Aanand Deepak Chakravarthy
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Proficiency:

Domain:

- Mobile Data Networking
- Telematics
- Android framework

Software/Languages:

- Java (expert)
- C++ (proficient)
- Python (intermediate)
- Good knowledge of linux, wireshark, git, gdb

Education Details:

- B.E. in Computer Science and Engineering from Thiagarajar College of Engineering ,Madurai with an average of 81% in all the semesters during the period 2003-2007.
- Higher Secondary from T.V.S. Lakshmi higher secondary school, Madurai with 80% during the period 2001-2003.
- Matriculation from T.V.S. Lakshmi higher secondary school, Madurai with 83 %.

Work Experience:

Projects Undertaken in LG Soft India (January 22nd 2010 – Till Date)

1.Tiger Telematics framework (Telematics) (2017 – Till date)

Tiger framework is a port of Android framework to c++ for use in telematics projects in LGE.
This acts as an interface between the applications and the hardware specific layers such as vendor RIL.

Responsibilities :

- I was responsible for the following major implementations
  - **Network recovery algorithm** – When device is not camped to network or there is no data connection for a time period of 16 minutes, then trigger flight mode ON/OFF. After trying trying this for a particular number of each for each RAT , restrict the network selection from “4G/3G/2G” to “3G/2G” and so on. After trying in all the RATs, restore the network selection to default value “4G/3G/2G”.
  - **Data filter implementation** – To save power, device transitions to NAD Only On mode. (In this mode, AP is suspended to RAM). If incoming packets are received by NAD, then the AP is woken up. This implementation involves enabling data filter mode where in only the required IP wakeup packets are received by the device.
  - **Data stall monitoring and recovery –** Monitor each data connection for sent and received packet count. If the sent packet is greater than 10 and received packet count is less than 3 in a duration of 3 minutes , then disconnect and re-connect the particular data connection.
  - **Initial data bringup** – Traveled to Korea and co-worked with NAD,RIL engineers for the initial data connection bringup for a particular telematics board.
  - **Automation tool for testing –** I created a tool for automatic sanity testing. The test cases can be written along with the expected input and output, also along with the number of iterations the test has to be executed.The results of the test output are written to an excel sheet.

2.Low Power Location Estimation (2016 - 2017)

Using GPS frequently is the main reason for battery drain in a majority of android mobile phones. This project involves estimation of the device location by NOT using GPS, instead by using the Cell the device is currently camped to.

The client knows the current cell its camped to , and requests the server for the location of the cell/surrounding cells. The client using triangulation estimates its position.

Responsibilities :

- Designing and developing various server components such as the webservice that interacts with the clients , loadbalancer that ensures high availability and balances the load across multiple webservice instances.
- Creation of tools for generating bulk JSON data for testing the maximum load that the server can handle.
- Using apache Jmeter to stress test the server simulating multiple simultaneous user requests of varying sizes.

3.Android Framework (2013 - 2016)

This project involves in adapting and extending the android frameworks across various LG mobile devices for various operator requirements.

Responsibilites :

- Handling LTE scenarios related to mobile data connection such Initial Attach, CSFB to legacy networks,IMS voice call handover to SRVCC.
- GPRS,EDGE,UMTS specific scenarios with respect to LG devices using Qualcomm and Mediatek chipsets such as data connection failures due to Location Area Update rejections,network initiated detach and so on.
- Working on customizing the mobile data components in android framework such as ConnectivityService,Telephony framework to ensure data connection requests of different data types such as IMS,DUN,etc are properly established and released.

4. Android framework/Browser/DownloadManager (2010 - 2013)

This project involves customization of android framework,native browser and the download manager.

Responsibilities:

- GANLITE implementation for US operator : In 2011, native android did not have support for VoWiFi/any other WiFi calling framework.
  - GANLITE is the operator's specific implementation through which 3GPP network is accessed from untrusted WiFi network for voice calls by emulating a virtual 3GPP network.
  - My responsibility was porting changes to ensure this feature works in LG devices and ensuring that this works as per the requirement in operator's live network.
- Implementation of SIM based bookmarks loading for native browser.
- Fixing issues related to Browser,such as page not rendered, page incorrectly loaded due to incorrect HTTP request headers.

Projects Undertaken in Wipro Technologies (June 25th 2007- January 22nd 2010)

1.Android Logging Framework

The project involved enhancement and customization of the logger framework of the android platform. This includes host side application changes in Java , target side modifications in c , sample application in Java to execute on the android platform for testing the new implementations.

Responsibilities:

- Understanding of the codebase of the Host side application with respect to logging and device detection.
- Addition of support for multiple channels between the host side and target side application.
- Implementation of the regular expression parsing of the Hash table messages on the host side.

2. RMS Platform (Remote Management Service)

The project was to develop a common reusable framework for remote management of devices. It involves monitoring the health of devices, along with providing software updates through a web based portal. The objective of this solution is to
1.To enable remote management solutions for different types of devices.
2. To be a scalable and extensible solution to include new features.
3. To provide Remote Management capability to monitor the health of devices present in the network Environment.

Responsibilities:

- Preparation of use case diagrams and class diagrams(UML) using Bouml during the design phase, as well as indentification of appropriate design patterns.
- Implementation of SOAP over HTTP communication between the client and the server.
- I was involved the development of all the modules in both the client and the server side related to Java.
- In the server side, wrote HTML, Javascript, JSP code for the webbased frontend of application.

3. Carplate and Traffic Recognition

The project involves the porting of car plate and traffic recognition applications from a windows based PC environment to a limited resources DSP based environment.

Responsibilities:

- Porting of the Opencv library function calls . This involved identifying and preparing wrapper functions for the functions used in the application.
- Changing the platform specific differences such as removal of IO operations, Win32 function calls which won't be available on the Dsp platform.
- Removal of Microsoft Foundation Class framework in the Traffic Recognition application and porting it to a console application.

Other open source projects : www.github.com/aanandc