecycle** for Amazon CodeCatalyst Workflows, including system design, fault-tolerant architecture, incident management, and maintaining 99.9% availability standards
- **Product Launch Leadership** : Successfully managed a key segment of the CI/CD team to deliver Amazon CodeCatalyst Workflows, a fully integrated DevOps service launched at AWS re:Invent 2022
- **Cross-functional Collaboration** : Worked closely with product managers, UX designers, and infrastructure teams to ensure seamless integration with existing AWS services and developer tools
- **Operational Excellence** : Established monitoring, alerting, and incident management processes to ensure high availability and customer satisfaction, including GameDay validation and post-incident reviews

Technology Stack: AWS CodeCatalyst, AWS Lambda, DynamoDB, SNS, SQS, CDK, Kotlin, CI/CD, DevOps, GenAI, Amazon Q, Agile/Scrum, Sprint Management

Software Development Manager

January 2020 - February 2022

Common Securitization Solutions (U.S. Financial Technology) | Bethesda, Maryland

BPO-MARS Product - First Agile Autonomous Team

- **Engineering Team Leadership** : **Managed cross-functional MARS engineering team of 21+ members (first Agile autonomous team in CSS)** for the BPO-MARS product, **delivered 6 major releases** in rapid delivery model
- **Platform Architecture** : Designed cloud-native containerized microservices on AWS (ECS, Lambda, S3) integrated with Appian BPM suite, Snowflake data warehouse, and Redshift Spectrum for seamless CI/CD integration and real-time data processing
- **Release Management** : Delivered 6 major releases in rapid delivery model with incremental features to production, ensuring high quality and customer satisfaction

Technology Stack: Cloud-native microservices, Appian BPM, CI/CD, SaaS, Agile methodologies, Java EE, AWS infrastructure, Snowflake data warehouse, AWS (ECS, Lambda, S3), Redshift Spectrum

Technical Lead for Common Securitization Platform (CSP)

April 2015 - December 2019

Common Securitization Solutions (U.S. Financial Technology) | Bethesda, Maryland

Common Securitization Platform (CSP)

- Technical Leadership : **Technical Lead for A-Flow modules (Issuance and Interfaces)**, providing deep domain expertise and technical guidance for critical mortgage securitization platform components
- Innovation Recognition & Unified Cukes Framework : **Won Shark Tank award for Innovation** and architected UCF to standardize testing across 13+ development teams, eliminating code duplication and enabling CI/CD pipeline
- Technology Stack : **Built on Java/J2EE, Oracle database, event-driven architecture** implementing microservices architecture and parallel processing solutions for scalable mortgage securitization platform

Lead Technologist

June 2014 - March 2015

Booz Allen Hamilton | Rockville, Maryland

FDA CDER RAPID - Regulatory Affairs Platform

- Government Technical Leadership : **Led technical team for FDA CDER RAPID platform development**, providing technical guidance and ensuring compliance with regulatory requirements
- Platform & Compliance : **Developed scalable platform architecture** for FDA regulatory affairs, ensuring compliance with FDA security standards and implementing robust security measures
- Big Data Analytics : **Improved operational efficiency for the FDA CDER RAPID Project** by redesigning and development of E2B process for electronic conversion of Adverse Event data from the RAPID database into the FAERS system. Utilized converged datasets leveraging a new Cloud architecture, such as Hadoop, Accumulo, Hive, and Amazon Web Services in development of efficient analytics platform for Phase II of the project

***Technology Stack:** Documentum, AtTask Panorama, SOA, Data transformation, Integration layers, Hadoop, Accumulo, Hive, Amazon Web Services, Big Data analytics*

Senior Professional Staff - Government Team

July 2013 - May 2014

Johns Hopkins University Applied Physics Laboratory | Laurel, Maryland

DOD AMDR Contract - Navy's Next Generation Integrated Air and Missile Defense Radar

- DOD Government Team Leadership : **Part of DOD government team and Software Working Group** managing \$1.6 Billion AMDR contract for Navy's integrated air and missile defense radar system
- Mission-Critical Oversight & Agile Implementation : **Provided oversight for DOD radar development** while implementing hybrid agile methodology with CMMI Level 5, supporting multiple concurrent development efforts and supervising inter-team coordination

