

Vysakh P Pillai

Technical Staff Software Engineer

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Last Updated: April 2, 2024

PROFESSIONAL SUMMARY

Seasoned Technical Staff Software Engineer and Secure Systems Architect with 14+ years in the semiconductor industry. Specializes in high performance System-on-Chip Software, System Security & Device Drivers. Adept at Python, System Integration, DevOps, and Cloud Architectures. Proven track record leading cross-functional teams from conception to implementation and customer delivery. Strong communicator and proactive team player dedicated to delivering top-notch results.

A detailed professional history with project details is available on my web profile at embeddedinn.com/cv.

WORK EXPERIENCE

Technical Staff Engineer – Software

Microsemi Storage Solutions Ltd - A Microchip Company, Burnaby, British Columbia, Canada

April 2022 - Present

- Security Sub-system Firmware Architect for the first-generation RISC-V based High-Performance Space-flight Computing (HPSC) System-on-Chip (SoC)
- Developed a heterogeneous RISC-V core software emulation platform using QEMU, driving pre-silicon development and early customer engagement.
- Engineered robust early-boot architecture for Linux and application software systems, optimizing system resilience.
- End-to-end design and development of a Secure System Boot ROM.
- Implemented buildroot-based Linux System on QEMU and Protium emulation systems, ensuring easy pre-silicon development.
- Created a bespoke Debian distribution and apt-repo for a RISC-V System, enhancing performance and compatibility.
- Established release infrastructure and DevOps systems, streamlining processes for early customer adoption.

Technical Staff Engineer - Software

Microchip Technology India Pvt. Ltd., Bangalore, India

February 2015 - April 2022

- Applications lead for new Wi-Fi and BLE IoT silicon development at the wireless solutions group.
- E2E Systems architect for cloud, serverless & mobile connectivity, end-node authentication & device security.
- Post silicon bring-up and validation of SoC, RF modules, and development boards.
- Design and architecture of bootloaders, OTA, and compiler features for RTOS-based and bare-metal secure wireless solutions.
- Voice control interfacing using Amazon Alexa™ and Google Assistant™.
- Manufacturing co-ordination and lead architect for apps DevOps framework.

Software Engineer

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

- Linux Device Driver development for high-end set-top box peripherals.
- Development and integration of networked personalization features for STBs.
- Security module integration of cable card and legacy security modules.
- End to end system integration and performance optimization.
- Build and test automation, process improvement, and release management.
- Building proof of concepts for next-generation product ideas.

Software Engineer

Sasken Technologies Ltd, Bangalore, India
March 2010 - January 2011

- Implementation of embedded system software as per design specification.
 - Maintenance activities on existing software.
 - Forward and backward porting of drivers and protocol layers.
 - Interaction with the client for the above activities and to provide support.
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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.
- AWS for IoT solutions.
- End-to-end system-level design and architecture from low level device bring-up to cloud systems.
- Hardware-in-the-loop DevOps system design with Jenkins, Git, Bitbucket, Docker and Jira.
- 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.
- **Training** - Regularly conduct training sessions on system design, high performance computing and system security for junior engineers and new graduates.