Rhaveen Saravanan



Software Engineer | C++, Python, Android Automotive

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SUMMARY

Software engineer with 7 years of modern C++ and Python on automotive platforms at Bosch and IAV, from HAL and middleware to Android Automotive apps. Worked directly with the customer's team in China and with engineering teams in Germany and India. Department AI point of contact at IAV, running AI-tool workshops for colleagues; built a Claude tool-use agent with a claim verifier in a 2026 hackathon.

EXPERIENCE

IAV GmbH, engineering services for car makers — Berlin, Germany
Software Engineer — *Jan 2023 – Present*

Vehicle telemetry for Android Automotive and the software-defined vehicle — *Jun 2026 – Present*

- Developed the telemetry app in Kotlin against the Android Car API on virtual targets, and fixed Car API integration issues on the target image.
- Set up the AAOS/SDV development environment so other developers can take it over easily, and wrote the setup and handover guides used across the project.
- Set up DevOps for the project: automatic build checks and a mandatory review on every merge request.
- Presented progress to the team in Germany and India in regular show-and-tell demos.

AI task force, department point of contact

- Ran workshops and talks on AI tools for code generation, refactoring and log-based debugging.
- Department contact for AI tools and MCP integrations; solved setup issues and escalated platform issues and improvement ideas to IAV's AI engineering team.
- Built an AI helper that drafts GoogleTest cases and shared prompts with the team; used Claude Code and Codex daily for tests, refactoring and logs.

Universal Tuner Platform: analogue, digital and internet radio in one software module — *Jan 2023 – May 2026*

- Developed Tuner HAL and Tuner Core in C++ on Android Automotive (FM, AM, DAB, HD Radio, IP streaming) as part of an international SAFe team.
- Owned the character-set converter in the DAB radio for the Chinese market (100,000+ characters) from requirement to delivery, working directly with the customer's team in China on the standard and the mapping.
- Designed and developed ConfigGenerator, a Python tool that generates tuner middleware configurations and cuts manual configuration work.
- Maintained the FM and DAB metadata path to the UI and fixed station-name, radio-text, station-list and tuner info screen defects.
- Designed the FM configuration and supported the Tuner HAL delivery; contributed to DAB/FM linking, the station-list manager and background scanning.
- Developed tunnel detection, which switches from broadcast to internet radio in tunnels.
- Fixed race conditions and deadlocks in the Tuner Core, moved work onto worker threads and reviewed code for thread safety.
- Worked test-first with GoogleTest, mocks and stubs; built an HMI test app to test the tuner library without the production HMI.
- Analysed tuner-library performance with FlameGraph and lowered CPU load by optimising log levels; used Valgrind and sanitizers for memory analysis.
- Built for the target chip and tested on target hardware, including live tests; analysed field-test logs and fixed the defects with the test and field-test teams.
- Wrote MISRA- and ASPICE-compliant code, handled static-analysis findings and supported platform compliance testing (Azure DevOps CI/CD, code review).
- Helped onboard new colleagues from the India team into the tuner code base and tooling.

Robert Bosch — Coimbatore, India
Senior Software Engineer (promoted from Software Engineer) — *Oct 2018 – Dec 2022*

- Built a generic zone layer used by all HMI applications, which cut zone-related defects.
- Managed the Apple CarPlay certification of the HomeMenu HMI, working directly with the car maker's team.
- Developed and maintained the HomeMenu HMI application in C++ for car infotainment (GENIVI, MVC), with GoogleTest unit tests.

- Added multi-threading and memory-efficient algorithms to HomeMenu, making the app faster and its GUI assets smaller.
- Built Python tools that automated recurring workflows across the department.
- Reviewed code and mentored junior engineers; worked in Scrum with teams in Germany and India.
- Won a national-level internal automation hackathon.

PROJECTS

Agentic Investor Updates, hackathon, team of 2 | github.com/rhaveen-sa/Agentic-Investor-Updates *Oct 2026*

- Flutter app in which a Claude agent with 10 tools turns a startup's weekly data into a facts ledger and drafts the monthly investor update from it.
- Built the agent tool-use loop and the full demo: numbers are computed in code, a separate verifier blocks unsupported claims, and messages need human approval.

GrokBot, personal multi-agent experiment *2026*

- Built a coordinator bot and 7 specialist bots that share Markdown context files, hand off tasks through an inbox and push to a private GitHub repo nightly.

Canary Go, IAA BYOD Hackathon, team of 2 | github.com/rhaveen-sa/iaa-byod-hackathon-2026 *Sep 2026*

- Built Python SDV prototypes on digital.auto; the pitched one, Canary Go, turns simulated gas and camera data into vehicle alerts.

SKILLS

AI and LLMs: Claude API (tool use, agent loops), Claude Code, Codex, ChatGPT, MCP, multi-agent workflows, AI test generation
Languages: C++ (C++17), Python, Kotlin, Dart, Bash
Android and automotive: Android Automotive OS, AOSP, Car API (CarPropertyManager), Jetpack Compose, Cuttlefish, Tuner HAL, DAB/FM/RDS, GENIVI
Debugging and quality: ADB, logcat, Android Studio, Valgrind, sanitizers, FlameGraph, GoogleTest, TDD, static analysis, MISRA, ASPICE
DevOps and tools: Git, GitLab CI/CD, Azure DevOps, Jira, Confluence, Linux, Gradle
Ways of working: SAFe, Scrum, code review, mentoring, international teams (Germany, India, China)

EDUCATION AND OTHER

B.E. Electronics and Communication Engineering, Sri Krishna College of Engineering and Technology, Coimbatore
Certificate: Generative AI with Large Language Models, DeepLearning.AI and AWS (Coursera)
Languages: English (fluent), German (A2, B1 in progress), Tamil (native)
Volunteering: Berliner Tafel (food bank), Berlin