

# RESUME

H. N. NAVEEN

navmys@gmail.com  
<http://www.naveenmysore.com>

## Career Summary

- ❖ **Master of Technology** in **Industrial Electronics**.
- ❖ More than **9 years of Hardware Design experience**.
- ❖ Design and development of **Complex high speed, multi-layer multimedia bring-up and production boards, Chip Characterization, Handheld product development, Ultra Low Cost (ULC) GSM handsets.**
- ❖ Development of Synopsys (LMC) Hardware models for processors and communication devices.
- ❖ **Hardware Skills** : Design of complex high speed multimedia test boards and Production boards, Chip characterization, Design of GSM handsets, Product Tear Down analysis, Board testing, validation
- ❖ **Hardware Tools** : Analog/Digital Oscilloscope, Thermonics T-2500, TPO4100, Logic analyzer, Spectrum Analyzer, CMU200, In-Circuit Emulators, JTAG emulator, Synopsys Hardware Modeler, Microcontroller programmers.
- ❖ **Hardware Platform** : NXP Media Processors (PNX1500, PNX1700, PNX100x), TI Calypso and NXP Nexperia 5110 Cellular phone platforms
- ❖ **Software Skills** : Device driver development,
- ❖ **Software Tools** : Schematic Capture (Orcad, ViewLogic), PCB Designing (Pads PCB), Gerber Validation (GC-PREVUE), HDL Simulation (VCS), Configuration management (CVS, Perforce).
- ❖ **Microcontrollers** : Cypress Microsystems PSoC CY8C27443, Zilog Z8Encore, Motorola MC68HC908, Microchip PIC24FJ
- ❖ **Interface Knowledge** : DDR2, PCI, Video, USB-OTG, I2C, I2S.
- ❖ **Languages** : 'C', Verilog HDL, Intel 8051 and ADSP21xx Assembly.
- ❖ **OS** : UNIX (Sun Solaris), Linux, Windows.
- ❖ **Soft skills** : Innovative and creative, Possess excellent analytical and communication skills.

## Professional Experience

From Sep 2007

### **Lead Engineer at Sasken Communication Technologies, Bangalore**

- Design of complex, multi-layer multimedia processor (PNX1005) bring-up and PCI based production board.
- Designed four types of boards for different variants of the processor
- Interfaces involved – **PCI, DDR2, I2S, HDMI, CVBS, S-Video, USB-OTG, LAN, SATA, IDE, UART and SD Card interfaces.**
- Involved in hardware design, board bring-up, board validation and chip characterization.
- Responsibilities include *Defining board specifications, component selection, datasheet study, interaction with component vendors, silicon ball assignment finalization, circuit design, Schematic entry, BOM creation, component placement, Device socket selection, PCB layout review, interaction with EMS house, board validation and testing, support to software team & customers and documentation.*
- Interaction with the mechanical design team for PCI bracket design and package box design.
- Designed innovative adapter to validate the new board with previous silicon.
- Create hardware training material on PNX100x for end customers
- *Received appreciation from customer on the boards designed.*

- *Received Team of Quarter award during the project.*

**Feb 2007 to Sep 2007 Senior Design Engineer at Sasken Communication Technologies, Bangalore**

- Tear Down Analysis of electronic products.
- Involved in hardware logic design.
- Responsibilities include *Study of product, step-by-step dis-assembly of product, Unique product feature analysis, Macro photography, BOM analysis, System cost analysis, product improvements, production cost reduction analysis, Preparation of Tear Down Report.*
- Tear down analysis done on several cellular phones and portable electronic devices.

**Dec 2005 to Feb 2007 Senior Design Engineer at Quasar Innovations Pvt. Ltd., Bangalore**

- Design of **Ultra Low Cost (ULC) GSM handsets..**
- Involved in hardware logic design.
- Responsibilities include *Study of reference platform, Defining specifications, Circuit design, Datasheet study, Component selection, Discussion with component vendors, Schematic entry, PCB layout review, Board testing and Documentation.*
- Interaction with the mechanical design team for Industrial design and mechanical design of handsets.
- Designed several ULC handsets based on **NXP** and **TI** platforms.
- Analyze and reduce TDMA noise in GSM handset.
- Interfacing a thermal printer to GSM modem.
- Designed **accessories for handset** like charger, dongles etc.,
- Managing a team comprising of PCB designer, component engineer, testing engineers.

**Jan 2001 to Dec 2005 Senior Design Engineer at Sasken Communication Technologies, Bangalore**

- Individual contributor in Hardware Modeling group. Hardware modeling is a proprietary technology of Synopsys.
- Developed hardware models for ARM7TDMI, IXP1200, IXE2412, V30MZ, MC68302, M80310, PPC405GPr, MPC7447A, I82C54 etc., devices. These models are used in board level simulation.
- Responsibilities include *Design of Device Adapter Hardware, Datasheet study, Component selection, PCB layout review, Board testing, Writing test scripts in Verilog, Simulating the device using Synopsys VCS, QA testing and Customer documentation.*
- *Verification of Synopsys Design ware PCI-X IP core.*
  - On-site work Involved creating test cases and Documentation.
  - *Received citation from the customer for identifying critical bugs in the IP core.*

**Jun 2000 to Dec 2000 Design Engineer at Infotech Innovation Research Lab (IIRL), Bangalore**

- Worked on MPEG1 Layer 3 algorithm

**Jun 1999 to Jun 2000 Project Trainee at Analog Devices India Pvt., Ltd., Bangalore**

- Designed hardware for Differential GPS receiver (DGPS).

