



# Sudhanshu Gupta

Senior SDE - III @ Amazon (L6)

C | C++ | Java | ARM Assembly | Python  
BSP | RTOS | DS & Algo | Design Patterns | Android

## CONTACT



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## EDUCATION

### M.S. [Softwares Systems]

BITS Pilani  
2007 - 2009

### B.Tech [Electronics & Telecom]

College Of Engineering Roorkee  
2000 - 2004

## INTERESTS

SYSTEM DEBUGGING  
DRIVER DEVELOPMENT  
ML & AI  
RASPERRY-PI & ARDUINO  
IoT / CLOUD BASED PROJECTS  
PROJECT MANAGEMENT

## SKILLS

BSP

Device Drivers

Android

RTOS

OS Concepts

RTOS

## WORK EXPERIENCE

20yrs exp (Oct 2004 till present)



### Senior SDE - 3

Nov '23 - Present

Amazon, Bangalore

Working on Amazon's SMP Devices (Kara, Sheldon, Mantis, Karat, Gazelle) as part of BSP team, working on Android Platform / Kernel issues reported on production devices.



### Senior Staff Engineer

Apr '20 - Sep '23

ChargePoint Technologies, Gurgaon

New Feature development (C / C++14) on EV Charging Stations (Linux App Development) under NPI framework and maintenance of legacy products. Managed a team of 3 engineers & liaise with cross functional teams for deliveries. Regular status presentations to senior management.



### Staff Engineer

Mar '17 - Mar '20

NXP Semiconductors, Noida

Board Bringups, Uboot, Linux, Debugging, Driver Development (Tbgen, Axiq, DCS, Clocking) on NXP SoCs.



### Senior Android Developer

Sep '15 - Feb '17

OLX India Pvt. Ltd., Gurgaon

Feature development on OLX's C2C consumer segment based Android Application. Requirements understanding from Product owner and designing team.



### Senior Software Engineer

Feb '11 - Sep '15

Intel Technologies, Bangalore & Noida

Board bringup & System Debugging for Intel's internal projects (Android based tablets) and at client location(s) Micromax (Gurugram), Samsung (Noida)



### Senior Software Engineer

Jun '06 - Jan '11

Infineon Technologies, Bangalore

System Debugging for Infineon based base-band SoCs at various client and internal project locations (Korea, China, Germany, Finland, Austria, Nigeria).



### Software Engineer

Oct '04 - Apr '06

LG Soft India Pvt. Ltd.

PhoneBook App developer using LG's UI development framework - PDK.

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## PROFILE

Board Bringup (Uboot & Linux) | System Debugging | Platform (Middleware)  
Embedded Mobile Applications - RTOS | Drivers development  
Android Application Development

## PROJECTS UNDERTAKEN

### Amazon Development Centre, Bangalore



#### SMP (Streaming Media Players)

- Production issues analysis related to System / BSP of Legacy SMP products across the world.
- Responsible for Code reviews for both vendor and in-house code.
- Preparation of Release software that goes into SMP products (Kara, Mantis, Sheldon, Sheldon Plus, Gazelle) across globe.
- End-to-End Vendor interaction for driving the open issues to conclusion.

### ChargePoint India Pvt. Ltd. Gurgaon



#### Macaw NPI (New Project Initiative)

- Board Bringup of EV Charger with NPI code base.
- Single Handedly worked on writing application level drivers (Linux User Space) to Start / Stop charging over SPI interface.
- Demo given to Senior VP, much appreciated.

#### Legacy Product (CPH / CT4K / CP4K / CPE250)

- Managed & Mentored a small team of 3 engineers.
- Responsible for resolving production issues on legacy EV stations.
- Hosted cross-functional weekly status meetings with upper management including VP-Product Team, VP-Customer Escalations.
- Participated in Design discussions and froze low level architectural details for new feature developments for legacy products.

#### Panther NPI (CP6K)

- Developed few critical C++14 linux user space applications for ChargePoint's new age EV station - "Commissioner - running as a systemctl service" "DevicePair"
- "Remote Logs Fetch" - scalable design (uses Polymorphism that accommodates fetching station logs over different communication protocols - supports https & ftps.
- "Reset Factory Defaults" - feature implements linux (isolation) targets to reset stations back to factory state.
- Participated in Design discussions with US dev team and froze low level details for new feature developments on legacy products.

#### Board Bringup (DCC board)

- A strategic PoC project to demonstrate India team's skill sets to upper management. Scope of this project was more of boot to prompt.

#### Finbox porting onto RPI4

- A voluntary effort to port Finbox (Factory in a Box) utility used by Factory team to commission EV stations at factory. Finbox RFS was integrated onto RPI4's linux code base, custom binary was built and tested over memory card.

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## PROJECTS UNDERTAKEN

### **NXP Semiconductors India Pvt Ltd, Noida**



#### **Geul&WDL-5GSoC**

- Board Bringup and bug fixes.
- Conducted regular code-reviews for junior team members.
- Architected & Developed Drivers on FreeRTOS
- TTI (Tick Timer Interrupts) - User-Space Application, Library & Linux kernel driver development.
- TBGEN (Time Based Generator)
- DCS (Data Conversion System)
- AXIQ Loopback driver
- Test-Framework that enables various teams to test their code without recompilation of binary.

#### **VNP – Vehicle Network Processor**

- Board Bringup and bug fixes.
- SoC primarily focused at automotive industry.

