Prakash Kademani

San Jose, CA | +1 6692438006 | Prakashsk066@gmail.com

Software Engineer

To leverage my extensive experience of 12+ years in software engineering to develop innovative and cost-effective solutions for the company. To utilize my strong technical skills, problem-solving abilities, and leadership qualities to contribute to the growth of the organization.

- Work experience in developing an overall firmware validation strategy including defining validation infrastructure and validation methodology for the validation of the various feature of the SSD firmware in various environments like software simulation, FPGA and SOC.
- Experience of working with customers to understand field bugs and to enhance the validation coverage and interact with all key stakeholders and geographically distributed cross functional teams to ensure product validation meets customer expectations and needs.
- Experience and good Knowledge of SSD firmware, NAND concepts, SATA/PCIe/NVMe protocols, out band protocols like NVMe -MI protocol and various error handling algorithms.
- Knowledge about Security spec & protocols used in enterprise SSD such as TCG, OPAL, SPDM etc.
- Extensive working experience in Bluetooth products (Legacy Bluetooth, BLE)
- Extensive working Experience in Bluetooth products(Bluetooth RF measurement device, Bluetooth development board , Bluetooth headset, Bluetooth car kit)
- Very good Experience in Shell Scripting, Perl, Tcl, LabVIEW, Python
- Good knowledge about the Bluetooth 1.1/2.0+EDR/3.0+HS/5.0 BLE specification and Bluetooth profile specifications.
- Experience in Verification of Bluetooth Application and stack in Mobile development board like ST Erricson MBL board on Android Platform.
- Experience in Verification of Bluetooth Application and stack in Mobile development board like ST Erricson T5008 on Symbian Platform
- Knowledge in WLAN stack.
- Knowledge of I2S protocol with respect to Audio Subsystem.
- Achieved Ni Certified LabView Associate Developer (CLAD) ceritification.

Technical Summary

Operating Systems

Windows | Linux | Android | Symbian

Programming Languages

Python | Perl | Shell | Tcl | C | Groovy | LabView

Tools

Labview | Wireshark/Ethereal | Bluetooth Sniffer,Beyond Compare | Bugzilla | Carbide | Lauterbach | Source Insight | Bluetooth Sniffer | ADS | CVS | GNU tool chai | Logic analyser | Meteor | Virtual Protocol analyser | Inway | Sysway | Clearcase | Trace 32 | Audacity | ADB | GIT | Network Analyser | code collaborator | PCIe protocol Analyser | WingIDE | Lecroy UNH-IOL tool | Metaware Debugger

Experience

Western Digital Corporation, San Jose, CA

Staff Engineer

Stargate SSD Firmware Validation **January 2022 – Present**

Stargate SSD controller platform supporting PCIe Gen 5 protocol is based on converged architecture of CSS and ESS products. The platform leverages CSS Moonshot/Quantum leap ASIC architecture and builds upon it to meet

enterprise product requirements and is designed to support TLC and QLC memories of BiCS6, BiCS8 and BiCS9 nodes.

- Involved in test design and validation of the GPP ROM code and SMBee rom code and ensure stable immutable ROM code
- Involved in the test design and validation of the out-band features like NVMe-MI over smbus.
- Involved in the Infra feature validation like DUI, error log , file system , FFU, Set events verify using the informer and fatal assert recovery
- Involved in the Infrastructure development for the test automation for FPGA initialisation, production ,normal boot flow and test execution on FPGA.
- Involved in test design and validation of the MPC lock and unlock mechanism.
- Worked on a solution to implement the smbus reset using the cp2112-ek adapter
- Involved in the failure analysis of the Front End and Infra features like access pattern test and NVMe admin commands.
- Involved in the verification FTL features like wear levelling , relocation and Bad block management features.
- Documentation of the test design for the Infra features
- Execution and verification of the Testcases on Model and FPGA
    - **Tools:** Beyond Compare, GIT, CTD, PICT, T34 Summit Analyser, Wing IDE , Code Collaborator , Metaware Debugger ,DBGView, Xplorer, CP2112 HID USB to SMBus/I²C Bridge Development Kit, silex , oscilloscope , In-house adapter like psoc adapter , wbt adapters.
    - **OS**: Windows
    - **Languages**: Python

Sasken Technologies Ltd, Milpitas , CA
Client location: Sandisk
MoonShot Firmware Validation **February 2016 – January 2022**

The MoonShot platform is a set of ASIC and FW building blocks designed for CSS and MCS product lines of NAND controllers. The platform is comprised of parametric elements addressing a wide range of product design targets – from 8 FIM 4GByte/s high end CSS solutions down to single FIM 500MB/s low cost iNAND solutions.

- Involved in setting up the UNH-IOL compliance test suite for windows and linux platforms.
- Involved in creating a test cases for the NVMe IO and Admin commands, SMART,DUI and Read Only features.
- Involved in the verification of the Front End and FTL features.
- Verification of the NVMe Controller Registers and Hardware registers.
- Involved in creating a utility to generate a testcases using PICT tool and integrating same to the Test Framework.
- Documentation of the Power Management Requirements.
- Execution and verification of the Testcases on Model, FPGA and SSD.
- **Tools**: Beyond Compare, GIT, CTD, PICT, T34 Summit Analyser, Wing IDE , Code Collaborator , Metaware Debugger ,DBGView, Explorer
- **OS**: Windows
- **Languages**: Python

Sasken Technologies Ltd, Bengaluru, India
Senior Engineer
Delphi Commercial Vehicle control Kit **July 2015 – February 2016**

The System shall consist of a DEA600 integrated smart display connected to a DEA610 radio. The DEA600 shall function as the display of the system with touchscreen functionality. All the custom calibrations and configurations shall reside in the DEA600.The DEA610 shall be a module capable to manage the audio output of

the system to the speakers, containing the tuner (AM, FM, WX), Sirius XM, Front Aux, Rear Aux, the audio output from the DEA600, USB, CD and managing the hard buttons.