## Edification

### Qualification:

- **Master of Technology (M. Tech) in Industrial Electronics**  
Institution - Sri Jayachamarajendra College of Engineering, Mysore  
University - Visveswaraya Technological University, Belgaum, 1998 - 2000  
Grade – First Class with Distinction, Percentage - 78% - **University 2<sup>nd</sup> Rank**
- **Bachelor of Engineering (B. E) in Electronics and Communication (E&C)**  
Institution - Sri Jayachamarajendra College of Engineering, Mysore  
University - University of Mysore, 1993 - 1997  
Grade – First Class, Percentage - 69%

### Additional Qualification:

- **Post Graduation Diploma in Human Resource Management**  
Karnataka State Open University (KSOU), Mysore, 2000
- **Post Graduation Diploma in Intellectual Property Rights Law**  
National Law School of India University (NLSIU), Bangalore, (Undergoing)

## Additional Information

### Training Programmes:

- Hardware Model Development, Sasken, Bangalore, Jan-Apr 2001
- Verilog HDL training, Sasken, Bangalore, Sep 2002
- Capability Maturity Model, Sasken, Bangalore, Mar 2003
- ISO-9001:2000 Quality Training, Sasken, Bangalore, Jun 2003
- NXP 5110LC Platform Training, NXP Bangalore, Sep 2006

### Publications:

- **Application Note AN2051, "Precision Digital Controller"**, Cypress Microsystems, USA, Nov 2002.
- **Application Note AN2xxx, "Interfacing PS/2 Keyboard using SPI Slave"**, Cypress Microsystems, USA, Apr 2005.

### Papers Presented/Submitted:

- **"A simple, low cost method for re-balling a BGA device"**, WACI paper submission, DAC-2009.
- **"BGA PWB: A Simple, Low Cost Method for Testing Complex Embedded Boards"**, WACI paper submission, DAC-2009.
- **"Intelligent Transportation: Fleet Management System"**, CYBERIA-2000, National level technical event, IEEE, SJCE chapter, Mysore, May 2000.
- **"SSTV: A new approach in High frequency low bandwidth picture transmission"**, CYBERIA-98, National level technical event, IEEE, SJCE chapter, Mysore, May 1998.
- **"Advanced Digital Communication Modes in Amateur Radio"**, Southern Region Conference of IETE, Mysore, June, 1998.
- **"Multimode Communication Processor for Computing at RF"**, CYBERIA-97, National level technical event, IEEE, SJCE chapter Mysore, May 1997.

### Achievements:

- **Achiever of Quarter – Technology** (AOQ – Q3-10) award for board design and chip characterization.
- **Team member - Team of Quarter** (TOQ - Q2-08) award for Missouri project, Sasken.
- **Team member - Team of Quarter** (TOQ - Q3-07) award for Telserra Project, Sasken.

- **University 2<sup>nd</sup> Rank, M. Tech Examinations**, VTU - 2000.
- **Distinctive Excellence** citation, **PSoC High Integration Challenge Contest - 2004** hardware design contest, Circuit Cellar, USA and Cypress Microsystems, USA.
- **Distinctive Merit** citation, **Zilog Flash for Cash Contest - 2003** hardware design contest, Circuit Cellar, USA and Zilog, USA.
- **Distinctive Excellence** citation, **Motorola Flash Innovation Contest - 2003** hardware design contest, Circuit Cellar, USA and Motorola Inc, USA.
- **Honorable Mentions** citation, **PSoC Design Challenge - 2002** hardware design contest, Circuit Cellar, USA and Cypress Microsystems, USA.
- **Rajiv Gandhi Award-98**, given by Rajiv Gandhi Foundation, New Delhi, presented by *Mrs. Sonia Gandhi* in Aug. 1998.
- **2nd Prize**, All India **Motorola Discover an Inventor Contest-1999**, for developing control system application using MOTOROLA MC68HC705P6A Microcontroller.
- **8<sup>th</sup> Place**, International Hunting Lions in the Air contest, Jan - 1997.

**Member:**

- Institution of Electronics and Telecommunication Engineers (IETE), New Delhi
- Institution of Engineers (India) (IEI), Kolkata
- Croatian Telegraph Club, Croatia
- Amateur Radio Society of India, Bangalore
- Bangalore Amateur Radio Club, Bangalore
- Youth Hostels Association of India, New Delhi

**Hobbies:**

- Participation in hardware design contests
- Thematic philately
- Vedic Astrology, Astronomy
- Amateur Radio
- Drawing and Free hand sketching