***JNANESHWAR B. TATUSKAR***

***(B.E. Comp. Sc.)***

***Cell No.:* +91-7038148138 *A4-503 ATUL NAGAR WARJE Email Id :***[***jtatuskar@gmail.com***](mailto:jtatuskar@gmail.com)

**+91-7676067665** **PUNE-411052** ***jnaneshbt@hotmail.com*** ***MAHARASTRA INDIA***

***PORTFOLIO***:

* Total **16 years of experience** inproviding **Software solutions.** Designed & developed low cost platform independent software products to **Embedded System's** and **Distributed Computing System** using **C/C++,Java, RTOS & Linux** in ***Smart Card, Fire & Security, Home Automation & Energy Management, Settop box, Cellular*** and **missile** technologies.
* Currently working as **Principal Engineer** in **Giesecke & Devrient India Private Limited Pune, India**
* Previously worked as
  + **Technology Architect** in **Infosys Tech. Ltd, Bangalore**, **India.**
  + **Senior Researcher** in **Lyra Info Systems Bangalore, India.**
  + ***Core Technical founder*** in **Celestial Systems Bangalore, India.**
* Strong experience in **Research and Development** based on technology standards *and* providing ***proof of concepts***
* Hands on experience in ***Architecture, design*** and **development** of **intellectual properties, middleware, framework and applications.**
* Hands on Experience in overall architecture of software systems for Open source products.
* Hands on experience in **Data structure & algorithms.**
* Brought up product development environment in multiple startup organizations and considered as ***Core technical asset.***
* Hands-on experience in **firmware development** forcustom hardware of various CPU like **ARM, Power-PC, MIPS, & 8051.**  Customizing **boot loaders, operating system** and **device drivers** (**storage devices, graphics devices, audio devices and sensors devices).**
* Hands-on experience on **Embedded Tools, cross compilers, emulators, system integration** and **porting** Linux kernel , several open source components, 3rd party components to multiple hardware platforms.
* Experience in **socket programming, multithread programming.**
* Graduated B.E***. Comp Sc. in B.V.B. CET*** from **Karnataka University Dharwad**, **Karnataka India** in **Aug 1997**

***PROFESSIONAL & TECHNICAL EXPERTISE.***

| **Domain** **Experience**: Smart Card, Smart Grid, Fire & Security, Home Automation and Energy Management, SettopBox, Mobile  Phones, Missile Technology.  **Technology standards**. MHP, MPEG2-TS. IPTV, Video On Demand.   **Protocols:** RTSP, RTP/RTCP, SDP, basic HTTP, ESMTP, DL645     **Scripting** **languages:**Unix shell script language, PERL     **Device Driver:** NAND, SD/MMC/SDIO host Controller.  Programmable Entry Panel, DMA Controller. Serial  Communication Controller.   **Sensors Driver:** Digital Temperature Sensor, Digital Wind Sensor, Humidity Sensor.   **Graphics Driver:** LCD device Drivers, Touch screen driver, Intel's Embedded Graphics Device.   **Tools**: Visual Studio, git, Subversion, CVS, Perforce, bugzilla, clearcase, Softscope debugger, Laughterbach , Keil SDK |  **Programming Languages**: C/C++, Java.   **RTOS:**Java Card OS**,** uCOS, RTXC, iRMK, Nucleus, RT Linux., TinyOS   Architected, Designed and Developed Middleware and Framework for  **settop box** and **Mobile Phones.**   Designed and Developed applications like Tiny browser, Video-On-  Demand, Sensor Security, Phonebook, SMS, Call Logs, SIM-ToolKit,  Missile Guidance algorithms.   Integrated 3rd Party's GSM/GPRS protocols library with Mobile phone  Middleware.   Integrated several 3rd party components, open source components  and cryptographic algorithms.   ***Cross Compiled and Ported*** several open source software like  Multimedia Home Platform, Firefox, Webkit, Konq/Embed Browser,  X-Server, GTK, DirectFB. QT, Qtopia. Openmoko, Android to various  Hardware platforms. |
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***EMPLOYMENT AND PROJECT DETAILS:***

