

Ganga Ram Jaiswal

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SUMMARY

Accomplished software engineer with over seventeen years of experience in various domains; **Firmware, Linux kernel, System Security, RTOS, device drivers and Middleware**. Strong team player with ability to lead a project, can also handle a project single handedly. Consistent performer in every domain worked so far, quick learner, and always willing to accept new challenges. Important contribution in architecting, designing, developing, and reengineering various software solutions.

CORE COMPETENCIES

- ◆ Performance optimization and benchmarking
- ◆ DSP Firmware development (Deep learning accelerator)
- ◆ Linux kernel and device driver
- ◆ System security
- ◆ Embedded system software architecture, design, and development
- ◆ Debugging of system level issues
- ◆ Good analytical and problem-solving skills
- ◆ Data structure

TECHNICAL SKILLS

- ◆ **Programming Languages:** C, C++, Python, Cadence Tensilica Intrinsic (VLIW, SIMD)
- ◆ **DSP (Cadence Tensilica Vision P6) Firmware:** ONNX/Cafe2/PyTorch/TensorFlow operators
- ◆ **Security:** Content protection, Authorization, CAS, DRM, Secure boot loader, memory protection, Open SSL, SHA, RSA, AES, TDES, RAM protection, JTAG protection, I-Fetch Monitoring, TEE, Secure Datapath etc
- ◆ **Linux:** Kernel Internals, Module/Application Programming, Memory Manager, Char Devices, multi-threading, interrupt handling, POSIX
- ◆ **RTOS:** OS21

EXPERIENCE

- ◆ AI Software Architect, **Intel**
BANGALORE, INDIA [FEB, 2018 – NOW]
- ◆ Staff Engineer, **STMicroelectronics**,
Greater NOIDA, INDIA [JAN, 2007 – FEB, 2018]
- ◆ Software Engineer, **Conexant Systems**
NOIDA, INDIA [MAR, 2006 – JAN, 2007]
- ◆ Development and Design Engineer, **TATA ELXSI Ltd.**
BANGALORE, INDIA [MAR, 2005 – MAR, 2006]

EDUCATION

- ◆ **Post Graduate Diploma, Embedded System Design**
ACTS, C-DAC Pune, IN – [2005]
Cumulative Score: 77% (3rd Position across the batch)
- ◆ **Bachelor of Technology, Computer Science and Engineering**
U.P. Technical University LUCKNOW, IN – [2004]
Cumulative Score: 70.4%

ACHIEVEMENTS

- ◆ Intel Global Division level individual award for customer support and ninja optimization of caffe2 kernels
- ◆ Intel site level team award for delivering solutions on time in very dynamic situation
- ◆ ST division level "PAT Award" for dynamic ad-insertion.
- ◆ ST division level "You Made a Difference Award" for various activities.
- ◆ ST Site level Best Project award for Adobe AIR Flash Access DRM.

MAJOR PROJECTS HANDLED

- ◆ Firmware development for Deep Learning Accelerator.
- ◆ User driver development for Verisilicon media decoder.
- ◆ Secure SDK and security certification stack for various ST SoCs.
- ◆ Hardware acceleration for Adobe Flash Access DRM.
- ◆ OS abstraction layer for Linux and OS21.
- ◆ DirecTV and Cisco CDI HAL Linux driver design and development for STB.
- ◆ Dynamic ad insertion in STB
- ◆ Infrastructure driver development.
- ◆ Device integration for Dual HD decoder SoC.

KEY ACCOMPLISHMENTS

- ◆ Lead design of data loader for deep learning to achieve targeted performance
- ◆ Design and development of user driver for media decoder.
- ◆ Development and optimization of deep learning hardware accelerated kernel modules and scheduler for the kernel modules on proprietary OS (Master firmware).
- ◆ Reviewed and analyzed customer requirements for various products and participated in low level driver design discussions. Achieved third party certification for various middle ware and security stack on different ST SoCs.
- ◆ Development and integration of secure boot loader, memory encryption, key provisioning, JTAG protection, RAM encryption, instruction fetch monitoring, TS descrambling, content protection, DRM, Key ladder management etc.
- ◆ Designed and Developed Adobe Flash Access DRM module using Open SSL and hardware acceleration and achieved Adobe certification.
- ◆ Developed and maintained secure SDK stack modules for certification for ST SoCs from different security vendors.
- ◆ Designed and developed Cisco/DirecTV CDI HAL drivers for De-mux, Memory, Video, Temperature Sensor.
- ◆ Lead Cisco DirecTV CDI HAL driver development from Noida site for Cannes Wi-Fi.
- ◆ Key contribution in achieving production level maturity of XTV for Cannes Wi-Fi, Palma, and Cardiff platforms.
- ◆ Single handedly designed and developed software solutions for Ad-smart (Live ad replacement) and 4-Simultaneous recording from IP with only two on chip h/w FIFO.
- ◆ Participated in board bring up, u-boot configuration, performance improvement, and memory optimization.
- ◆ Designed and implemented customizable application for STB power management with active standby, passive standby, and various controller passive standby features.
- ◆ Gathered requirements from different module owners and implemented infrastructure devices (data injection and memory manager)
- ◆ Device integration for a dual HD decoder platform on OS21 and Linux. Implemented features like multi-TV (Dual decode), PIP, dual GUI etc.
- ◆ Eased debugging customer issues by implementing dynamic tracing and PROC FS for Cisco CDI devices.

PERSONAL

Date of Birth: 30th Nov 1981

Marital Status: Married