

PRASANTH SWAMINATHAN

Software Engineering Manager

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PROFILE SUMMARY

Seasoned Software Engineering Manager experienced in networking system software, specializing in wireline and wireless network technologies. Proven expertise in leading software validation, developing high-performance teams, and advancing end-to-end automation frameworks, especially using Python and CI/CD principles. Skilled in functional and system-level testing of transport network software on x86 and ARM based hardware platforms for Tier 1 OEMs, with experience in cloud-native environments. Recognized for delivering reliable, scalable software solutions, ensuring robust customer network deployments.

CORE COMPETENCY AND SKILLS

- **Networking:** 4G, 5G RAN, O-RAN | Ethernet | TCP/IP | IPv4/v6 | IPsec | OAM | QoS | User/Control plane | PTP/Timing | ATM
- **Programming:** Python | Tcl/Expect | C
- **Tools:** Linux, DPDK | Docker, Kubernetes | Jenkins, JIRA, Git | Robot Framework | Ixia Traffic Generator | iperf, Wireshark | Scapy, T-Rex | Calnex Sentinel
- **Hardware Platforms:** Intel P5000 Network SoCs | Intel E810 Network Interface Cards | LSI Axxia 5600 Communication processors | Intel IXP Network processors | Motorola MPC860
- **Management:** Talent hiring and Management | Technical leadership development | Mentoring | Performance Management | Collaboration | Prioritization

CAREER TIMELINE

Intel Technology India Pvt. Ltd | Bangalore | Software Engineering Manager | Nov' 2014 – Present
LSI Research India Pvt. Ltd | Bangalore | Software Engineering Manager – QA | Sep' 2006 – Nov' 2014
Intel Technology India Pvt. Ltd | Bangalore | Sr. Network Software Engineer | Feb' 2005 – Sep' 2006
Philips Software Center | Bangalore | Technical leader | Dec' 2003 – Feb' 2005
HCL Technologies Ltd. | Chennai | Lead Engineer | April 2002 – Nov' 2003
India Comnet International Ltd. | Chennai | Software Professional | Sep' 1999 – Mar' 2002

CAREER ACCOMPLISHMENTS AND HIGHLIGHTS

Intel:

- Led end-to-end validation enabling successful large-scale (~4M units) deployments in operator regions all over the world generating **multi-million-dollar software revenues** during 2018-22.
- Successful execution of deliveries leading a next generation design win of **\$3bn** life-time revenue during 2023.
- Conceptualized, executed development of test automation framework achieving **30%** improvements in test cycles across products.
- Served as the Bangalore Site representative to drive cross-site collaboration and continuous improvement in software validation processes.

LSI:

- Expanded technical domain expertise and enhanced project contributions from a 3-person group to a 12+ member team, by leading multiple projects and micro-teams, demonstrating strong multitasking and leadership skills.
- Owned the validation across various projects contributing to annual software revenue of **\$100k** during 2012-13.
- Application engineering through demos, customer integrations, collaborating with cross-functional teams.

Philips/HCL:

- Oversaw test strategy, development, and execution across regular and contract teams, ensuring high standards in project outcomes.
- Promoted to Lead Engineer within four years for dedication to technical proficiency and impactful contributions to team success.

EMPLOYMENT DETAILS

INTEL TECHNOLOGY INDIA PVT. LTD | Bangalore | Nov' 2014 – Present

Software Engineering Manager

- Lead the Software Validation team, delivering production-grade Transport Network Software packages built on Intel Network SoCs, for Ericsson's wireless Base station nodes deployed on 4G/5G networks deployed worldwide following Centralized and Distributed RAN architectures.