#### **LS1028 – ENETC & TSN**

- Pre-Silicon and Post-Silicon Board bring up. activities. (Uboot boot loader & Linux).
- Preparation of Quality Docs for Releases.
- Scrum / Agile methodologies followed religiously.
- Debugging of code via in house debugger – NXP's CodeWarrior & CCS

### **OLX India Pvt Ltd., Gurgaon**



#### **Developed New Features (Sole Ownership)**

- Complete Ownership of White Theme project.
- Zopim Chat (Customer care chat assistance).
- Content First feature development.
- Bug fixes.
- Implementation of Native Ads (DFP) on HomeScreen and Ad Details page.

### **Intel Mobile Communications, Noida/Bangalore**



#### **Android platform engineer**

- Debugging of platform issues for Android based Micromax tablets on Intel Chipsets. Handling Linux kernel driver issues that occur on customer products.

### **Infineon Technologies, Bangalore / Onsite**



- Phonebook expert for Infineon's Apoxi framework (C++).
- Glue layer development (TINA)
- System Debugging.
- Debugging System issues, (Lockups, Deadlocks, Crashes, Hardware issues).
- Power measurements, Performance / Latency measurements.
- Worked with major OEM(s) – LG (Korea), Samsung (Korea, Germany), Nokia (Finland), BenQ (China)

### **LG Soft India Pvt Ltd, Bangalore / Korea**



- Application engineer (C++ based).
- MMS Stack developer
- PhoneBook expert

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## A C H I E V E M E N T S

### **NXP Semiconductors Pvt Ltd.**

- "BRAVO" award - Development of TBGEN & AXIQ drivers from scratch. (Dec 2019).
- "Cheers for Peers" award for quick ramp up of LA1575 board bring-up (May 2019).

### **OLX India Pvt Ltd.**

- "Team of the Quarter" award for BHAG App revamp.
- Won Hackathon award for implementing Idea of Loyalty program.

### **Intel Technologies**

- "Reward and Recognition" Award Sep 2014 for my presentation on "System Debugging" to INTEL HW Team.
- Received "Star of the Quarter Award Q4 '2011" - CATFISH project.
- Received "Star of the Quarter Award Q3 '2010" - AGPS team.

### **Infineon Technologies**

- Given Internal presentations to various teams - "Basic Trace32 Usage", "Profiling using Back Trace (Power Trace)".
- Given technical presentations to Samsung (India) engineers on topics covering "Architecture & Usage of C-AT System (Customer AT commands)".
- Presented "Architecture & Usage of C-AT System (Customer AT commands)" to LG Electronics(Korea) engineers & Infineon (Korea).
- Presented "Core Dump extraction and analysis" to LG Electronics Engineers (Korea).
- "Team of the Quarter" award - LG Z350 project.
- On-Spot Award - Samsung's "SLEEK" project.
- On-Spot Award - LG's "SHINE" & "V1 PRADA" project.

### **LG Soft India Pvt. Ltd.**

- Successful completion of IOP test fest with other MMS Clients at Seoul, Korea (Duration 2 Months).
- Internal presentation taken up on MMS Client devel- oped at LGSI, India. The presentation audience consisted of Team Leaders of other teams at LGSI and Mr. H.J.Choi (CEO, LGSI, India)

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## H O B B I E S / I N T E R E S T S

1. Linux kernel modules (Device Driver) development on RASPBERRY-PI Board.
2. Hardware / Software interfacing with Raspberry Pi
3. Wrote GPIO and I2C libs from scratch on Linux Kernel 3.2.27 for Raspberry PI
4. Interfaced various hardware modules via GPIO to Raspberry Pi Development Board
  - a. RTC (DS1307) (via I2C protocol)
  - b. 4x3 Keypad MaTetrix (via GPIO)
5. 8051 Development board programming using KEIL uVision IDE
6. Linux Device Driver and Kernel Programming.
7. Board Bring-up(s) and porting code to new hardware.
8. Low-level driver development 9. Boot-loaders
10. Memory Map, Memory Footprint Optimization (both ROM & RAM)
11. 8051 based microcontroller & hardware interfacing.
  - a. Controlled self made circuits via Port Pins
  - b. Wrote code from scratch for Timer related services
  - c. Wrote code for UART communication driver between 8051 board and Laptop
12. Android Application development.
13. Arduino Hacking  
( <https://github.com/softwareunleashed/arduino> )
  - a. Controlling Servo Motors via IR Remotes – Link
  - b. RFID read / write
  - c. Making Two Arduino(s) communicate over I2C
  - d. Temperature sensor
  - e. Interfacing Nokia LCD
  - f. RTC DS1307 interfacing

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## TECHNICAL SKILLS

### Operating System(s)

Linux, Windows, Mac

### RTOS

Nucleus PLUS, ThreadX, FreeRTOS

### Languages

C, C++, JAVA, ARM Assembly, Python, PHP

### Data Structures & Algorithms

Stacks, Queues, Linked List, BST,  
Dynamic Programming,  
DNF - Deutch National Flag (2 / 3 - way partitioning),

### Network Programming

TCP/IP,  
IPC,  
Multithreaded programming

### IDEs

VS Code, Source Insight, Eclipse,  
Android Studio (Google) , Visual Studio.NET,  
KEIL uVision, Arduino IDE

### Design Patterns

Creational : Singleton, Factory  
Structural : Facade, Adaptor  
Behavioral : Chain Of Responsibility, Command, Iterator,  
Mediator, Observer

### Android App Development (JAVA)

Threads, ListArray, Custom List Adapters, Telephony Manager, SMS Manager, Grids, Tab Layout,  
Sliding Navigation Bar, Action Bar, Cursors, SQLite, Exception handling, UI Designing, Design  
Patterns (OO based)