### Gautam Bhat

Mantri Paradise, Flat U-302 Bannerghatta, Bangalore 560076 INDIA

Mobile: +91 9945132028

Email: [gautam.nbhat@gmail.com](mailto:gautam.nbhat@gmail.com)

**Current Company: WIPRO Technologies (Experience : 8 yrs )**

**Vision and Objective:**

To find a challenging position where I can apply and maximize my strong analytical, technical and problem solving skills.

**Key Skills:**

An accomplished software engineer with systematic problem solving skills with experience in full life cycle of software design process including requirements definition, prototyping, proof of concept, design, interface implementation, testing and maintenance.

**Technical Expertise**

**Languages:**

Java, C, C++, XML, Javascript, PHP, Adobe Flex, Bash, Python, VHDL, TCL/TK, MSP430 Assembly, x86 Assembly, SystemC..

**API's**:

Swing, Java NIO, FreeRTOS, FATfs.

**Concepts**: Networking, Embedded firmware development,Linux Kernel Development, Application Development,Design Patterns,FPGA,Object Oriented Development.

**Operating Systems:** Linux (Excellent and primary OS with experience in Ubuntu, Debian and Gentoo), Windows XP/Vista(Good), Android/Linux.

**Processors/Microcontrollers**: Intel x86, x86\_64, Texas Instruments MSP430 microcontroller, Xilinx microblaze softcore.

**Hardware Buses:** I2C, SPI, UART, Familiar with USB.

**Peripherals**: DMA,Accelerometer, SD Card, RTC, Timers.

**Communication Technologies:** Bluetooth development(Very Good in HCI, L2CAP and RFCOMM layers).

**Testing and Automation Tools:** WinRunner, Quick Test Professional(QTP) ,AutoIT.

**Databases:** Mysql, Postgresql, Apache Derby..

**Content Management Systems**: Drupal(Familiar).

**Software Tools and Configuration Management Tools**: VIM, Subversion, Redmine, Apache, GDB, Eagle PCB design tool, GCC, Debian Package management (apt), GIT.

**Hardware Debugging:** Digital Signal Oscilloscope(Agilent/Tektronix), Logic Analyzer. Ability to setup complex triggers, scripts, use DSO and LA functions to analyze/debug different bus protocols. Ability to setup test signals in software for performance and optimization measurements on a DSO and soldering components.

**Professional Experience**

**Renesas Mobile Connectivity Sustenance**

**Technical Leader 2013-Present**

This project involves maintenance of connectivity solutions for Renesas mobile development boards on Android Jelly Bean platfrom. The connectivity components includes NFC, Bluetooth, WiFi and GPS. The communication protocols involves to these peripherals are I2C for NFC, UART for Bluetooth and GPS.

Responsibilities

I was responsible for core troubleshooting and enhancements for bluetooth. I was also reponsible for troubleshooting for other teams in NFC, WiFi and GPS. The troubleshooting responsibilities involves code understanding and review, code enhancements, writing test components to these enhancements, debugging error logs and dumps, setting up tests, auto detection of peripherals. I was also involved in hardware troubleshooting and testing. This involves verifying the rise time,fall times of various signals, hardware design review and verifying compliance of signals using a Digital Signal Oscilloscope.

**ECG Holter**

**Technical Leader 2012-2013**

This project involves developing a portable ECG holter. The ECG data is captured in the SD card and sent via bluetooth to a monitoring station or a mobile phone which will send the data to the cloud for further ECG analysis.

Responsibilities:

I was involved in the design, development, Proof of concept development and testing from the product conceptualization to delivery. I was involved in the devlopment of drivers for accelerometer using I2C bus,RTC, Timers, LED indicators, SD Card using SPI, Event buttons and integrating Ethermind bluetooth stack to our existing code. The microcontroller used was a TI MSP430. I was also involved in the board bringup activity and debugging of hardware modules.

**Hyper Spectral Imaging Camera**

**Senior Software Developer 2011-2012**

This project involved creation of a custom Xilinx FPGA platform for a Hyper Spectral Imaging Sensor which interfaces with a PC via a PCIe bus.

Responsibilities:

Modified and optimized an existing Xilinx FPGA PCIe DMA driver for the Northwest Logic DMA IP. Wrote a kernel driver to pick the data from the DMA buffer and queue to the user space module. Coded the userspace interface to the kernel and handled the command and control of the camera system. Coded the firmware in the camera system to command and control the image sensor. This involved power sequencing using I2C, and camera control using the SPI bus. The microcontroller platform was a Xilinx microblaze softcore processor. I was also involved in the board bring-up and hardware review and debugging for a custom solution.

