

SUDARSHANA KARKALA

Principal Architect – eMobility, GenAI & Agentic AI Systems

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SUMMARY

eMobility & GenAI / Agentic AI Architect with 20.5 years of experience designing and delivering **Large-scale mobility, Automotive, and AI-driven Engineering Platforms**. Strong expertise across EV Battery systems, Software-Defined Vehicles (SDV), Telematics, IoT, Automotive Cybersecurity, and Mobile + Cloud architectures.

Currently focused on **architecting GenAI and Agentic AI** systems for EV Battery diagnostics, predictive maintenance, and Automotive engineering workflows.

Technologist and consultant advising EV startups and enterprises on AI-driven mobility platforms, secure automotive software, and production-grade mobile and cloud architectures.

Known for translating complex business problems into scalable, secure, and production-grade AI and mobility architectures.

CORE EXPERTISE

- **AI & Agentic AI Architecture:** Generative AI, LLM-based systems, Agentic AI architectures, RAG
- **eMobility & EV Systems:** EV Battery Diagnostics, BMS, Safety & Reliability
- **Automotive Software:** SDV, Telematics, OTA concepts, BLE / CAN integration
- **Mobile & Cloud Architecture:** iOS, Android, AWS, Cloud-native systems
- **Automotive Cybersecurity:** Secure mobility platforms, UN R155 / R156 awareness
- **Architecture, Leadership & Consulting:** System design, solution architecture, technical training

CURRENT ROLE

Principal Architect – eMobility, GenAI & Agentic AI (Consultant)

iTelematics Software Private Limited | Bengaluru | Dec 2024 – Present

Architecting AI-driven and software-defined mobility platforms across EV, automotive, and connected systems.

Key Responsibilities

- Architect **EV Battery diagnostic** and **safety systems** using AI-driven analysis pipelines.
- Design **GenAI and Agentic AI architectures** for intelligent fault analysis, predictive maintenance, and engineering decision support.
- Lead solution architecture for **SDV platforms**, including telemetry, diagnostics, cybersecurity, and mobile integration.
- Design **production-grade mobile applications (iOS/Android)** for EV control, diagnostics, and telematics.
- Collaborate with embedded, cloud, and AI teams to deliver scalable, secure EV software platforms.

Client Engagements

- **Schaeffler India:** GenAI for Automotive & Embedded Engineering workflows
- **Crompton Greaves Consumer Electricals, Mumbai:** Smart Home IoT – iOS Architecture & BLE-based systems
- **Skill-Lync:** Trainer & Consultant – iOS, GenAI, Agentic AI

PREVIOUS WORK EXPERIENCE

Sr. Engineering Manager – Mobile Apps (iOS, Android, EVSE, IoT, Cloud)

Enphase Energy | Bengaluru | Jul 2021 – Dec 2024

- Led and managed **30+ engineers** delivering large-scale solar, EVSE, and IoT mobile platforms.
- Architected and executed the **Enphase Installer Toolkit App** (4.3★ App Store rating).
- Delivered ITK with EVSE, IQ Battery, provisioning, validation, and commissioning workflows.
- Drove architectural modernisation across mobile and cloud systems, improving reliability and scalability.

Engineering Manager – Mobile Security & Telematics

McAfee Software | Bengaluru | Oct 2011 – Jul 2021

- Led end-to-end development of **McAfee Mobile Security (iOS/Android)** with 4.7★ rating.
- Designed Mobile security, VPN, Secure vault, Location tracking, and telemetry systems.
- Delivered telematics security features, analysed driving patterns and mobility data.

EARLIER CAREER (Mobile & Platform Engineering) | 2005 – 2011

- Senior Software Engineer / Technical Lead roles across **mobile platforms (iOS, Java, J2ME, WinCE)**.
- Designed and delivered consumer and enterprise mobile applications for **telecom, travel, and digital media** clients.
- Built strong foundations in **distributed systems, mobile security, client-server architecture, and performance optimisation**.

AI & AGENTIC AI INITIATIVES (IN PROGRESS)

- **EV Battery Diagnostic Agent** : Architecting and prototyping a multi-agent AI system for battery fault detection, safety risk assessment, and corrective recommendations.
- **Automotive Engineering AI Copilot** : Designing an AI-powered engineering assistant using RAG and agent orchestration to support diagnostics, analysis, and decision-making.

PRODUCT INITIATIVES

- Founder & Principal Architect, **EV.ENGINEER™** — An **AI-powered EV diagnostics & engineering assistant** for battery analysis, SDV workflows, and automotive problem-solving.
- Co-Founder, **Thasmal Infotech** — Advising EV startups and enterprises on AI-driven mobility platforms, automotive software architecture, and scalable mobile + cloud systems.

EDUCATION & CERTIFICATIONS

- **BE – Information Technology**, National Institute of Technology Karnataka (NITK), Surathkal
- **Electric Vehicle Engineering & Development**, IIT Madras (CODE), 2025
- **Certified Scrum Product Owner (CSPO)**
- **Generative AI**, Google Cloud Skills Boost

TRAINING & INDUSTRY CONTRIBUTION

- Trained **200+ engineers** on EV systems, GenAI, Agentic AI, mobile & cloud architecture
- Delivered corporate and academic programs on **EV Battery Software** and **Automotive AI**

AVAILABILITY

Open to **Principal Architect, AI Architect, and Strategic Consulting** roles in **eMobility, Automotive AI, and AI-driven engineering platforms**.