## GIESECKE & DEVRIENT INDIA PVT. LTD. PUNE INDIA.

**Title:**Principlal Engineer **Domain:**Smart Card. **Duration:** Sept 2013 to till date.

**OS:** Java Card OS (JCOS). **Programming Language:**C/C++, PERL, Java

***Project Details.***

1. **Porting Java Card OS on smart card devices**

**Role & Responsibilities**: Firmware development i.e device drivers and Porting Java Card OS on different hardware chipsets & platform & automated build system

Smart Card is a plastic card with embedded secure microprocessor with small memory size and used to perform financial transactions (credit/debit card) and mobile phones to get connected with service providers network (SIM Card). Java Card OS is a technology that allows applets (Java applications) to run securely on smart card. This OS has platform specific firmware which provides basic functionality as secure access to on card storage, authentication and encryption. JCOS has to meet market requirements and has to run on many vendors’ hardware platforms. So it requires developing firmware and device drivers like UART, NVM, and Timers etc… for multiple smart cards’ platform

## INFOSYS TECHNOLOGIES LTD. BANGALORE, INDIA.

**Title:**Technology Architect **Domain:**Home Automation & Energy Management **Duration:** Oct 2010 to Dec 2012.

**OS:** Embedded Linux **Programming Language:**C/C++, python, Bash Shell Script

***Project Details.***

1. **Home Automation System : All-In-One ( AIO)**

**Role & Responsibilities**: Architect and Design of audio sub system, camera sub system, build system

In short, AIO is the device used for building **fire & security as well as energy management.** Whenever AIO detects fire or any door is unlocked, in auto-detect mode, it raises the siren and sends message to remotely based central station via VOIP, M2M (GSM) and PSTN network. And investigator visits the place in order to resolve the issue or to know reason for siren. Other technologies like Zwave, RF, Bluetooth, ZigBee, are used in AIO.

1. **Cisco Network Building Mediator**

**Role & Responsibilities**: Design & Development of protocol, integrating protocol with NBM Framework, SNMP MIB File

Network Building Mediator (NBM) is used to integrate disparate building systems onto the IP network. These systems can include HVAC, Lighting, Electrical and Refrigeration. It uses open standards such as BACnet or Modbus and proprietary protocols like Trane com4 or Johnson N2. The physically connectivity also varies between systems with the most common being RS232, RS485 and IP

## LYRAINFO SYSTEMS PVT. LTD. BANGALORE , INDIA.

**Title:** Senior Researcher **Domain: WiFi** and **WiMax. Duration:**Mar 2009 to Oct 2010

**OS:**uCos and Embedded Linux **Programming Language:**C/C++,Java

**Project Details:**

1. **Push Email (pMail) Client**

**Role & Responsibilities**: Architect & Design, Protocol Development,

pMail Client is targeted for embedded devices and used to synchronize data like email, contacts, calendar with mail server and transmit the emails over TCP/IP networks. It is based on the ***SyncML& ESMTP*** protocols. ***SyncML*** (Synchronization Markup Language) is used in mobile devices to synchronize the contacts, task list, and calendar and supports the push email technology. **ESMTP** (Extended Simple Mail Transport Protocol) is extended features to original SMTP protocol for sending the emails that supports graphics audio-video files and texts

1. **FIPS Project**

**Role & Responsibilities**: Re-architecting, design, integrated cryptographic library with boot loader. Integration of SDIO Driver & Linux. Integrated LZMA Compression Algorithm with uBoot and Linux binary image uImage for WiFi router

Federal Information Processing Standard ( FIPS) project is handled for the WiFi and WiMax modem. This is used for security purpose. Several cryptographic algorithms are integrated in bootloader, host device driver and MAC layer. Modem has WiMax support and WiFi access point. Generally DSL modem with WiFi AP support is connected to the WAN using DSL cable. In this project WiMax RF signal is used to connect to the WAN along with WiFi access point to connect to LAN and different Wireless client machine.

1. **CELESTIAL SYSTEMS PVT. LTD. BANGALORE, INDIA**

**Title:**Architect and Product Designer. **Domain:**Settop Box, IPTV **Duration:**April 2004 to Jan 2009

**OS:**Linux **Programming Language:**C/C++ & Assembly

**Project Details:**

1. **Universal Embedded Framework**

**Role & Responsibilities**: Architecting, Designing and implementation of complete Framework. UI Design.  Intellectual Property of the company.