- Spearhead design, execution, and system-level validation of network software stacks, encompassing application interfaces for control and user plane protocols, Linux, DPDK, and drivers for hardware accelerators.
 - Comprehensive test coverage mapped to Customer requirement specifications for transport network stack features - Ethernet, IPv4/v6, IPsec, PDCP/GTPu (User Plane), BFD, TWAMP, SOAM, PTP, SCTP, IKE (Control Plane) & QoS, System dimensions and metrics - Scaling and Throughput Performance.
 - Continuous Test Improvements incorporating scenarios and use cases received as part of Integration and release cycles from Customer and field deployments.
- Developed and directed the implementation of a modular Python-based Software Test Framework, from the scratch, enabling comprehensive end-to-end (API, Functional, System level) validation cycles with continuous integration and development capabilities.
 - Test automation for HW/Pre-Si/VM environments utilizing Robot framework; Test management for a wide range of test suites run parallelly, with REST APIs based dashboard data derived from Jenkins and JIRA.
- Based on virtualized RAN architecture as deployed at Verizon's cell sites, drove cloud-native enablement by leading functional, system validation and automation of PTP Synchronization and Intel L1 FlexRAN workloads on virtualized Distributed Units (vDU) following Open-RAN topologies on Kubernetes based Windriver Cloud platform run on Intel Xeon platforms.
 - Test Strategy and execution for feature coverage for PTP/Timing following O-RAN's LLS-C1 topologies on Intel 810 series NICs running Linux PTP utils, with synchronization metrics generated using Calnex Sentinel connected to Nokia CSR's clock synchronized to an external GPS.
 - Test strategy and automation of multi pod deployments matching customer use case with FH, MH interfaces for Control, User & Synch plane traffic.

LSI RESEARCH INDIA PVT. LTD | Bangalore | Sep' 2006 – Nov' 2014

Software Engineering Manager – QA

QA SW Eng Staff

Apr' 2013 – Nov' 2014

Sep' 2006 – Mar' 2013

- Led end-to-end validation efforts, including test planning, strategy development, and both manual and automated testing for LSI's Application Development Framework on ARM-based communication processors for enterprise and network providers.
- Directed the validation of Transport Network Application Development Kits (ADK) for Ericsson's DUS and TCU platforms, supporting multi-RAT (2G/3G/4G) functionalities on Ethernet, IP, IPsec, GTPu and Ericsson baseband communication protocols.
- System testing of mobile backhaul functionality for Ericsson's Site Integration Unit, covering carrier Ethernet protocols VLAN, QoS, CFM, BFD, IPv4/IPv6, IPsec, to ensure resilient and secure packet transport from remote base stations.
- Validation of Functional Programming Interfaces (FPI) for LG-Ericsson's Ethernet access products, enhancing Layer 2 packet processing, traffic QoS and Ethernet CFM (IEEE 802.1ag).

INTEL TECHNOLOGY INDIA PVT. LTD | Bangalore | Feb' 2005 – Sep' 2006

Sr. Network Software Engineer

- Conducted validation of Intel Internet Exchange Architecture SDK, supporting network equipment manufacturers in leveraging Intel IXP processors for packet processing in Radio Access Networks.
- Led validation for the ATM-based RAN development kit to enable 3G Node B and RNC transport functions on the IXP23xx processor line.

PHILIPS SOFTWARE CENTER | Bangalore | Dec' 2003 – Feb' 2005

Technical leader

- Designed and implemented test strategies for a Bluetooth-enabled flash memory audio player, encompassing core software application modules.

HCL TECHNOLOGIES LTD. | Chennai | April 2002 – Nov' 2003

Lead Engineer

- Regression testing for core Cisco router technologies, covering IPv4/IPv6 routing, switching, MPLS, and SNMP on Cisco 72xx/75xx routers; Mentored and integrated new team members to the team.

INDIA COMNET INTERNATIONAL LTD. | Chennai | Sep' 1999 – Mar' 2002

Software Professional

- Led hardware-software integration for a message translator device interfacing between Lucent's 5ESS ISDN switch and a Voice Mail system.
- Developed application layer software for ISDN protocol stack on Motorola PC860 using VxWorks RTOS, ensuring reliable communications for telecom applications.

EDUCATION

- M.S (Software Systems) Birla Institute of Technology and Science, Pilani, 2001
- B. Tech (Engg.) Electrical and Electronics engineering, Government Engineering College, Thrissur, 1999