- Involved in the creation of Testplan and testcases for the bluetooth profile A2DP, HF,MAP,AVRCP,PAN,DUN, PBAP.
- Involved in the creation of Testplan and testcases for the Wi-Fi playback, Wi-Fi Hotspot, Wi-Fi Access Point.
- Involved in the system building process using git version control tool.
- Documentation of the Requirements for the Bluetooth and Wi-Fi.
- Execution and verification of the Testcases.
    - **Tools: Beyond Compare, Wireshark, GIT**
    - **OS: Android**
    - **Languages**: Shell script

Client Location: Intel, Benguluru ,India

HARTS **July 2014 – May 2015**

The SIT test cases for HARTS support a variety of fully automated system integration tests. In order to achieve that the test cases itself are not a collection of independent scripts, but rather a software of its own.SIT test cases for HARTS are supporting more and more platforms in more and more different scenarios. The complexity of the test cases is constantly increasing. The Architecture in described here is in an object oriented manner. It uses packages and classes to encapsulate logical entities. The test cases developed here are designed to be run by CLA as test execution engine.

The system was used to test 2G, 3G and LTE protocol on various platform like XMM7260,XMM6360,Sophia_lte etc.

- Establishing the test setup.
- Development of the Test framework.
- Creating the test cases for 2G,3G and LTE.
- Execution of the Test cases.
- Documentation.
    - **Tools:** Flash Tool, Clearcase, Trace 32, Network analyser, Platform board XMM7260/6360 and sophie _lte
    - **OS:** Windows 7
    - **Languages**: Groovy

Audio Firmware verification **April 2014 – June 2014**

The objective of this project is to test the X-GOLD736\726 audio subsytem. The X-GOLD736 audio subsytem consists of two 16 bit Teaklite cores running up to 200MHz and hardware peripherals such as I2S, slimbus, Audio over USB .They are the co-processor for the MCU. On DSP there are algorithms and an operating system called scheduler. The test suite called wave setup which communicates through Virtual Prototype/Gap Clock driver to the Virtual Prototype/Gap Clock to run the various tests like I2S, Filter, PCM, Speech, Slimbus

- Establishing the test setup.
- Development of the Test framework.
- Creating the test cases for new features like Multichannel, LPRO.
- Execution of the Test cases.
    - **Tools**: Meteor, Virtual Protocol analyser, Inway, Sysway, Clearcase, Trace 32, Audacity
    - **OS**: Windows 7
    - **Languages**: TCL

Clinet Location: National Instruments, Bengaluru, India

Bluetooth Physical Layer Testing **August 2012 – December 2013**

The objective of this project is to test the features supported by the toolkit as per Bluetooth standard and the measurement quality of the NI BT 1.1 Generation and Analysis toolkit. NI RF signal generators (PXIe 5673/5673e) and signal analyzers (PXIe 5663/5663e/5665) will be used as hardware platform for testing the toolkit software. The toolkit will be tested against the 3rd party Bluetooth software. Agilent signal generators & signal analyzers and Aeroflex analyzer & CMW 500 (low priority) will be used as a reference for testing the standard compatibility and also for the verification and quality of the measurements.
Testing would include the following:

- Loopback Testing with 6G ,VST hardware & Golden Gate (optional). We will test with 5673/5673e, 5663/5663e/5665.
- Testing with third party instruments like MXA N9020A/ MXG N5182A/ Aeroflex PXI & R&S CMW 500. These instruments will be used for both functional and performance testing.
- Creating the TestStand Sequence for the loopback mode and the third party devices.
- Involved in development and bug fixing of the Test-framework in LabVIEW.
- Example testing including C, CVI Support and Manual Test on SFP.
- Establishing the test setup.
- Development of the Testframework.
- Creating the Teststand Sequence.
- Excecution of the Test cases.
- Enhancement of the testframework.
- Addition of the new testcases.
    - **Tools:** Labview
    - **OS:** Windows 7
    - **Languages**: LabView

Wifi-test **December 2011 – August 2012**

Wifi-test is fully automated test script for linux wireless drivers for Intel chipset, porting of the same for the Qualcomm chipset.

- Bring Up of the Test setup.
- Porting of the Test framework for the Qualcomm chipset.
- Execution of the Test cases.
- Enhancement of the test framework.
- Range and data throughput measurement
- Access point load testing
- Addition of the new test cases.
- Co-existence testing
- Power handling Testing
- Reproducing and analyzing of the Issue.
- Documentation.
    - **Tools:** Wireshark/Ethereal
    - **OS: PC-**Linux
    - **Languages**: Perl

Client Location: ST Ericsson, New Delhi, India

Bluelin **July 2011 – November 2011**

Validation of Bluetooth stack, Bluelin involves the features like AVRCP1.4, ObexOL2cap, FmOA2dp, MAP and Bluetooth 3.0 + HS features integrated on the android Platform and MBL board.

- Execution of the Test cases.
- Reproducing and analyzing of the Issue.
- Test plan preparation for the features like BT 3.0 + HS and MAP.

- Documentation.
    - **Tools:** Bluetooth Sniffer
    - **OS:** Android
    - **Languages**: NA

OTHER PROFESSIONAL EXPERIENCE

KTwo Technologies , Bengaluru, India
Software Engineer

Education

BE - Bachelor of Engineering – Specialization: Electronics & Communications
VTU Belgaum