

SAMARTHA VENKATRAMANA



Embedded Android OS | Web/Mobile Apps | Agentic AI | AI Generalist

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Profile: <https://www.linkedin.com/in/samarthako29/> | **Github:** <https://github.com/SamarthaKV29>

Websites: <https://getsam.dev/> | [Fast Kode LLC](#) | [Flash Digital Studios](#) | [AI Transformation](#)

Senior software engineer and technical leader with 8+ years building useful products across agentic AI, embedded Android/AOSP, web, and mobile. Combines hands-on engineering, from architecture and device bring-up through deployment, with team leadership, hiring, mentoring, and cross-functional delivery. Known for turning complex technical concepts into clear options that help stakeholders make decisions and teams move forward. Fluent in English, Hindi, and Kannada.

TECHNICAL SKILLS

Languages	Kotlin, Java, TypeScript, JavaScript, Bash Script, SQL, HTML/CSS, C/C++, Rust, python,
AI Tools	Copilot (Claude, Grok, Gemini,...), Prompt Engineering, Flow (Veo/Omni), Gemini AI Pro, AI based flowchart & diagram generation, Antigravity, AI Agent Orchestration, Agent Management, Parallel Workflows, Agentic Development
Android & AOSP	Flutter, REST API, System Services, AIDL, UI/App development, Unit & Integrated testing, mockk, GNU Makefiles, init.rc, build system, OTA, SEPolicy, Treble, GKI, GPIO, SystemProperties, Performance
Linux & OS	Server Administration/Management, Debugging/Trace, Networking, logging, sys fs, Linux (Ubuntu, Android etc.), Windows, Mac
Web & Cloud	MQTT/IOT, Apache, NodeJs, MongoDB, React JS, AWS
Practices & Tools	Agile, MVC, TDD, Rapid Prototyping, BSP bring up, Jira management, Software architecture, Use Case diagrams, Technical Documentation, Focussed Research, Jenkins, Gerrit, GIT, SSH, Putty, VS Code, Android Studio, ADB, Figma, Grafana Charts

EXPERIENCE

Software Engineer III - Android OS - Flock Safety Group, Atlanta, GA

[05/17/2021 to 05/11/2026]

- **Optimized** Picard power and telemetry by replacing the legacy GOAT service with Android's HardwarePropertiesManager, reducing CPU overhead and phone-home request time by about 5 seconds per request.
- **Engineered** Delta OTA updates for A/B devices, reducing payload sizes and enabling fail-safe background updates across the fleet.
- **Led** a year-long Auth0 rollout across 80,000 devices, replacing a fleet-wide shared key and delivering the AIDL service/controller, factory provisioning, monitoring, and QA enablement.
- **Resolved** concurrency deadlocks in the Auth0 service controller, stabilizing token refresh and self-provisioning workflows across thousands of devices.
- **Established** an Atest boilerplate for Flock Platform SDKs, enabling automated integration testing and reducing reliance on manual test applications.
- **Accelerated** AOSP development by restructuring incremental Picard OS builds and QDL image scripts, cutting developer build times by 20-30 minutes; generated Flock Service SDK documentation with Droiddoc.
- **Expanded** the Power Service SDK with CYPD support for powered and unpowered devices and kernel watchdog APIs; added eMMC wear diagnostics to flag hardware degradation before deployment.
- **Hardened** Android security by auditing SELinux policy, enforcing protected-broadcast and serial-console controls, and preserving factory validation; developed modular SEPolicy and guided engineers on compliant changes without bypassing neverallows.

- **Delivered** custom AOSP product bring-up across Android 10 and 13, including dynamic-partition OTA support; ported the Google updater sample from Java to Kotlin and added unit and on-device tests.
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Team Lead - BL Healthcare Inc., Foxboro-Mansfield, MA

[12/31/2020 to 05/07/2021]

- **Led** application and web engineering across distributed teams, shipping weekly releases with the CEO and aligning delivery to client priorities.
 - **Delivered** remote application and OS updates and led Web API development to improve integration across product teams.
 - **Set** coding standards, reviewed code, and coached engineers on testable, maintainable software while coordinating product launches and hardware stabilization across India and China.
 - **Managed** server operations and cost optimization to support reliable product delivery.
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Software Engineer - BL Healthcare Inc., Foxboro, MA

[12/31/2018 to 12/31/2020]

- **Brought up** upgraded tablet hardware and ported applications and services, stabilizing new product iterations across Android and embedded components.
 - **Integrated** and optimized video-conferencing technology, improving the experience on tablet devices.
 - **Ported** the product to TV hardware, integrated new and legacy Bluetooth peripherals, and improved application UI/UX.
 - **Managed** both Android application and AOSP codebases, coordinating changes through deployment to client devices.
 - **Strengthened** product security through penetration testing and remediation; replaced static-IP SIM debugging with SSH tunneling.
 - **Recruited** and mentored engineers, partnering with the CEO on technical decisions and long-term product stability.
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Tech Lead Consultant - Pill Matics, Franklin, MA

[03/01/2025 to 09/17/2025]

- **ESP32 Initiation:** Create bare bones software based off of the requirements for this microcontroller that will be the pill dispenser's brain.
 - **Device Architecture:** Establish a modular, robust and future proof architecture for the basic functions of this device
 - **Infrastructure Re-use:** Repurpose and reuse existing BL Healthcare infrastructure to support new device and protocols
 - **AI Copilot Leveraged:** Leverage Copilot to put together the initial codebase and touch ups based on requirements. More than 20,000 lines generated by AI across 5 features, providing a foundation for future work.
 - **Infrastructure Migration:** Planned and executed the migration of existing architectural concepts from sister company to new org. Cut the time to prod by 50% by using Claude code to review, discuss, architect and reorganize the best of both worlds.
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Fractional CTO - SDP Flash Info Tech, Bangalore, India

[02/15/2022 to 05/11/2025]

- **Advise** clients on technical direction and delivery, aligning engineering solutions with business requirements.
 - **Support** technical hiring through candidate sourcing, interviews, job-posting strategy, and hiring decisions.
 - **Create** practical documentation for employee onboarding, AOSP tools, startup planning, NDAs, and client joint ventures.
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Tech Lead Consultant - BL Healthcare, Franklin, MA

[05/07/2021 to 09/17/2021]

- **Mentored** incoming engineers and advised technical decisions after transitioning from the team, helping sustain established engineering standards.
- **Researched** telemedicine and remote patient monitoring technologies, replacement components, and peripherals to support product continuity.

EDUCATION

Master of Computer Science

[May 2018]

University of Massachusetts Lowell

Relevant Courses: Internet & Web systems, Algorithms, Computer Graphics, Human Computer Interaction, Compiler Construction.

Bachelor of Technology, Computer Science and Engineering

[June 2015]

Sir M. Visvesvaraya Institute of Technology (Affiliated to VTU), Bangalore, India.

Relevant Courses: Electronics & Logic Design, OOPs, JAVA, Data Structures, Database, Unix System Programming, Web Development
