

NAME: BASAVA PRABHU

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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.

<b>Skills</b>	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.
<b>Device Driver</b>	System level programming, kernel level programming, char, device driver,

	procfs, sysfs , ioctl, waitqueues , interrupts, tasklets, workqueue, synchronization techniques- atomic operation, mutex , spinlock, memory management, Linux debugging .
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<b>Tools</b>	Git, GDB, adb, fastboot, kdump, crashscope, minicom, cscope, Klocwork, FOSSID and several other tools.
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## **Professional Project**

<b>Project</b>	<b>Emergency Shutdown</b>
<b>Description</b>	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.
<b>Role</b>	<ul style="list-style-type: none"> <li>• Writing a driver from scratch which registers for interrupt triggers on abrupt power off execute scripts to do – <ul style="list-style-type: none"> <li>i- Send signal to modem stop,</li> <li>ii- Kill all daemons to stop access memory,</li> <li>iii- Sync and unmount the file system,</li> <li>iv- Shutdown the system.</li> </ul> </li> <li>• Writing Device tree (DTS) node and update with GPIO pin number to detect Interrupt.</li> </ul>
<b>Project</b>	<b>Linux Porting on Qualcomm msm8996 device</b>
<b>Description</b>	As a part of Android build, needed to upgrade Linux from 4.4 to 4.14 and board bring-up with Linux 4.14.
<b>Role</b>	<ul style="list-style-type: none"> <li>• Understanding whole boot-up sequence and bring up board in same fashion.</li> <li>• Porting of drivers and making dtschanges.</li> <li>• Debugging kernel issues and working in CLI.</li> <li>• Kernel Customization build.</li> <li>• Compilation, managing Android full build and working on Android layers.</li> <li>• Working in Qualcomm Kdev environment.</li> <li>• Booting with various RootFS like Initramfs, Ramdisk.</li> <li>• Flashing images and sanity test.</li> </ul>

<b>Project</b>	<b>Telematics</b>
<b>Description</b>	Platform Team - Taking ownership from end to end and maintain and improve existing software as per requirement
<b>Role</b>	<p>Hands on with:</p> <ul style="list-style-type: none"> <li>• Boot-up use cases</li> <li>• Bootloader- Little kernel</li> <li>• Investigate and debug root cause of issues reported in APPSBL, Kernel and supporting libraries in yocto environment.</li> <li>• Yocto/Embedded linux</li> <li>• Static Analysis Klocwork run and fix issues.</li> <li>• FOSSID report generation and CVE Analysis &amp; fix's</li> <li>• Automating the required process.</li> <li>• Communication with different teams and passing on respective component issues to teams.</li> <li>• Merging and propagation of gerrits to respective branch and respective SI's.</li> <li>• Testing patches on local build against static analysis and sanity test.</li> </ul>

<b>Project</b>	<b>Y2038 Problem on msm-5.4</b>
<b>Description</b>	On 19th Jan 2038 is the Y2038 problem where the timestamp can no longer fit with signed 32-bit integer. On User space application for avoiding y2038 problem glibc and kernel should have support of Y2038 feature.
<b>Role</b>	<ul style="list-style-type: none"> <li>• Design, develop and unit test whole feature.</li> <li>• Run cppcheck scan on all user-space source and kernel source.</li> <li>• Identify the portion of source that is making use to time.</li> <li>• Develop a template needed to fix the buggy code against y2038.</li> <li>• For user-space upgrade glibc which provide support to y2038 and analyze other packages and fix them.</li> <li>• Write down the test scripts for testing and perform all types of sanity testing.</li> </ul>

## **Learning Projects**

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

## **Education Qualification**

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

## **Personal Details**

<b>Fathers Name</b>	S.S. Mugali
<b>Mothers Name</b>	Jayashree Mugali
<b>Date of Birth</b>	21/04/1996
<b>Address</b>	C/O S.S.Mugali , Sahyadri nagar , Belgavi, Karnataka , 590019
<b>Nationality</b>	Indian
<b>Languages Known</b>	English, Hindi, Kannada
<b>Hobbies</b>	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**