

Amitesh Anand

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Profile Summary:

- Completed 7+ years as **Software Professional** in the industry. Currently working with **Qualcomm India Pvt Ltd.**, since July'16, and prior experience of 3.5yrs with **Samsung India Pvt Ltd.** & 1.5yrs with **IBM India Pvt Ltd.**
- Working as **Senior Engineer** for Android Kernel, Framework & device's overall system performance.

Work Experience:

- Currently working as **Senior Engineer** at **Qualcomm India Pvt. Ltd., Bangalore**.
As part of Android Kernel Memory Management & Performance team member, I have been:
 - a) Actively working on kernel memory management for optimizing memory usage for **IoT Platforms** (such as Connected Camera, Smart Assistant and other products).
 - ❖ Development of new memory optimization features
 - Suggest & implement improvement in default Lowmemorykiller feature which helps in better management of background apps & improves utilization of RAM for faster application launch & other low-memory scenarios.
 - Optimize swap writes to improve performance of low-RAM devices and enhance lifetime of emmc by 15% as compared to the default implementation.
 - ❖ Porting of memory optimization features on wearables & connected camera
 - ❖ Launch latency, concurrency, long duration test and other performance usecase analysis.
 - b) Working for Android Upgrade Projects for **Android Wearables**
 - ❖ Identified & suggested many changes to **Google** related to memory optimizations.
 - ❖ Worked on swap management for improved usage on Swap-over-emmc.
- Recently moved to development team of Networking group within Qualcomm, I am extensively working on proprietary development for offloading Data path of Security IP to Network offload co-processor.
 - a) Tasks include offloading of hash algorithms (SHA224) on the new IP block for authentication.
 - b) Currently working for offloading specific packets for IPsec processing.
- Worked as **Lead Engineer(R&D)** at **Samsung Electronics Pvt. Ltd.** on Android Platform in Performance Team, from March 2013 to June 2016:
 - a) Developed solutions related to **Kernel Memory Management**, for Android OS.
 - ❖ Improvement of zSwap write back feature :
 - Problem: Low performance due to shortage of zswap free pages & longer time to write back for freeing up space to take up new requests.
 - Solution: **Devised & developed a new write back mechanism for zSwap** by monitoring the zswap free pages pool levels, and initiate an early write back.
 - Advantage: Higher availability of zswap free pages, resulting into better performance & stability.

- b) **Co-developed various solutions** for regulating number of background applications from Android Framework, for better performance.
 - ❖ Co-developed solutions for managing background applications from **Android Framework**:
 - Problem: Low performance of device after launching multiple applications.
 - Solution: **Co-developed new policies to dynamically adjust the number of background applications**, based on current memory levels & other system parameters.
 - Advantage: Better launch time of android applications & improved performance, and has been shipped in many models of Lollipop, KitKat, & JellybeanPlus models of Samsung devices.
- c) I have been frequently traveling to **Samsung Mobile Division, HQ, Suwon, South Korea**, due to my active contribution in devising & developing new solutions, optimizing existing code & debugging performance bottle necks.
- d) **Patents :**
 - ❖ A novel mechanism for improving performance of Foreground Applications in mobile based device.
 - Filled in Indian Patent Office. (In progress).
 - ❖ An apparatus for smart early reclaim of system resources for better performance.
 - Filled in Indian Patent Office. (In progress).
- Worked as **System Software Programmer** for **IBM India Private Ltd**, from August, 2011 to March 2013.
 - a) Majorly worked with Reserve Bank of India (client of IBM), for performance analysis & tuning of RTGS / NEFT system running on Linux Operating System.
 - b) Tuning of various parameters for Linux to improve performance using custom IBM tools.

Technical & Personal Skills:

- Programming Languages : C
- Skills : Data Structure & Algorithms
- Tools: GIT, Gerrit, Perforce
- Enthusiasm to learn new technology & producing meaningful result with innovation.

Self-initiated Projects:

- **Title: Implementing dummy(experimental) character device driver**
Technology Used: C, GCC, Linux kernel
Status: Completed
Duration: February 2016 to April 2016
Details: The project aims at implementing an experimental character device driver which creates a character device and supports device operations such as open, release, read, write, lseek. These functionalities were utilized from user-space programs developed as part of the project.
Github: https://github.com/amiteshunique/char_driver

B.Tech Projects:

- **Title: Elliptic Curve Cryptography**

Technology Used: GCC, GMP Library

Status: Completed

Duration: August 2010 to May 2011

Details: The project aims at implementing a secure application based on Elliptic Curve Cryptography.

Paper Publication:

- **Title: Elliptic Curve Cryptosystem for Data Confidentiality in Cloud Environment,** at National Conference on Electronics Communication & Signal Processing, Siliguri in 2011.

Educational Qualifications:

- **Topped my college with CGPA 9.0 (out of 10)** in B.Tech (Bachelors) in Computer Science & Engineering from Calcutta Institute of Engineering and Management, Kolkata (2007-2011).
- Passed Intermediate with 63.7% in 2006 from A. N. College, Patna under B.I.E.C. Board.
- Passed Secondary Examination with 83.5% in 2004 from St. Karen's School under I.C.S.E. Board.

Achievements:

- Twice received award "Qualstart" for exemplary contribution at Qualcomm.
- Selected for "Innovator of the month" Award for filing patents at Samsung.
- Received appreciations at various levels for my active contribution at Samsung.
- **Topped in my college in the fourth semester, by obtaining – 9.63 (out of 10)**
- I was the **House Captain of my School.** Organized and managed many events, as part of my role.
- Participated and received appreciation at several debates, presentations & various competitions all throughout my school and college.

Personal Details:

- **D.O.B** : 19th December 1987
- **Passport Number** : J5005935
- **Marital Status** : Married
- **Languages known** : English, Hindi, Bengali
- **Current Address** : H006, Alpine Eco Apartment, Doddenakundi, Bangalore.
- **Hobbies** : Solving programming problems, listening to music, puzzling

Place: Bangalore, India

(Amitesh Anand)