

# Manoja P Rao

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## Objective

Competency development in Embedded Domain with particular focus on Microcontroller Architecture, Real Time Operating Systems Device Drivers and Firmware.

## Education

**University of North Carolina at Charlotte, NC**

GPA: **4.0/4.0**

**Masters in Electrical Engineering,**

Expected Graduation Date : **Fall 2012**

**Courses :** Reconfigurable Computing, Embedded Systems ,Algorithms and Data Structure, Real Time Operating Systems, Mobile Application Development, Computer Architecture, Wireless Sensor Networks.

**B.M.S College of Engineering,** Visvesvaraya Technological University, Bangalore, India

GPA: **3.79/4.0**

**Bachelor of Engineering**

**Sep 2004 – Jun 2008**

## Work Experience

### 1. Robert Bosch Engineering and Business Solutions Ltd,Bangalore

**Senior Software Engineer, Project Leader for Volvo Projects**

**Jul 2008 – Jul 2011**

Involved with projects on Vehicular Diagnostics over CAN using 14229/14230.Experience in EEPROM and power stage device drivers. Worked on Flash programming.Familiarity with make file based build process. Implemented many scripts and applications for build Developed and implemented Relay diagnosis feature. Three months of work experience in Stuttgart, Germany.

### 2. Bharath Electronics Ltd, Bangalore ,Project Intern

**3-Months /Summer 2008**

The project was to simulate RADAR channels using FPGA. The simulator was basically used to test RADAR displays by BEL Ltd. A serial interface through which the simulator could be configured to give outputs corresponding to different depth and angle of the target was implemented. The FPGA used was Xilinx 3e and the coding was done using VHDL.

## Academic Projects

- Temperature Sensor accessible over the LAN using **RX62N developmental board** running **µC/OS-III**.
- Computation of **normalized edit distance and longest common subsequence** using **a dynamic programming** approach.
- Shortest Paths in a Network using **Dijkstra's shortest path algorithm**
- **Linear Predictive Coder** (Senior Design Project):The project involves MATLAB simulation of the LPC. The speech is represented in terms of filter coefficients for an all-pole IIR filter ,voiced or unvoiced decision bit and gain. Levinson Durbin method is used to solve the matrix used to calculate the coefficients.
- Baton (Project for IIT Kharagpur):Two line followers have to emulate relay runners .A baton has to be passed to other robot by the first robot after finishing traversing the track. TSOP1738 is used as proximity sensors, IR diodes for line followers.
- Mars Rover (For IIT Madras):A micro controller based robot which uses **SONAR** and Optical sensors (Infra-Red diodes), with a **89S52 microcontroller** and software written in C language compiled by the cross compiler **KEIL**. Has line following and object detection capabilities

## Technical skills

**Programming Skills:** C, C++, Java, nesC, Assembly,(80x86,C167,ST10F276,RX62N8),CAPL,PROF, Android Application Development

**Real Time Operating Systems:** ERCOS-OSEK ,µCOS III,TinyOS

**Platforms:** Microsoft Windows and Linux

**Protocols:** SPI, ISO14230 , ISO14229 ,CAN2.0

**Tools:** MATLAB, Microsoft Visual Studio, CANALYSER, INCA,HEW, QEMU,GCC,GDB,Eclipse, Xilinx Platform Studio,Xilinx SDK,Rational Clearcase,Clearquest

## Achievements, Interests & Miscellaneous

- Completed **A2 level of German Language** training
- **Vice-President** of Indian Student Association , Triveni at UNCC.
- Event Organizer for the Robotics Competition for University Level Tech fest called "Utsav" in the year 2007.
- Coordinator for the quiz completion in the department festival "Ayaskanta" in the year 2006.
- Was awarded with full tuition scholarship by Indo-Japan cultural foundation through Vidyapita, Bangalore.
- Part of a theatre team called "No Idea".