

SANTHOSH RAMANI
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Objective

To pursue a career in the field of Electrical Engineering in an organization, that will test and improve my abilities while at the same time, provide value addition to the organization.

Areas of Interest

Embedded System design, Embedded Controls, Automation and Robotics.

Visa Status

H-1B approved October 1, 2008.

Education

- Master of Science, Electrical Engineering (Embedded Systems), Dec 07 **Overall GPA: 4.0/4.0**
The University of North Carolina at Charlotte, Charlotte, North Carolina
- Bachelor in Instrumentation Engineering (B.E), Jun 06 **First Class with Distinction**
Vivekanand Education Society's Institute of Technology (VESIT), University of Mumbai, India

Work Experience

Microblade LLC, Madison, WI

Embedded Systems Engineer (Jan 08 -- present)

On the job accomplishments include design of modules based on the MicroTCA specification, project planning, hardware and firmware architecture design. Projects include:

1. Jaguar JTAG Switch Module (JSM)
 - Project lead and the hardware & software architect.
 - Analyzed FPGAs from multiple vendors and suggested the use of Altera Cyclone III FPGA.
 - Negotiated the price of Altera Cyclone III FPGAs with the vendor (Future Electronics).
 - Designed FPGA based hardware, which involved custom hardware written in VHDL and vendor distributed modules.
 - Designed and developed the firmware in C and created a Graphical User Interface in VC++.
 - Involved in testing of modules and customer support.
2. Panther Power Module
 - Suggested use of Atmel microcontroller as a cheap and efficient solution for controlling the power-up sequence of the module.
 - Involved in designing of the microcontroller based circuit.
 - Programmed the Atmel microcontroller to control the start-up and shut-down sequence of the module.

Sapphire Technical Solutions LLC, Charlotte, NC

Student Intern (May 07 -- Dec 07)

- Designed robotic-arm controller boards, which were part of light test fixture.
- Suggested and implemented use of Cadsoft Eagle Layout Editor for PCB design.
- Programmed the Rabbit microcontroller to communicate with front end application running on windows.
- Involved in system level integration and testing.

Mosaic Engineering Labs, UNC Charlotte, NC

Technical Assistant (Aug 06 – May 07)

Assisted students and faculty members regarding usage of software packages and computer applications.

Skills

- Programming languages: C, C++, Visual C++, VHDL (Hardware Descriptive Language), MATLAB
- Hardware Design Apps: Cadsoft Eagle (PCB designing software), Xilinx Platform Studio (FPGA synthesis and simulation tool), Quartus II (Altera ASIC and FPGA design tool)

- Version control (**TortoiseSVN**), project planning (**GanttProject**) and project documentation.
- Designing PCBs for digital and analog circuits (motor control circuits, power circuits, sensor interface)
- Worked with microcontrollers like **8051**, **Atmel ATmega**, **Reenas-M16** and **Rabbit-RCM4000**.
- Hands-on experience of communication protocol like **SPI**, **I2C**, **RS-232 (UART)** and **USB**.
- Worked with Xilinx **Virtex-II Pro** and Altera **Cyclone III** FPGA with Nios-II processor.
- Worked with **Linux 2.4 and 2.6** on a Xilinx Virtex-II Pro FPGA with PowerPC.

Relevant Course Work

Embedded Systems	Advanced Embedded Systems	Introduction to VHDL
Designing with USB	Reconfigurable Computing (FPGA)	Fault Tolerant Systems
Wireless Sensor Networks	Basic & Advanced Control Systems	Microprocessors (8085, 8086)
C,C++ Programming		

Academic Projects

- **North Carolina Space Grant: Robotic Device Design** (Dec 07)
Served as a consultant to undergraduates for circuit design, sensor interface and UART communication between Spartan-III FPGA and Renesas microcontroller.
- **Autonomous Robot for IEEE SOUHTTEAST Conference** (Mar 07)
Led a team of two undergraduate students and designed hardware & firmware of an autonomous robot.
- **USB Powered Data Acquisition System** (Dec 06)
Developed a GUI based data acquisition system using Cypress USB Development board and an ADC circuitry to acquire data at a sampling rate selected by the user.
- **Electromagnetic Pump System** (Dec 06)
Worked in collaboration with Mechanical Engineers from UNC Charlotte and designed a microcontroller based circuit and firmware, to control the pumping action.
- **Automation of Mercerizing Process** (May 06)
B.E. Final year project at Potence Controls, Mumbai, India
 - Successfully led a team of four engineers to solve an existing problem in the Textile industry.
 - Designed the hardware which included Atmel microcontroller based circuit, power circuit and sensor interface.
 - Programmed the microcontroller in C to interface and sample conductivity measuring sensors.
- **PRUTHVI-2 Robotic Research Platform** (Jan 06)
 - Involved in microcontroller based PCB design, programming and sensor interface.
 - Won 3RD PRIZE IN ELECRAMA 2006 (International Engineers Project Platform).

Activities

- Awarded the Student Achievement Award in spring 2007 at UNC Charlotte.
- Member of IEEE student chapter at VESIT, India and UNCC, USA.
- Participated in IEEE Southeast Conference at Virginia in spring 2007.
- Participated in various technical events, Article and Paper presentations organized by ISA student Chapter.
- Active member of DEBSOC (Debating Society), SFE (Students' Forum for Electronics) during my undergraduate studies.