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**Career Mission**

* Having good knowledge as well as good experience on embedded system, Kernel, Device Drivers, and I want to grow in field of Linux kernel and Device Drivers.



**Summary**

* Currently working in **Sasken Technologies Ltd.** in field of Telematic chipset’s end to

end system design & develop, test, and deliver software modules/features.

* Areas currently working on: **System boot sequences use-cases**, **Bootloader (Little Kernel)**, **Kernel, Linux Device Driver Developer** and **Automation** needed to maintain system software in **Yocto/Embedded Linux** environment.
* Having 6 months experience in **Vector India** as an Embedded Software Programmer.
* Good understanding and hands-on experience in **porting, fine-tuning** Linux into different platform and **Board bring up**.
* Hands on experience on **Qualcomm based devices like Telematic (Auto) and Automotive devices.**
* Hands on experience on source code analysis techniques
* Strong knowledge and debugging skills on **Bootloader (Little Kernel).**
* **Investigate, debug** (root cause) and resolve complex issues reported on system software.
* **Hands-on-debug** and interact with customer as a part of commercialization process.

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| **Skills** | Deep knowledge of C, Embedded C, C++, Data structure & Algorithms, git, microcontroller 8051, Linux System Programming, Linux utilities , Linux Operating System Internals , Linux Device driver .  Communication protocol: UART, I2C, SPI. |
| **Device Driver** | System level programming, kernel level programming, char, device driver, |

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|  | procfs, sysfs , ioctl, waitqueues , interrupts, tasklets, workqueue, synchronization techniques- atomic operation, mutex  , spinlock, memory management, Linux debugging . |

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| **Tools** | Git, GDB, adb, fastboot, kdump, crashscope, minicom,  cscope, Klocwork, FOSSID and several other tools. |



**Professional Project**

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| **Project** | **Emergency Shutdown** |
| **Description** | Prevent memory corruption on abrupt power off by shutting down the system with reduced power off time. System to power off in less than 2 sec before the backup power goes off. |
| **Role** | * Writing a driver from scratch which registers for interrupt triggers on abrupt power off execute scripts to do –   1. Send signal to modem stop,   2. Kill all daemons to stop access memory,   3. Sync and unmount the file system, iv- Shutdown the system. * Writing Device tree (DTS) node and update with GPIO pin number to detect Interrupt. |
| **Project** | **Linux Porting on Qualcomm msm8996 device** |
| **Description** | As a part of Android build, needed to upgrade  Linux from 4.4 to 4.14 and board bring-up with Linux 4.14. |
| **Role** | * Understanding whole boot-up sequence and bring up board in same fashion. * Porting of drivers and making dtschanges. * Debugging kernel issues and working in CLI. * Kernel Customization build. * Compilation, managing Android full build and working on Android layers. * Working in Qualcomm Kdev environment. * Booting with various RootFS like Initramfs, Ramdisk. * Flashing images and sanity test. |

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| **Project** | **Telematics** |
| **Description** | Platform Team - Taking ownership from end to end and maintain and improve existing software as per requirement |
| **Role** | Hands on with:   * Boot-up use cases * Bootloader- Little kernel * Investigate and debug root cause of issues reported in APPSBL, Kernel and supporting libraries in yocto environment. * Yocto/Embedded linux * Static Analysis Klocwork run and fix issues. * FOSSID report generation and CVE Analysis &   fix’s   * Automating the required process. * Communication with different teams and passing on respective component issues to teams. * Merging and propagation of gerrits to   respective branch and respective SI’s.   * Testing patches on local build against static analysis and sanity test. |

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| **Project** | **Y2038 Problem on msm-5.4** |
| **Description** | On 19th Jan 2038 is the Y2038 problem where the timestamp can no longer fit with signed 23bit integer. On User space application for avoiding y2038 problem they must use all modern Linux kernel system call. |
| **Role** | * Design, develop and unit test whole feature. * Run cppcheck scan on all user-space source and kernel source. * Identify the portion of source that is making use to time. * Develop a template needed to fix the buggy code against y2038. * For user-space upgrade glibc which provide support to y2038 and analyze other packages and fix them. * Write down the test scripts for testing and perform all types of sanity testing. |

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| **Project Name** | **Description** |
| **Designing GPIO driver for Raspberry pi Board** | Developing GPIO driver with basic functions and doing **IOCTL**. |
| **Linux Porting on SDM845** | Porting and fine-tuning Linux as required and board bring-up with that image. |
| **Designing C preprocessor** | Design and development of C preprocessor trying to understand the compiler functions  and difficulty level of design of those functions. |



**Learning Projects**



**Education Qualification**

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| **Course** | **Institution** | **Board/University** | **Percentage** | **Year of**  **Complet ion** |
| **Embedded System Design** | Vector India | Vector India | - | 2019 |
| **Bachelor of Engineering** | S.G.Balekundri  Institute of Technology | VTU, Belgavi | 68% | 2018 |
| **Higher Secondary** | kendriya vidyalaya | CBSE | 73% | 2014 |
| **High School** | kendriya vidyalaya | CBSE | 8.6 CGPA (82%) | 2012 |



**Personal Details**

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| **Fathers Name** | S.S. Mugali |
| **Mothers Name** | Jayashree Mugali |
| **Date of Birth** | 21/04/1996 |
| **Address** | C/O S.S.Mugali , Sahyadri nagar , Belgavi,  Karnataka , 590019 |
| **Nationality** | Indian |
| **Languages Known** | English, Hindi, Kannada |
| **Hobbies** | Watching and Playing sports (Boxing), Hanging out, Physical fitness. |

**Declaration:**

I hereby declare that above information is correct to best of my knowledge and belief.

**Place:** Bangalore **Date:**

**Basava Prabhu**