**Arun Shivprasad**

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**Career Summary:**Embedded Engineer with 7.5 years experience in Medical Product development involving firmware using Embedded C on microcontrollers and hardware design. Worked with hardware debugging tools like oscilloscope and proefficient in reading Pcb schematics. Adept at tools like Visual studio 2010 using C#. Domain worked on are medical equipments, motion control, smart cards and industrial automation.

**Technical Skills:**

**Programming:** C, C#.

**RTOS:** QNX, Embedded Linux

**Hardware Design:** Protel

**Processor Architectures:** NXP 89V51RD2, Silabs C8051F020, ST Microelectronics ST10R167, ARM 3358 Cortex A8, Renesas M30245, Rabbit Microcontroller, Pic 18F2550.

**Communication:** UART, I2C, SPI.

**IDE related:** QNX Momentics IDE, Kiel Microvision3, Microsoft Visual Studio – 2010.

**Other:** Rational Rhapsody, Perforce, IEC 62304

**Work Experience:**

**Organization: Span Biotronics, Mumbai** (**Duration:** September 2009 – February 2013)

**Designation:** Embedded Engineer.

**Project**: Interfacing Smart card to Medical instrument

Duration: November 2011 to April 2012.

Ported Atmel’s cryptomemory firmware written for AVR controller to Rabbit Microcontroller.

Developed application firmware in C for smart card interfacing to medical device using I2C bus. Work involved developing i2c routines to read and write into smart card configuration zone and user zone.

Language: C.

Processor: Rabbit Microcontroller

**Project:** Cryptomemory programming tool using C# and C for programming eeprom smart card using 8051 microcontroller (June 2010 to February 2013.)

* Was responsible for planning and developing embedded firmware and windows application software for programming smart card application based on Atmel cryptomemory.
* Embedded software involved developing modules for 8051 microcontroller to program cryptomemory AT88SC0808 using I2C protocol. The 8051 receives command and data from PC using serial port and writes the data into the cryptomemory.

Language: C, C#.

Processor: 8051

Tools: Kiel C compiler, Visual Studio 2010.

**Organization:** Robonik India Pvt Ltd, Mumbai. (**Duration:** May 2009 to August 2009)

**Designation:** R&D Electronics Engineer

**Project**: Auto Coagulometer.

**Description**: Firmware and hardware development of module for reading of 8 channels of sigma-delta 24-bit ADC for measurement of light intensity using photo-diodes. The adc was read using a serial interface to 16-bit Renesas M30245 microcontroller using C language.

**Tools:** C language, 16-bit controller Renesas M30245.

**Organization: Randox Laboratories, Mumbai. (Duration:** June 2006 to Feb 2009)

**Designation:** Senior Embedded Software Engineer

**Project**: Stepper Motor controller software using Trinamic 428 chip.

Duration: October 2006 to Jan 2008.

Developed application firmware in C for controlling peristaltic pump and optical filter motor for blood analyzer using motion control chip TMC428 and microcontroller ST10R167.

Language: C

Processor: ST10R167

Tools: Kiel Microvision.

**Project**: Fujitsu thermal printer software functionality on ST10R167 processor.

Processor: ST10R167

Duration: June 2008 to January 2009.

Developed firmware in C for printing test reports and graphs with Fujitsu thermal printer using ST10R167 microcontroller.

Tools: Kiel C compiler, Language C.

Processor: ST10R167

**Project**: QNX Module for motion control

Duration: January 2008 to June 2008.

Developed software in C for QNX on x86 machine for communicating using serial port on x86 machine to send command to microcontroller to control stepper motor using TMC 428 motion control IC.

Tools: QNX Momentics IDE.

**Organisation: Medicomp, Mumbai.** (Duration: March 2005 - June 2006, 1.2 years).

Designation: R&D Engineer.

**Project**: Hardware designing of 3-lead Electrocardiogram (ECG)

Duration: April 2005 to March 2006

Project involved designing of 3-lead ECG circuit using orcad which was interfaced to c8051F020 processor. Design involved analog front end using instrumentation amplifier which was coupled to the amplifying stage using opto-isolator and dc-dc isolated power. supply. The output was coupled to 8-bit adc of microcontroller. The port pins were used for digitally selecting gain and lead selection at input.

Tool: Protel

**Project:** Displaying parameters using 8-bit Cygnal C8051F020 microcontroller.

Duration: April 2006 to June 2006.

Making firmware in C language for displaying the health parameters using 8-bit Cygnal

C8051F020 microcontroller for pulse oximeter and non-invasive blood pressure instrument. The software communicated with modules using serial lines and displayed the parameters on 240 \* 128 LCD.

Tool: Kiel microvision 2, Language: C

Processor: C8051F020

**Organisation: Acon Measurements, Mumbai**. (Field Engineer: Nov 2002 - Nov 2004)

Manufacturing & Commissioning of industrial automation gauges used for measurement of thickness of steel rolls in steel mills. Responsible for interfacing of sensors and pneumatics to PC based control systems based on schematics.

**Other Courses: (**Duration December 2004 to March 2005**)**

Attended embedded system course at CMC Mumbai for VxWorks. Project involved reading power, voltage, current from a power measurement device.

**Final Year B.E Project** (2000 – 2001):Digital Energy Meter based on 8051 microcontroller**.**Designed hardware for reading voltage and current using 8013 analog multiplier and converting it into pulses by using LM331 Volt to Frequency converter and counting pulses using 8051.

**Education:**

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| **Degree** | **Year Of Passing** | **University** | **Percentage** |
| B.E. Instrumentation | 2001 | Mumbai | 57 % |
| H.S.C. | 1996 | Maharashtra | 68 % |
| S.S.C. | 1994 | Maharashtra | 85.71 % |