Sai Sree Kartheek Adivi

Embedded Software Engineer | Linux Kernel Developer

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Summary

Skilled embedded software engineer with 5+ years of experience designing BootROM, FreeRTOS firmware, and Linux device drivers. My goal is to combine my experience in firmware and system-level skills to make meaningful contributions to the kernel and related projects and share my work openly to support free, community-driven technology.

Technical Skills

Languages	C, C++, Rust, Python, Bash, Qt QML, Assembly
Embedded	Linux Kernel, Device Drivers, FreeRTOS, BootROM, Yocto, Debian Packaging
Hardware	ARM Cortex-A/R/M, TI Sitara AM6x, Xilinx FPGA, STM32, BeaglePlay
Tools	Git, Jenkins, Trace32, Lauterbach, Make/CMake, Bitbake

Experience

Senior Software Engineer
Jul 2024 - Present

Texas Instruments — Bengaluru

- AM62L Device Lead: Responsible for monitoring and maintaining daily health status on both upstream and TI Linux kernels.
- Implemented and upstreamed the Linux device driver for TI K3 UDMA for AM62L (low cost variant).
- Represented TI in the Civil Infrastructure Platform (CIP) Kernel Workgroup, enabling Super-LTS kernel support for TI AM62x.

Software Engineer
Mar 2022 - Jun 2024

Texas Instruments — Bengaluru

- Designed the Out-of-Box (OOB) experience for TI Sitara MPU (AM6x) using Yocto and Debian SDKs.
- Maintained meta-ti and meta-arago Yocto layers; implemented CI/CD pipelines using Jenkins.
- Developed Qt5-based GUI applications like 'EdgeAI Gallery' and 'TI Apps Launcher' for customer demonstrations.
- Implemented build infra for TI Debian images and maintained TI's own PPA.

Embedded Software Engineer
Nov 2019 - Mar 2022

SoCtronics Technologies — Hyderabad

- Developed startup code and FreeRTOS ports for Cortex-R and Cortex-M cores.
- Developed drivers for UART, I2C, CAN, SPI, and PCIe on Xilinx VCU/ZCU FPGA platforms.
- Enabled Bluetooth HFP/HSP profiles on i.MX 8M Mini using PulseAudio and BlueZ stack.

- Worked on SPI Flash Bootloader development and Android Audio/Sensors controller for Raspberry Pi.

Education

Bachelor of Computer Applications Jun 2025 - Present
University of Mysore — Online

Diploma in Electronics & Communication Jun 2016 - May 2019
Andhra Polytechnic — Kakinada

Certifications

Linux Kernel Driver Development May 2024
https://bootlin.com/doc/training/certificates/2024/linux-kernel-beagleplay/sai-sree-kartheek-adivi-4f451219de24f3a229355788be97a1918140be92/

Embedded Linux System Development May 2024
https://bootlin.com/doc/training/certificates/2024/embedded-linux-beagleplay/sai-sree-kartheek-adivi-04238d818b109a3b29d720e2721655e3da1dd439/

Talks & Publications

Beyond Yocto: Exploring Debian for Embedded Linux Development Jul 2024
https://youtu.be/7nnAC5IECKO

Awards

Customer Impact Champion May 2024