

# LUCKY TYAGI

Electronic City, Bangalore | luckylinux91@gmail.com | +91-8939155438 | www.linkedin.com/in/luckytyagi

## 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

### WORK EXPERIENCE

E-CON SYSTEMS INDIA PVT. LTD.

MAY 2014 – SEP 2016

DESIGNATION : Firmware 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, Wi-Fi, 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****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 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 – JUL 2017****■ Bug fixing and adding new features as reported and requested by beta testers and investors.****CAMERA AND OBD INTEGRATION****AUG 2017 – PRESENT****■ Custom System Calls and ISRs in Linux**

- 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.

**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**

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