

SHRUTI GANGADHAR

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EDUCATION

Master of Science in Electrical and Computer Engineering Aug '15 – Dec '16 (expected)

University of North Carolina at Charlotte, Charlotte, NC. Current GPA: 4.0/4.0

Courses: Embedded Systems, Reconfigurable Computing, Control Systems. Ongoing courses: Advanced Embedded Systems, Computer Architecture, Real time Operating Systems.

Bachelor of Engineering in Instrumentation Technology

Aug '06 – Jun '10

RNS Institute of Technology (Visvesvaraya Technological University), India. Aggregate Percentage: 71.82%

SKILLS

Development tools: CCStudio, Visual Studio, GitHub, Code Compare, JTAG Debugger, MATLAB, OptiFDTD, RSoft's Photonic Component Design Suite, Cadence pSpice, Eclipse, Microsoft Office, Xilinx Vivado Design Suite, Renesas HEW, e-binder.

Programming: C, C++, Embedded C, Java

Operating Systems: Windows XP/7/10, Ubuntu, PrKernelv4 (PrOS), DSP/BIOS LINK

Communication Protocols: RS-232, UART, I2C, SPI, USB, Zigbee

Microprocessors & Controllers: 8085/86, 8051, PIC 16C6X, Atmel ATmega 16, ARM 9, RX63N, TI MSP430

Markup Language: HTML, LaTeX

Design Environment: Dialux EVO5.2, Adobe Photoshop CS6, Wordpress.

EXPERIENCE

AquariLED Lighting Solutions, Bangalore, India

Apr '11 – Apr '13

Senior Engineer- Lighting

- Built and debugged over 50 electronic sub circuits of LED Drivers (3W to 120W) and Microwave/PIR motion detectors and reported findings. Developed in-house driver designs and implemented designs from ON Semiconductor (IC NCP1351), Fairchild Semiconductor (AN 6921), TI (IC UCC28810), BP2808, BCD AP3706 etc. using tools like TI's WEBENCH, pSpice.
- Hands on application experience on multiple power conversion topologies like Linear, Fly-back, Step-down, Buck & Buck-Boost and lighting control standards like DALI.
- Performed photometric tests on LEDs and Luminaires using Integrating Sphere and Rotation Luminaire Goniophotometer; hence generating their optical characteristics like Chromaticity Parameters, CRI, Luminous Flux & Efficiency, Luminous Intensity Distribution, IES files etc. Aware of standards like IESNA's LM 79-80, TM21 for aging tests.
- Analyzed several LED chip's parameters such as electrical ratings, binning group and made recommendations on suitable LEDs for different kinds of lamps, luminaries and applications. The LED chips were from CREE, BridgeLux, OSRAM, SHARP, SemiLEDs, Honglitronic etc. (Series: XLamp, Lumenmax 3014 SMD, Mega Zenigata COB, Epistar Venus, BXCD Series)
- Performed vendor qualification on Honglitronic (primary chip and encapsulation provider) as a part of the development team of a downlight series. Overseas assignment on the same & trained on "LED Chips and various testing methodologies".
- Participated in trade fairs and developed channel partners generating business over 100K USD.
- Used Dialux Evo4 package to perform calculations related to lighting placement, luminous intensity and placement of intelligent sensors, achieving photorealistic visualizations on customer applications.

Symphony Teleca Corp., Bangalore, India

Dec '10 – Mar '11

Associate Engineer- Product Development

- Primary responsibility of application development for Automotive Industry - DRI(Digital Radio Infotainment)

- Worked on radio demodulation and integration of HD (Hybrid Digital) Radio into the system gaining understanding of iBiquity Digital's HD Radio protocol.
- Board bring-up and tested various features of the DRI software on Jacinto2 (ARM9 and TMS320 C64x+ core) Evaluation mode, reported key bugs related to audio transmission quality and data packets.
- Hands-on experience on the use of interrupts, timers, buffers (Ring & Ping-Pong).

Indian Institute of Science, Bangalore, India
Research Intern, Applied Photonics Lab

Jan '09 - Mar '10

- Undergraduate thesis: "Delay line analysis using waveguides"
 Analyzed several waveguide structures like 90degree bend, S-bend, Curved waveguides for True Time Delay (TTD) for optical buffering applications. Compared the results with TTD generated by optical elements like Fiber Bragg Grating, Micro ring Resonator, Mach-Zehnder interferometer.
- Comprehensive study on Optical Integrated Circuits and designed 3D and 2D step index wave guides, plotted Vb curves (MATLAB) and various TE & TM Modes (Mathematica).

ACADEMIC PROJECTS

1. Game Development using RX63N: A "Top Gun" themed game with obstacle dodging as its primary goal.
2. UART Baud Rate Detection using RX63N: Created a library to interface with UART on RX63N and to detect the baud rate, parity and data of the incoming signal.
3. Digital Oscilloscope using RX63N: Analog voltage value measured and displayed on LCD in a scrolling fashion similar to Oscilloscope.
4. Stepper Motor Driver using RX63N: A feature rich stepper motor driver (used ring LEDs on YRDKRX63N board that are akin to stepper motor coils) that operates in 3 modes: Full step, half step and wave drive, along with dual direction, speed control and auto shut down beyond specified temperature range of operation.
5. Digital Watch using RX63N: Designed and developed a menu driven digital watch with features such as Alarm, Stopwatch, Backlight and so on, using the on-board Real Time Clock module.
6. Wireless Communication using Xbee and RX63N: Established connection between the RX63N board and an Xbee module to communicate with other Xbees to transmit and receive data and decipher signal strength of coordinator Xbee.
7. Simulating Cross clock domain scenario in FPGA using Vivado: Designed a counter and FIFO that operate at different clock frequencies obtained from a mixed mode clock manager, instantiated IPs from Vivado's IP Catalog.

EXTRACURRICULAR ACTIVITIES

1. **IEEE Xplore**: Shruti Gangadhar, "*An Intelligent Road Traffic Control System*" (ISBN: 978-1-4244-5975-9, pg115- 119), IEEE TechSym 2010 IIT – Kharagpur, India.
2. A review paper titled "*MEMS: The atom of the future*" at a National Symposium on Electrical, Communication and Computers in TechHoriz'08 winning first place.
3. Second Place in a Robotics Contest (Programming a Maze Solving Robot) held at the annual technical event at RNS Institute of Technology.
4. Co-founder of the IEEE and ISOI (Instrument Society of India) Student Branch at RNSIT.
5. Attended various workshops in the field of electronics, including workshop on "*Open Source Embedded System Development using Beagle Board*" held at Cranes Software International Ltd, Bangalore as a part of VLSI Design and Test (VDAT) Symposium organized by IEEE and VLSI Society of India (July 2009).
6. Creative Head and Chief Designer of "*Apertura*", the annual college magazine during the years 2007 and 2008
7. Lighting Design Portfolio: www.facebook.com/livelightdesigns
8. Student Council Member organizing several technical and performing art events at RNSIT.