

SONIA THAKUR

9548, University Terrace Drive, Apt K, Charlotte, NC -28262
E-mail: sthakur@uncc.edu, Phone: 704-451-7921.

Objective

To secure a challenging position that utilizes my engineering education and technical skills in the field of embedded systems, computer networks, wireless communication and software testing.

Educational Qualifications

The University of North Carolina, Charlotte (Expected Graduation December 2006)
M.S, Electrical & Computer Engineering.

Thesis: *Embedded Linux platform to collect, analyze and store critical data for the navigation of an autonomous Vehicle.*

The University of Amravati, India.
B.E, Electronics & Telecommunication.

Work Experience

GE Energy, Melbourne, FL Jan 2006 – Aug 2006

Quality Assurance Intern - Assisted in analysis of applications to generate detailed test cases using lifecycle work products. Implemented pre-defined test cases as test scripts for automated execution. Performed analysis of test failures and report defects using the defect tracking system Clear Quest and implemented source code version control through Clear Case. Assisted in test case tracability. Participated in reviews of lifecycle artifacts to ensure the quality of the technical implementation.

The University of North Carolina at Charlotte Aug 2005- Dec 2005

Teaching Assistant, Department of Electrical and Computer Engineering Jan 2005-May 2005

Instructed students in the Instrumentation and Networks Lab and assisted them in the computer simulation of digital circuits using both PSPICE and MatLab.

Research Assistant, Department of Electrical and Computer Engineering June 2005-Aug 2005

Worked with Nekton Research, Durham, NC, on an Environmental Sensor board called Biobay. This board consists of 16 Clam sensors. The magnitude of contraction or expansion of the Clam is measured by the Hall Effect sensors. The analog data from the Hall Effect sensor is then send to MX1270 (12bit, 8channels ADC). The PIC16F876A Microcontroller then transmits the ADC data to SBC via RS-232 interface.

Graduate Assistant, Department of Education Leadership Aug 2004-Dec 2004

Assisted professors in transcription, secondary research and data processing.

Primus Telecommunication Pvt Ltd., New Delhi, India Nov 2003-June 2004

Technical support – Provided Voice over Internet Protocol (VoIP) solutions, Setup lease line wireless network (LoS).

Rb Comtec, New Delhi, India Aug 2002 -Oct 2003

Technical Support - Troubleshoot, maximized network utility, expedited problem resolution, updated and upgraded system software for implementation and optimization of IP telephony networks.

Tata Telecom, Gandhinagar, India May 2001-July 2001

Quality Assurance Intern - Undertook the testing phase of Area 1000 EPBX system. Tested and programmed multiple features provided by PBX. Involved understanding and conceptualizing the working of the PSTN network.

Computer Skills

Engineering Software: Mat lab 7.0, Orcad 10.1, Cadence PSpice, Verilog/VHDL, Renesas and PIC IDE.
Microcontroller: ARM, Atmega48, PIC16F876A, and TI MSP430.
Languages: C, Bash Script, and Assembly Language.
Operating Systems: UNIX, Linux, Sun Solaris, Windows (98/XP/NT)
Tools: Clear Quest, Clear Case, Logic Analyzer, Oscilloscope, and Multimeters.
Networking: TCP/IP, OSI Architecture, Wireless Standards, 802.11, Zigbee, Bluetooth.
Software Packages: Frame Maker 7.1, Microsoft Word, Excel, and Visio.

Thesis

Embedded Linux Platform to Collect, Analyze and Store Critical Data for the navigation of an Autonomous Vehicle. The research concentrated on the development of a reliable communication system between sensors and embedded platform. The data acquisition system provided reliable and timely information, which is then analyzed in real time or remotely to estimate the state of the measured environment.

Projects

- Programmed **PIC16F876A** Microcontroller using CCS compiler. The data was logged from MX1270 using SPI and was set for a receiver interrupt to send the data to SBC at the sampling frequency requested by it.
- Designed an 8 bit Microprocessor using VHDL and wrote Test programs to check the behavior of the microprocessor.
- Research paper on Vector Parallel Processor, which described the architecture of VPP 500 and also the design and advantages of the crossbar network.
- Designed the PCB layout for a small six-legged robot called “Stiquito” using Orcad tools and programmed it to walk for one degree and two degree of freedom movement. The Microcontroller used was **ATMEL’s ATmega48**.
- Two **MSV30262-SKP** boards were interfaced using Optical Fiber cable. The two boards were programmed to communicate through both UART and Serial I/O.
- **MSP430** was programmed to run round robin and transmit data to **MSV30262-SKP** board.
- Designed IIR and FIR digital filters in C++ and analyzed the results by means of project interface executable program “pcore”.
- Simulated Rayleigh fading channel using Clarke’s Model. The average duration of fades and level crossing rates was also observed.
- Simulated a binary FSK communication system for Coherent FSK receiver.
- Research paper on “Scatternet formation in Bluetooth Networks”, which addressed different approaches to the problems of device discovery and scatternet formation in multi-hop Bluetooth networks.

Relevant Courses:

Introduction to Embedded System	Advanced Embedded System	Wireless Communication
Digital Signal processing	Computer Communication Network	Computer Architecture
Advance Theory of Communication	Introduction to VHDL	

Responsibilities & Achievements

- Member of Phi Beta Delta International Honor Society, 2005-2006.
 - Executive member of Indian Society of Technical Education. (I.S.T.E) 2000-2001
-