UEF is designed & developed for embedded systems like set top box & mobile phones to handle user action and develop the embedded applications using well defined API. UEF supports features mentioned in next table.

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| * User Interface development environment. * Portable to any operating system or hardware * Portable to any graphics library * Electronic Programming Guide Manager For Set Top Box * Virtual Keyboard * Event / Message Handler | * Application Manager * Animated image support * Minimal Widget supports like scroll box, text scroll, image scroll, popup message, button * Multi theme support i.e. different look and feel of the UI. |

1. **Yantra Video Streaming Client**

**Role & Responsibilities:**Architecting, Designing and implementation of Complete Video Streaming client. Design & Implementation of protocols. Integration of Audio/Video Codecs, Device driver Development. Porting multiple of open source components. Integration of DRM, FEC library. Technical Asset to the company.

Yantra Video Streaming Client supports both Video On Demand (VoD) and IPTV functionality for IP SetTop Box.. In Yantra, Video/Audio is directly played from remote location of video server machine (RTSP server) over IP network i.e without downloading into local disk. This product is completely developed on the basis of Protocol standards RFC like RTSP, RTP/RTCP, SDP and Partial HTTP. It supports both unicast and multicast features. Yantra has decoder plugin manager feature to integrate any third party's component like decoder (mp3, mpeg4, mpeg2,), Digital Right Management (DRM) library and Forward Error Correction (FEC) Library

In Yantra, Live TV channels can be viewed through IP network. This is implemented using RTP/RTCP protocol. In Yantra, live TV program/Audio/Video which is received through IP network can be recorded and saved in the local disk as files. In Yantra, user can pause, rewind, and forward the live TV program/Audio/Video.

1. **iSTB Project**

**Role & Responsibilities:**Architecting, Designing and implementation of UEF. Design & Implementation of protocols, integration of Codecs. Porting open source components like browsers, GTK, QT, X-SERVER, DirectFB. Integration of Yantra Video Streaming Client and IPTV. Integration of open source browser with Framework. Implementation of Storage Device driver functionality like data read, write, error check and correction for NAND and SD/MMC card.

iSTB isthe project for IP SetTop Box in which user can view more than 1000 Digital TV (DTV) channels and IPTV channels. iSTB is based on Universal Embedded Framework and Yantra Video Streaming Client, open source applications like browser, email client, Video Conference etc.. In this project, IP Settop box, Video Server, IP TV server and EPG server is interconnected via IP network. User can see and search the list of TV channels and Radio Channels using Electronic Programming Guide.

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| • Architecture , Designed & Developed:  ***Universal Embedded Framework*** for embedded  devices like Set top box, mobile phones  • Designed & Developed of Widget and Graphics package  for embedded devices.  • Designed & Developed Memory Manager.  • Designed & Developed ***Tiny html Browser*** to fit into  300KB space.  • Development of Virtual Serial Port between two CPU's  • Ported IEGD Graphics Drivers for X-server.  • Ported **X-server, GTK+2.x, QT 3.x, DirectFB**  • Ported **Android, Moblin** and **Qtopia** to Mobile Devices.  • **Storage Device Driver:** SD/MMC, NAND devices. | • Study of Multimedia Home Platform standards (MHP) and  MPEG2-TS  • **Protocol Stack** development based on RFC's RTSP,  RTP/RTCP, SDP & basic HTTP  • Design & developed Portable Media Streaming Technology  i.e **Video On Demand** for NetBook ,SetTop Box & Mobile  Phones.  • Integration of h/w & s/w decoders like MPEG4, MP3, WMV  MPEG2-TS, MPEG4-TS  • Ported **Firefox, WebKit , Konq/Embed** browsers to Settop  Box & netbook.  • **GTK+2.x** Programming.  • **Graphics Device Driver:** LCD Display device driver. |

## PIXTEL COMMUNICATIONS PVT. LTD. BANGALORE, INDIA.

**Title:**Technical Lead. **Domain:** Mobile Phone. **Duration:**Jan 2001 to March 2004

**OS:**RTXC, Nucleus  **Programming Language: C/C++.**

**Project Details:**

1. **Man Machine Interface**

**Role & Responsibilities:** MMI Framework, application, design & development,memory management & device driver development.

