

# Bakshi Gulam Mohammed Khan

<http://www.gulam.in>

## *Objective*

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To work on a project (R&D /cutting-edge technology) - where every assignment is interesting - where every day provides me an opportunity to learn something new - where there is an opportunity to contribute significantly to the field of work.

## *Summary*

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Software Engineer with 3 years of engineering software services experience for key network equipment vendors - Alcatel-Lucent & Dell. Proven ability and effectiveness in both corrective and adaptive maintenance projects. Result oriented professional with a thirst for knowledge and a passion to share the same with others.

## *Professional Experience*

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**Aricent**, Chennai - India

*Senior Software Engineer*

*July 2015 – Present*

- Combo Ports feature in S3100 boxes for Dell Networking R&D
  - Two out of the total ports in S3100 are combo ports - i.e. each of these two ports will support both copper and fiber medium.
  - Development of this feature was done in two phases. In Phase-I, a "hybrid mode" was designed and developed wherein active medium can be swapped on the fly. In Phase-II, a provisioning CLI was introduced so as to pre-provision the port as either copper or fiber.
- “phy firmware auto-upgrade” feature in S3100 boxes for Dell Networking R&D
  - S3100 supports 20G(2x10G) extension module called Optional Pluggable Transceiver Module (OPTM) for uplink.
  - Once OPTM is inserted, this feature checks the firmware version of external PHY and automatically upgrades the same if necessary.

*Software Engineer*

*Jan 2013 – July 2015*

- Maintenance of IP-DSLAM software for Alcatel-Lucent
  - bug reproduction; bug fixing; regression testing; release handling
  - Parity Tool (for NRNT-A) - Decoded the complex NRNT-A parity calculation logic from BCM SDK code in short time and incorporated it into Parity Tool.
- Prototyping/PoC of a Virtual Residential Gateway (vRG) for Alcatel-Lucent
  - setting up the Lab; Pruning protocol stacks & making them Lightweight; Cross-Compiling various SDN components (both proprietary & open-source) for the target platform.
  - Pro-active provisioning of ARP for OpenFlow switches
- Lightening - II for Dell Networking R&D
  - FIB6 to FIB porting: Analyzed the changes required when migrating from FIB6 to FIB of FTOS and captured those in Design Document; carefully considered all IPC message types handled by new FIB and ported the code accordingly.
  - “feature vrf” CLI command: The command to enable VRF was implemented by actually reading into a license file in the kernel file system which was an important requirement in business perspective.

- Blocking of Firebolt Linecard: to accommodate legacy linecard (Firebolt - which doesn't support VRF), all possible ways in which a port of Firebolt can be associated to a VRF were identified and were blocked by writing code in appropriate places.
- Prepared Unit Test cases for VRRP module and performed Unit Testing covering most of VRRP functionality.
- S3000 Development for Dell Networking R&D
  - Low-Level Design for IFM/IFA, REST, BMP were done for S3000. Considerable amount of effort was spent on analyzing REST module. Code changes for IFM/IFA (including Stacking implications), UFT, BMP & REST were done for S3000 Development.
  - UTP for 7 modules - IFM/IFA, UFT, LED, REST, BMP, SmartScripts & SDN were written and UT for the same was executed. Bugs raised during Dev\_Testing related to these modules were also fixed.
- S4000 Sustainance for Dell Networking R&D
  - Diagnostic Software (DIAG) related issues - issues in LEDs, Seven Digit Stack Unit Display, Power Supply Units, “restore factory defaults” etc. were fixed by me which helped team to make S4000 NO-OS release on time.

## *Technical Skills*

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### **Computer Programming**

- C [General, fork(), exec(), IPCs(PIPES, FIFO, Message Queues, Sockets), Network Programming]

### **Operating Systems**

- Linux and other UNIX variants

### **Computer Networks**

- Basics of TCP/IP Protocol Suite
- Tools: ping, traceroute, netstat, arp, ifconfig, wireshark

### **Programming Tools**

- Editor: VIM (with C-Tags)
- Code Browser: C-Scope
- Compiler: gcc
- Debugger: gdb
- Cross-compiler: powerpc & msp430 port of gcc; BuildRoot Toolchain.

### **Version Control/Configuration Management**

- CVS (GUI - WinCVS)
- Perforce

### **Defect Management**

- Bugzilla
- ExtraView

### **Content Management Systems**

- Joomla!, Wordpress, Prestashop.

### **Embedded Systems**

- Software and Hardware development with TI's MSP430

## Projects and Interests

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### A2RS

- An Application Aware Routing System for Software Defined Networks
- This PoC was developed as a plug-in for OpenDaylight SDN Controller
- Successfully able to route FTP & HTTP traffic in two different available routes between source and destination in a simulation network that comprises of six OpenFlow switches.

### Project F-Spell/V-Sign

- Accelerometer based gesture recognition system which maps hand gestures into ASCII characters
- Aimed as an assistive device for speech & hearing impaired; Later became an input device for any computing device

### Project “Problems”

- Planning for a non-profitable, crowd-sourced project for building a platform where people can post their problems which deserve a better solution.
- Students, Researchers & Entrepreneurs can then try to solve those to make this world a better place to live.

## Education

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### **BITS, Pilani**

*M.S., Software Engineering*

**2015**

*CGPA:9.06/10*

### **Crescent Engineering College, Vandalur, Chennai**

*B.E., Electronics and Communication*

**2012**

*CGPA:7.16/10*

## Certifications

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### PRISM

*Nalanda Training Centre – Gurgaon.*

04 / 2013

### Power Searching with Google

*Google*

07 / 2012

### Web Component Development Using Java Technologies

*NIIT · License: 10DGZZZZZ2428*

03 / 2010

### Typewriting (English) - Senior Grade (45 words per minute)

*Department of Technical Education - Tamilnadu - India · License: SC490331*

08 / 2005