

# LUCKY TYAGI

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## EMBEDDED LINUX - DEVICE DRIVERS - YOCTO - KERNEL PORTING - SYSTEM CALLS - ANDROID

### TECHNICAL SKILLS

**OS** : Linux, Embedded Linux, Android  
**Languages** : C, Shell Scripting, Yocto Recipes, Python  
**Protocols** : I2C, SPI, RS-232, RS-484  
**Linux Tools** : Makefile, GCC, GDB, KGDB, Yocto, GIT, Linaro  
**Micro-Processors** : ARM Cortex-A9 (i.MX6)

### EDUCATION

**Amrita School of Engineering**, Coimbatore India **MAY 2014**  
Bachelors in Electrical and Electronics Engineering, GPA 7.88/10

### WORK EXPERIENCE

**E-CON SYSTEMS INDIA PVT. LTD.** **MAY 2014 - SEP 2016**  
**DESIGNATION** : Project Engineer

**EXPLORIDE TECHNOLOGIES PVT. LTD.** **SEP 2016 - PRESENT**  
**DESIGNATION** : Firmware Engineer

### PROJECTS

**YOCTO BUILD SYSTEM** **AUG - 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

**DIAGNOSTICS** **APR - 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, WiFi, HDMI, 3 Camera interfaces (1-MIPI, 2-Parallel), Bluetooth, RS-232 and RS-485 Ports.

**DEVICE DRIVERS** **AUG - 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.

**SYSTEM CALLS and ISR** **JAN 2016**

■ *Custom System Calls and ISRs in Linux*

Created and integrated custom system calls in Linux Kernel for added custom functionality. Also developed a custom Interrupt Service Routine for Power Button Key.

**TICKET HANDLING, BSP RELEASES and DOCUMENTATION** **AUG 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 OPTIMAZATION

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 – PRESENT

### ■ Bug fixing and adding new features as reported and requested by beta testers and inverstors.

Currently working on adding the following new features :

- Wireless rear camera streaming to help in parking.
- Display OBD data on the HUD.

## 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

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