MMI Middleware is based on Model View Controller architecture. In this architecture, Model contains the data which is updated from user action and other hardware module. View is for display of applications data and will be updated based on Controller's action. Controller handles all the user input, updates the view and Model's data based on the user action. This middleware is also architected based on layered architecture and has OS layer to port on different operating system. It has Mozilla engine to perform ECMCA scripting language.

Scripting language is used to define views and screens of the application. It has plugin layer to port on different 2G/3G protocol stack. Different applications like Phone Book, SMS, & other can be easily developed using MVC architecture and application plug-in can be easily integrated with GSM/GPRS protocol stack.

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| • **Middleware**: Mobile Phone's Man Machine Interface (MMI) Development for TDMA and GSM/GPRS Technology.  • Phone Book, SMS , MMS, Call Management, SIM ToolKit  • Integrated GSM & GPRS Protocol Stack. | • Integrated MMI with GSM/GPRS Protocol Stack  • NAND Device Driver.  • LCD Device Driver.  • Implementation of AT Commands in Mobile Phone.  • Yamaha's Polyphonic Audio Device Driver. |

## HONEYWELL INDIA SOFTWARE ORGANIZATION BANGALORE, INDIA.

**Title:**Senior Software Engineer. **Domain:** Home Automation & Energy Management **Duration:**July 2000 to Dec 2000

**OS :**Proprietary OS. **Programming Language:** C

Building Control System. Control the energy and rise an alarm when temperature crosses the threshold limit.

## BHARAT ELECTRONIC LTD. BANGALORE , INDIA.

**Title:**Project Engineer. **Domain:** Missile Technology. **Duration:**Feb 1999 to July 2000

**OS :** iRMK. **Programming Language:** C & Assembly.

* Missile Guidance Control System of TRISHUL.
* Operational Console System of Trishul and Shikari Project : Defense Project
* Program Entry Panel Device Driver
* Serial Communication Controller Driver

1. **SUNSHINE INTERNATIONAL PVT. LTD. BANGALORE, INDIA**.

**Title:**Software Engineer. **Domain:** Sensor Technology **Duration:**Mar 1998 to Feb 1999

**OS:** uCOS. **Programming Language: C/C++**

**Weather Analysis System.** Analysis of Temperature, humidity, wind, rainfall, velocity & direction etc., is using sensors under the guidance of Indian Institute of Science (IISc.) Professor, Bangalore

***EDUCATIONAL QUALIFICATIONS:***

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| ***Courses*** | ***Name of the institution*** | ***Board/University*** | ***Year*** |
| B.E. in Computer Science | B.V.Bhoomraddy College of Engineering & Technology, Hubli, Karnataka | *Karnataka University Dharwad, India* | **1997** |
| PUC-II | J.G.College of Commerce and Science, Hubli, Karnataka | Board of Pre-University Education, *Bangalore. Karnataka, India* | **1993** |
| SSLC | New English School, Hubli, Karnataka | *Karnataka Secondary Education Examination Board, Bangalore*. *Karnataka* | **1991** |

***PERSONAL DETAILS:***

1. **Full Name :** Jnaneshwar Balaji Tatuskar
2. **Father’s Name:** Balaji Tatuskar
3. **Date of Birth:**  16th July 1975
4. **Place of Birth :** Hubli ,Karnataka, India
5. **Sex:** Male
6. **Nationality:** Indian
7. **Languages Known:** English, Kannada, Hindi, and Marathi.
8. **Passport :** Valid Till Aug 2020
9. **Contact No :**  **+91-7038148138/91-7676067665**
10. **Email id : j**[**tatuskar@gmail.com**](mailto:tatuskar@gmail.com)**/**[**jnaneshbt@hotmail.com**](mailto:jnaneshbt@hotmail.com)
11. **Current Location:** PUNE, India.

*I hereby furnish that the above mentioned details are true to the best of my knowledge and if given a prospect will deliver the finest in my work.*

**THANKING YOU YOURS FAITHFULLY**

**(JNANESHWAR B.T.)**