**Network On Chip Simulation**

**Senior Software Developer 2010-2011**

This project involves design and development of a Network on Chip for the defense industry. It involved development of SystemC modules for the various hardware peripherals such as I2C, SPI, UART, Interrupt Controllers, Crypto Core, Compression Core for the Xtensa softcore.

Responsibilities:

I was involved in the design and development of the Crypto Core (SHA, AES, Triple DES, MD5 hash) and the development of compression core using Zlib. Involved in the integration effort of these cores into the SystemC module.

Wrote a Linux Kernel driver for the compression core.

**HP Fossology plugin development**

**Senior Software Developer 2009 - 2010**

This project involves customization of HP Fossology code license scanning tool for the internal IP team.

**Responsibilities:**

This project involves creating of different plugins in PHP for HP Fossology code license scanning tool for the internal Intellectual Property office. The plugins involved a scheduler to better schedule the scanning, a code scanning progress intimation plugin which automates the intimation of progress via email, an LDAP plugin for employee login using their LDAP credentials. Numerous customizations were done to the front end of the tool using Javascript and PHP. A customized reporting plugin was developed to create reports in excel and pdf export. Deployment was done by creating a Debian APT package.

**Sony Music Anti Piracy P2P Behaviour Analysis**

**Senior Software Developer 2008-2009**

This project involves implementation of various P2P protocols for analyzing file sharing characteristics.

**Responsibilities**

This project involves implementation of various P2P protocols from scratch customized to analyze the behaviour of file sharing. The clients implemented were Gnutella2 (G2) protocol, Bittorrent protocol, Soulseek protocol(protocol reverse engineered). I was solely responsibile for design, development, coding and testing of the software.

**Sony Music Anti Piracy Efficacy Reporting Tool Web Application**

**Software Developer 2007-2008**

This project involves creation of efficacy reporting tool to provide various reports and trends of piracy and also command and control of the whole test infrastructure in a single web application portal.

**Responsibilities**

My responsibility in the project involves design and architect, develop and test the web application. The web application was developed with Adobe Flex frontend and PHP as the back end. The database used was MySQL. A charting component was developed using FlexCharts. Remote stubs on different machines were developed to remotely control the testing by using AutoIT as a daemon to control Winrunner. Various screens were developed to show the efficacy trends such as daily, weekly, monthly, Year to date etc. An interface was developed for the auditors to add the audited results onto the database using the web application tool.

**DVB SI Test Automation Tool**

**Software Developer 2007-2008**

This project involves automating the DVB SI stack developed by the client. The client needed an automated way to feed the DVB SI stream to their stack.

**Responsibilities:**

My responsibility in the project involved creation of a controllable test stub. This test stub has interfaces to accept commands to setup up the type of test and to set the test configuration parameters. It would interface with the testers excel sheet to run a particular test id by setting the test configuration. Once the test configuration was setup it would create a test stream with all the necessary headers and send the stream to the device under test via a unix pipe and queue. A logging component was developed to log the outcome of different tests.

**Sony Music Anti Piracy Efficacy Automation**

**Software Developer 2006-2007**

This project involves automation of user actions on different P2P clients. The client wanted to test its anti piracy P2P vendors SLA. For this they needed to automate the user actions of searching,selection,download and classification.

**Responsibilities**

My responsibility in this project involved design and architect, develop the automation infrastructure. Using Winrunner automation tool various user actions were scripted. It involves a modular design. The modules involved was scheduler,search,download and classify. The scheduler script would schedule different jobs. The search module would search in different P2P clients. The download script would schedule the downloads and remove the media based on the timings needed in the SLA. The classifier would classify and save the media in different locations for further audit.

**Company Training as new joinee (3 months) Sept 2005-2006**

**Awards and Recognitions**

1. Awarded Phoenix Award given to the best fresher in the horizontal.
2. Awarded Feather in my cap thrice for solving complex test automation problems in an unrelated team.

**Open Source Software contribution:**

1. Sole contributor of a bluetooth stack(HCI,L2CAP and RFCOMM) developed by myself for better understanding of bluetooth protocol for TI MSP430 micrcontroller series [ <http://code.google.com/p/utooth/> ] and for researchers to dissect the packets and conduct experiments on optimization and protocol measurements.
2. Sole contributor for a learning package development on MSP430 microcontroller[ <http://code.google.com/p/msp430g2-dev/> ], Basys2 FPGA[ <http://code.google.com/p/basys2-experiments/>] , MINI2440 ARM development board [ <http://code.google.com/p/mini2440-experiments/> ] aimed at providing components to experiment and learn.
3. Actively involved in open source software forums.
4. Developed a bittorrent client to analyze file sharing swarm.
5. Implemented Gnutella2 (G2) [P](mailto:P@P)2P protocol to analyze file sharing behaviour among users and the P2P characteristics of the protocol.

**Education:**

NMAMIT B.E. Computer Science and Engineering.