***Technology Stack:** Agile methodologies, CMMI Level 5, SCRUM, Government contracting, Radar systems*

Software Engineer Lead

August 2010 - July 2013

CACI International | Alexandria, Virginia

Omega e-Discovery Platform - Department of Justice

- e-Discovery Platform Development : **Led development of Omega e-Discovery platform** for litigation support, pioneering Big Data solutions using Solr and Hadoop for Department of Justice with 50+ active cases
- Technical Leadership : **Provided Technical leadership** to the cross-functional Omega team in implementing and integrating the new Omega Lite application with the Solr search engine
- Database Administration & Performance : **Database Administrator support for ERIC database holding 1.3 Terabytes of data**, utilized Oracle Text CTXCAT index and CATSEARCH query operator for mixed query performance
- Portal Development : **Architected and designed the Omega Liferay Portal** to serve as a central source of case and administrative information for the entire user community

***Technology Stack:** Solr, Hadoop, MapReduce, Liferay Portal, Oracle, VPD, JSR 286, dbdeploy, Big Data, e-Discovery, Litigation support, Oracle Text, NetOwl Text Mining, NLP, Java, Spring, JSP, GWT, JDBC, HTML, CSS, Oracle Identity Manager, Oracle Advanced Security*

Lead Developer/Database Administrator

October 2007 - July 2010

SRA International | Rockville, Maryland

Federal Government Projects - Multiple Agencies (NIH, NIAID, NCI)

- **Big Data Analytics & Bioinformatics : Lead Developer for ERIC BRC Portal** - bioinformatics research platform with 1.3TB database, and **Senior Software Engineer for TCGA** (The Cancer Genome Atlas) genomic data portal
- **Genomic Data Portal Development : Senior Software Engineer for TCGA Data Coordinating Center (DCC)** and TCGA Data Portal, implemented new features and bug fixes using Java (Spring, JSP, Google Web Toolkit, JDBC)
- **Database Administration & Performance : Database Administrator support for ERIC database holding 1.3 Terabytes of data**, utilized Oracle Text CTXCAT index and CATSEARCH query operator for mixed query performance
- **Portal Development : Designed and implemented solutions** to integrate bioinformatics tools into ERIC web portal, created JSR 286 compliant secure custom shared calendar portlet

Technology Stack: Oracle, Oracle Text, NetOwl Text Mining, NLP, Bioinformatics, Portal development, Database administration, Java, Spring, JSP, GWT, JDBC, HTML, CSS, Oracle Identity Manager, Oracle Advanced Security, Oracle Warehouse Builder, ADDM, SQL Tuning Advisor

Senior Software Engineer

March 2003 - October 2007

Tata Consultancy Services | San Antonio, Texas

USAA Auto Policy Administration System - CMMI Level 5 Development & Legacy System Re-engineering

- **CMMI Level 5 Development : Worked in CMMI Level 5 project** following mature development process using IPMS (Integrated Project Management System) to ensure defect-free code through Integration and Unit testing
- **Legacy System Re-engineering : Replaced 30-year old mainframe Auto Policy system** with multi-car capability, online front-end, and separate Quote system, successfully migrating from stovepipes to component-based architecture using IBM MQ-Series messaging, J2EE, IBM WebSphere, and Oracle database

Technology Stack: Java, J2EE, Oracle, CMMI Level 5, IBM WebSphere, IBM MQ-Series, S/390 mainframe, COBOL, JCL, IBM CICS, IBM WCM, JSP, HTML, XML, JavaScript, Legacy system modernization, Event-driven architecture, Insurance systems

EDUCATION

M.S. in Information Technology, Specializing in Database Systems Technology

2008 - 2011

University of Maryland Global Campus

Activities and societies: Upsilon Pi Epsilon

B.E., Computer Science and Engineering

1998 - 2002

Bharathiar University, India

THOUGHT LEADERSHIP & PUBLICATIONS

- **The Tectonic Shift to Agentic Software** : Authored a LinkedIn article (Aug 9, 2025) titled "**The Tectonic Shift to Agentic Software: Building Software That Thinks**," exploring the evolution from traditional applications to intelligent agent systems. The article traces the progression from LangGraph's structured workflows to Strands' adaptive intelligence and AgentCore's enterprise-ready infrastructure, drawing on hands-on experience building agentic AI systems at AWS
- **Vectors Are the Language of AI** : Authored a LinkedIn article (Aug 2, 2025) titled "**Vectors Are the Language of AI: Rethinking Search in the GenAI Era**," explaining the shift from keyword-based search to vector-based semantic search and Retrieval-Augmented Generation (RAG). The article draws on experiences migrating full-text search systems to Apache Solr/Hadoop and discusses why embeddings and vectors are fundamental to modern AI search
- **Technical Blog** : Published comprehensive technical analysis on AI agent frameworks, system architecture, and implementation strategies at jeyanthithangiah.com, demonstrating deep expertise in AI/ML technologies and practical implementation guidance