

# VINAY BABU THOTA

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## Senior Application Software Development Manager

Cloud-Native Architecture | AI-Driven Integration | Mission-Critical Systems

## PROFESSIONAL SUMMARY

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Senior Software Development Manager/Solution Architect/Lead Engineer with 25+ years of experience delivering large-scale, mission-critical, and cloud-native systems across transport, security, IoT, and government domains.

Hands-on engineering leader with deep expertise in microservices, event-driven architecture, AWS cloud, and enterprise integration, with a proven track record of scaling and managing distributed teams (15+ engineers) and driving end-to-end delivery.

Cloud-agnostic architect with experience in scalable SaaS platforms, API ecosystems, and real-time systems. Recently focused on Generative AI, RAG, and Agentic AI architectures, building intelligent and future-ready enterprise solutions.

## CORE SKILLS

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### Architecture & Design

Microservices, Event-Driven Architecture, SOA, Distributed Systems, SaaS, High Availability

### Cloud & DevOps

- AWS (EKS, EC2, RDS, S3, VPC), Kubernetes, Docker, CI/CD, Jenkins, GitLab, Observability
- Observability: ELK Stack, Prometheus, Grafana, Application Insights

### Programming & Frameworks

- Java (J2EE, Java 17/21), Spring Boot, Spring Cloud, Spring Security
- Hibernate, JPA, RESTful Services, Reactive Programming
- Python (Fast API, AI/ML integration), Node.js
- Frontend exposure: Angular, working knowledge of modern frontend architectures (React ecosystem, SPA design)
- API Design: REST, OpenAPI, API Gateway Patterns

### Integration & Messaging

- Kafka, JMS, ActiveMQ, REST, SOAP, MQTT, OPC-UA

### Databases

- MS SQL, PostgreSQL, Oracle, DB2, MySQL, MongoDB, Redis

### AI/ML & GenAI

- Retrieval-Augmented Generation (RAG), LLM Integration (OpenAI, Ollama, Local LLMs)
- LangChain, Vector Databases (FAISS), Embeddings
- Agentic AI Architectures, Multi-Agent Systems, MCP (Model Context Protocol)
- Applied AI: Computer Vision (OpenCV), Facial Recognition Systems

### Tools and Engineering Practices

- Version Control: Git (GitHub, GitLab)
- Build & Quality: Maven, Gradle, SonarQube
- Testing: JMeter, Selenium, Test Automation Frameworks
- Agile, Scrum, TDD, Code Reviews, Engineering Governance

## **Compliance & Security**

- Security Architecture: OAuth2, OIDC, JWT, Keycloak, RBAC
- API Security, Encryption (at-rest & in-transit), Secure Coding Practices
- Vulnerability Management: SAST, DAST, Dependency Scanning
- Compliance: IM8 (Singapore Gov), ISO 27001, IEC 61508 / SIL2
- Audit, Logging, and Secure System Design for Critical Infrastructure

## **PROFESSIONAL EXPERIENCE**

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### **Senior Application Software Development Manager**

*ATT Systems, Singapore | Jun 2023 – Dec 2025*

- Led architecture and delivery of mission-critical platforms (ISMS 2.0, AMANDA, SFA SaaS, SCDF systems) supporting transport and security domains, ensuring compliance with IM8, ISO 27001, and SIL2
- Managed 3+ cross-functional teams (~15 engineers) across Singapore and India, improving delivery efficiency and reducing defects through engineering governance and code quality practices
- Architected cloud-native microservices platforms on AWS (EKS, RDS, S3), enabling scalability, high availability, and fault tolerance
- Drove modernization from legacy systems to microservices and event-driven architecture, improving system scalability and maintainability
- Implemented DevSecOps practices including CI/CD pipelines, SAST/DAST, and secure coding standards, strengthening system security posture
- Acted as primary technical interface for clients, leading solution design, integration discussions, and stakeholder alignment

### **Application Software Development Manager**

*Sopra Steria Asia, Singapore | Jun 2022 – May 2023*

- Led architecture for ITransport 2.0, a large-scale event-driven microservices system
- Managed a 35-member engineering team across backend, frontend, and integration
- Designed and implemented REST APIs and secure integration patterns
- Delivered full project transition to ST Engineering, including codebase and documentation
- Implemented Agile, CI/CD, and quality gates to improve delivery efficiency

### **Project Manager / Interface Manager / Software Development Manager**

*ST Engineering (via P-Serv) | Jun 2021 – Jun 2022*

- Designed interface architecture for Maintenance Management Systems (MMS)-IBM Maximo
- Led integration using REST, SOAP, and SFTP protocols
- Developed interface specifications for rail systems (LTA projects)
- Ensured secure, fault-tolerant data exchange and compliance

## **Lead Software Engineer / Software Development Manager**

*NCS, Singapore / Oct 2018 – Oct 2019*

- Led Video Analytics Platform (VAP) with AI/ML capabilities
- Led end-to-end integration VAP with external VA Vendors and VMS Systems

## **Project Manager / Software Development Manager**

*Tyco / Johnson Controls, Singapore / Jul 2008 – Mar 2018*

- Delivered SIL2-certified ITPMS system (IEC 61508) for expressway tunnels
- Led end-to-end SDLC using V-Model, ensuring safety-critical compliance
- Managed multi-year large-scale system delivery
- Oversaw testing, certification, and deployment processes

## **Earlier Roles**

- Java Architect – VLS Systems (USA)
- Senior R&D Engineer – ASophia Asia, Singapore
- Software Engineer – Eins Technology, Singapore
- Senior Programmer – Infoquest, Singapore
- Early Engineering Roles – India/Kuwait

## **EDUCATION**

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- Graduate Diploma in Information Communication Technology – Nanyang Technological University, Singapore -1988-1992
- Bachelor of Technology (Mechanical Engineering) – Kakatiya University, India -2003-2004

## **CERTIFICATIONS**

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- AWS Certified Solutions Architect – Associate (2026–2029)
- PMP (Project Management Professional) – Valid till 2028
- PMI-ACP (Agile Certified Practitioner) – Valid till 2029
- AI Professional Certification – DIAT, India
- Data Science Specialization – Johns Hopkins University

## **KEY ACHIEVEMENTS**

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- Delivered SIL2-certified mission-critical systems (ITPMS, traffic management system)
- Led large-scale cloud transformation and modernization initiatives (SFA)
- Designed and Delivered event-driven architectures for Traffic and transport systems
- Successfully managed cross-border teams and enterprise stakeholders
- Speaker on AI & Computer Vision in Transportation Systems (2025)

## **ADDITIONAL INFORMATION**

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- Singapore PR (Available immediately)

- Open to Software Manager/Engineering Manager /Solution Architect /Lead Software Engineer/  
Leadership roles