Vysakh P Pillai

Technical Staff Software Engineer
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Last Updated: March 20, 2024

PROFESSIONAL SUMMARY

Experienced Technical Staff Engineer and Secure Systems Architect with over 14 years of comprehensive experience in the semiconductor industry. Demonstrated expertise in designing and validating complex systems, specializing in System-on-Chip Software, System Security, Device Drivers, Python, C, System Integration, DevOps and Cloud architectures. Proven track record of leading cross-functional teams and successfully driving projects from inception to implementation. Possess a strong educational background with a Master's Degree focused on Digital design and embedded systems.

WORK EXPERIENCE

Technical Staff Engineer – Software
Microsemi Storage Solutions Ltd - A Microchip Company, Burnaby, British Columbia
April 2022 - Present

– Spearheading the creation of pre-silicon System-on-Chip (SoC) software solutions, leveraging HW and SW emulation techniques for first-generation RISC-V based High-Performance SoC.
– Developed the device QEMU model, accelerating pre-silicon software development.
– Architected innovative security solutions and enhanced HW capabilities for system security.
– Developed reliable system ROM code and secure boot solutions.
– Managed the implementation of multi-core, partitioned, multi-instance Linux solutions, encompassing kernel customization, driver development, and the creation of a bespoke Debian distribution.
– Established a new release process to encourage early customer involvement.
– Resolved intricate issues within embedded multi-core real-time systems, optimizing performance.
– Created comprehensive test frameworks and components using Python for both pre-silicon and post-silicon testing.
– Fostered productive collaboration with product development, application, marketing and validation engineering teams throughout the project lifecycle.

Technical Staff Engineer - Software
Microchip Technology India Pvt. Ltd., Bangalore, India
February 2015 - April 2022

– Led the firmware bring-up, verification, and validation for Wi-Fi and BLE IoT SoC development.
– Designed bootloader, OTA, and compiler features for RTOS-based and bare-metal secure wireless solutions.
– Architected end-to-end systems for cloud, serverless & mobile connectivity, and device security.
– Coordinated manufacturing and led the development of the apps DevOps framework.
– Managed the engineering team to develop and integrate embedded software control systems.

Embedded Software Engineer
Cisco Systems India Pvt Ltd, Bangalore
August 2011 - January 2015

– Developed Linux Device Drivers for high-end set-top box peripherals.
– Integrated networked personalization features for STBs.
– Implemented security modules for cable card and legacy security systems.
– Optimized system performance and led process improvement initiatives.

Embedded Software Engineer
Sasken Technologies Ltd, Bangalore
March 2010 - January 2011

– Implemented embedded system software as per design specifications.
– Conducted maintenance activities on existing software.
– Ported drivers and protocol layers for compatibility.

EDUCATION

Master of Science, Digital Design and Embedded System
Manipal Academy of Higher Education, Manipal, India
January 2011 - February 2013

Bachelor of Technology, Electronics and Communication Engineering
Amrita Vishwa Vidyapeetham, Kollam, India
May 2005 - May 2009

SKILLS

– Proficient in C and Python programming and debugging complex issues.
– Hardware, software, and firmware development at both SoC and system levels.
– MIPS and RISC-V based Linux and real-time systems.
– Linux and Linux scripting languages.
– End-to-end system-level design and architecture.
– Hardware-in-the-loop DevOps system design.
– Strong team player with a proactive approach.

Activities

– **Full-Stack System Design** - Regularly contribute to the silicon to cloud system design community through blog posts at embeddedinn.com and open-source projects in github.com/vppillai.
– **Woodworking** - Hobbyist woodworker, creating custom furniture and home decor items.
– **Travel** - Enthusiastic traveler, exploring new places and cultures.