**LUCKY TYAGI**

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**EMBEDDED LINUX - DEVICE DRIVERS - YOCTO - KERNEL PORTING - ANDROID - RTOS - LWIP**

**TECHNICAL SKILLS**

**OS** **:** Linux, Embedded Linux, Android, MyNEWT OS

**Languages :** C, Shell Scripting, Yocto Recipes, Python

**Protocols** **:** I2C, SPI, RS-232, RS-484, UART

**Linux Tools :** Makefile, GCC, GDB, KGDB, Yocto, GIT, Linaro, Valgrind, ADB, Newt

**Micro-Processors** **:** ARM Cortex-A9 (i.MX6)

**Micro-Controllers** : STM32F4 Cortex-M4

**EDUCATION**

**Amrita School of Engineerin**g, Coimbatore, India **MAY 2014**

Bachelors in **Electrical and Electronics Engineering, GPA 7.88**

**WORK EXPERIENCE**

**E-CON SYSTEMS INDIA PVT. LTD. MAY 2014 - SEP 2016**

**DESIGNATION** : Firmware Engineer

**EXPLORIDE TECHNOLOGIES PVT. LTD. SEP 2016 - DEC 2017**

**DESIGNATION** : Firmware Engineer

**PATH PARTNER TECHNOLOGIES PVT. LTD. JAN 2018 - PRESENT**

**DESIGNATION** : Senior Software Engineer

**PROJECTS**

***YOCTO BUILD SYSTEM* AUG 2014 - OCT 2014**

* *Yocto Build Setup for custom BSP*

Developed a Yocto build setup for automating BSP creation for i.MX6 Processor. It includes creating own BSP Layer, adding machine support and adding custom recipes.

***BSP DEVELOPMENT* NOV 2014 - MAR 2015**

* *Custom Board Support Package*

Developed a custom BSP for i.MX6 Processor. It includes porting Linux Kernel, Device Tree File, U-Boot boot-loader and Root File System for the target board.

* + U-Boot : 2013.04, 2014.04
  + Kernel : 3.10.17, 3.14.28
  + Ubuntu RFS : 12.04, 12.10, 14.10

***DIAGNOSTIC*S APR 2015 - JUL 2015**

* *Code development for board diagnostics*

Developed codes requiring minimal human input to test all peripherals of eSOMi.MX6 board while maintaining minimal time of execution and completion for faster production cycle.

* C application to diagnose eMMC, RAM, LVDS and GPIO pins in boot-loader.
* C application to diagnose ADC in root file system.
* Shell Scripts to test USB OTG, Ethernet, Wi-Fi, HDMI, 3 Camera interfaces (1-MIPI, 2-Parallel), Bluetooth, RS-232 and RS-485 Ports.

***DEVICE DRIVERS* AUG 2015 - DEC 2015**

* *Developing and Porting device drivers*
* Ported device driver for ADC Chip AD7949.
* Ported device driver for HDMI and LVDS display interfaces.
* Developed device driver for DAC Chip AD5724R connected over SPI interface.
* Developed device driver for RS-232 and RS-485 Muxed serial port.

***TICKET HANDLING, BSP RELEASES and DOCUMENTATION* JUN 2014 - SEP 2016**

Includes handling customers tickets for custom or additional support. Fixing bugs reported by QA or customer, integrating the bug fixes into new release and setting up to Yocto to create a new BSP. Preparing easy to read, simple and detailed documents for BSP Releases and for customers.

**ANDROID DEVICE DRIVERS SEP 2016 - NOV 2016**

* *Custom Device Drivers in Android Linux*

Created and integrated custom device drivers in Android Linux Kernel for custom devices (ALS, Projector Display Device and Battery Charger Controller driver).

**HAL LAYER INTEGRATION DEC 2016 - JAN 2017**

* *Integrating Custom Device Drivers with HAL Layer*

Customized and integrated HAL Layer implementation for Light Sensor, GPS and Projector Display device with custom device drivers Android Linux Kernel.

**BOOT TIME OPTIMIZATION JAN 2017 - MAR 2017**

* *Optimizing boot time for Android Embedded System*

Optimized android embedded system at three levels :

* U-Boot
* Kernel
* Android File System

**BUG FIXING AND CODE OPTIMIZATION MAY 2017 - JUL 2017**

* *Bug fixing and adding new features as reported and requested by beta testers and investors.*

**CAMERA AND OBD INTEGRATION AUG 2017 - DEC 2017**

* Wireless rear camera streaming to help in parking.
* Front camera for recording videos and taking snapshots.
* Getting OBD data from the vehicle and displaying on the HUD.

**LWIP, 6LOWPAN STACK INTEGRATION FEB 2018 - MAR 2018**

* *Integration of lwIP and 6loWPAN stack with RAW API support in MyNEWT OS*
* Developed netif interface driver for communicating with the stack.
* Developed lwip p2p service driver on top of netif to communicate with other devices.
* Integrated RTLS (Real Time Location Service) with lwIP to decrease load on UWB Bandwidth.

**SAMPLE APP DEVELOPMENT APR 2018 - JUL 2018**

* *Developed sample applications for user showcasing the lwIP stack implementation*
* Basic lwIP Ping application.
* lwIP P2P application with the capability of sending user defined payloads.
* lwIP P2P application integrated with Auto-Site Survey.

**PERSONAL SKILLS**

* Exploring, Learning and Living LINUX.
* Habit of delivering before or on time on continuous basis.
* Ability to work in multi-cultural and multi-functional team environment.
* Excellent Communication skills.
* Extremely detail oriented and organized.

**PERSONAL DETAILS**

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| **PERMANENT ADDRESS** | Electronic City, Phase-I, Bangalore - 560100 |
| **DATE OF BIRTH** | 2nd March 1992 |
| **CURRENT LOCATION** | Bangalore |
| **NATIONALITY** | Indian |
| **LANGUAGES** | Hindi and English |