

ROHIT RAWAT

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OBJECTIVE

Looking for an internship, that utilizes skills in signal processing, programming or embedded systems.

SUMMARY OF SKILLS

- Excellent programming skills: C/C++, Java, MATLAB, implementing algorithms, embedded systems.
- Pattern recognition, data analysis and modeling, image processing, neural networks.
- Microcontroller families: PIC18/24/32, AVR, MCS51.
- Hardware design, interfacing of analog and digital peripherals, simulation and prototyping.
- UNIX shell scripting, Perl, Expect.
- Good knowledge of Windows and UNIX operating systems.
- Experienced with ClearQuest, Subversion, GUI development, website design.

EDUCATION

PhD (Electrical Engineering) University of Texas at Arlington, Arlington, Texas. May 2013

- Topic: An improved feature selection algorithm using piecewise linear networks.

MS-Thesis (Electrical Engineering) University of Texas at Arlington, Arlington, Texas. December 2009

- **GPA: 4.0; Awarded the Dean's Masters Fellowship for the program.**
- **Thesis topic:** An improved piecewise linear network.
- Received the **Image Processing & Neural Networks lab scholarship** for summer 2008.
- **Graduate Teaching Associate** since fall 2008.

Publications:

- B.H.K. Aswathappa, M.T. Manry, R. Rawat, "Optimal output gain algorithm for feed-forward network training," The 2011 International Joint Conference on Neural Networks (IJCNN), pp.2609-2616, July 31 2011-Aug. 5 2011.
- P. Jesudhas, M.T. Manry, R. Rawat, S. Malalur, "Analysis and improvement of multiple optimal learning factors for feed-forward networks," The 2011 International Joint Conference on Neural Networks (IJCNN), pp.2593-2600, July 31 2011-Aug. 5 2011

Graduate coursework: Embedded Microcontroller Systems, Advanced Embedded Systems, Advanced Electronics, DSP Microprocessors, Digital Signal Processing, Statistical Signal Processing, Statistical Pattern Recognition, Computer Vision, Digital Image Processing, Random Signals & Noise, Neural Networks, Speech Processing, Design and Construction of Compilers.

Bachelor of Technology (Electronics and Communication Engineering)

Guru Gobind Singh Indraprastha University, New Delhi, India. Aggregate: 82.5 % 2003-2007

- Relevant Coursework: Digital Integrated Circuits, Analog Electronics, Microprocessors, Embedded Systems, Computer Architecture, Data Structures, Operating Systems, Computer Networks, DBMS, Software Engineering, VLSI Design.

EXPERIENCE

Embedded Software Intern, Motorola, Fort Worth. June, 2009 – Aug, 2009

- To develop an Ethernet based interface to replace an RS-232 console based management interface for a cellular base station radio controller as proof of concept.
 - Deployed an embedded web server on VxWorks, interfaced web server with HAL commands.
 - Designed a Java applet based GUI interface which was intuitive and remotely accessible.
 - Wrote a web browser based console in JavaScript to guarantee pre-existing functionality.

Embedded Software Intern, Motorola, Fort Worth.

June, 2008 – Aug, 2008

- Wrote a Java GUI tool to generate and edit configuration files for a DSP memory manager, with support for future processors with multiple cores. Involved parsing ‘C’ language files to populate the interface, and propagate changes back to the source files.
- Automated deployment and sanity testing of new firmware/physical software releases on a hardware frame with Perl and Expect scripts, working across multiple machines. Upon returning in 2009, I was happy to see that they were still in use and saving people a lot of time.

Research Assistant, Department of Computer Science and Engineering, UTA

Jan 2008 – May, 2008

- Consolidated two transceiver boards and an MCU into single design and a compact PCB layout.
- Created custom parts for the EDA software KiCAD which had a limited component library.
- Operated a CNC PCB milling machine for in-house prototype fabrication.

Intern, National Physical Laboratory, New Delhi, India.

May, 2006 – July, 2006

- Designed a specialized waveform generator critical for a project. Adapted a CG line drawing algorithm into highly efficient assembly code to produce precision sloped, microseconds wide waveforms - on a not so fast microcontroller. Waveform characteristics could be calibrated by a GUI with graphical preview running on a PC.
- Designed a PC based multi channel data logging system for recording experimental and environmental parameters in the lab. Included software for real time graphical monitoring and viewing log archives.

Project, Embedded Microcontrollers - Embedded HTTP Server

- Part of a wireless home automation project (EE 6314) with remote access via an HTTP server running on a severely resource limited 8-bit PIC MCU. Wrote the TCP/IP stack in C starting from scratch; did not use Microchip supplied stack. Coded a dynamic web page generation scheme which could automatically handle segmentation of large pages (relative to MCU’s memory), providing a common API for all teams to present their data. Served as the **team lead** on the Ethernet side, integrating code within our team and with the wireless group.

OTHER PROMINENT PROJECTS

- Implemented high speed DMX-512A transmission and reception on PIC MCUs to demonstrate the working of the industry standard protocol and to extract maximum performance from the PICs.
- Implemented panoramic image stitching using SIFT features.
- Implemented a multi stage Ada-boosted classifier for face detection in MATLAB.
- Improved the Image Processing & Neural Networks lab product ‘NuMap’ with a new graph plotting library in VB – more customizable and sans the flicker of the MS-Chart control used earlier. Received a scholarship for the effort. Wrote an improved NuMap module for Piecewise Linear Networks.
- Designed a serial programmer for Atmel microcontroller with simple hardware, and an easy to use GUI burning application.
- Wrote an easy to use C++ library to create GUIs with mouse support for MS-DOS programs, in high school. Wrote everything from scratch using only graphics primitives like lines and filled polygons.

HONORS

- Member and former President of the UTA chapter of Tau Beta Pi Engineering Honor Society.
- Member and chapter officer of Eta Kappa Nu Electrical & Computer Engineering Honor Society.

EXTRA CURRICULARS

- Regular volunteer at local park cleanups.
- Attended soft skills workshops on People skills, Team chartering, Group process, Effective presentation skills & Analytical problem solving.