Elton Francis Pinto

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Abstract



6+ yrs of experience in development of various Industrial and Medical system using various hardware ( PXI, cRIO, PLC, Microcontrollers) and software platform ( LabVIEW, PLC, Embedded C, Matlab) in research based organization.

Skills



1. Software: LabVIEW, LabVIEW FPGA, LabVIEW Realtime, LabVIEW OOPS, Matlab, Xilinx ISE
2. Hardware: 8051 and ARM cortex-M4, Embedded C, VHDL, PLC
3. Protocol : RS232, I2C, SPI and CAN
4. VHDL programming on FPGA.

Work experience



Society for Applied Microwave Electronics May 2016 — Present

Engineering and Research (SAMEER)

Development of MRI spectrometer

**Project Details:**

The development of transceiver system for MRI scanner. Realization of Pulse Sequence in an accurate and synchronized fashion as described in the Pulse Sequence Data file.

Team Size: 4



Role: Team Member



Hardware: Chassis (PXIe-1082), CPU (PXIe 8135) ADC (PXIe 5170R), AWG (PXI 5451), FPGA based I/O card Software: LabVIEW, Labview FPGA



Responsibility: Firmware development for generation of various RF signals and associated control signal for MRI system. Development of digital receiver.



Implemented design loops patterns such as state machine, Master-Slave, FPGA code, DMA FIFO, Rendezvous for synchronization, Queues & TCP/IP for data transfer.



Society for Applied Microwave Electronics Jan 2016 — May 2016

Engineering and Research (SAMEER)

System Engineer for Vacuum Assisted RF Dryer

**Project Details:**

Vacuum Assisted RF dryer (VARF) is an industrial high power dryer based on the principle of dielectric heating at lower atmospheric pressure. It operates at 27.12MHz and uses 25kW triode tube for RF generation. Applicator plates are used to apply the RF to the product.

Team Size: 3



Role: Embedded Engineer



Hardware: Siemens CPU S7-200XP PLC, HMI



Software: Microwin step 7 PLC software, ESA polymath for HMI programming



Responsibility: Coding for control and monitoring of all interlocks in PLC and GUI development. Control of



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conveyor speed, vacuum level, applicator plate to product spacing and monitoring of tube & filament current, tube temperature, door interlocks, blower interlocks, arcing interlock forms the essences of the code.

Society for Applied Microwave Electronics May 2012 — January 2016

Engineering and Research (SAMEER)

Firmware developer for Multi-Leafed Collimator (MLC) system

**Project Details:**

The development of indigenous MLC used for cancer treatment by radiotherapy. MLC is a device that shapes the X-ray beam as they exit the Linear Accelerator machine to conform to the shape of the patient's tumour. It is achieved by moving 80 independent tungsten “leaves” in and out of the path of the X-ray beam in order to block it. Simultaneous and precise electronic motion control of all the leaves is the expertise involved in this project.

Team Size: 4



Role: Technical Team leader



Hardware: c-RIO 9025, CAN and Digital I/O c-series module



Software: LabVIEW Real-Time Module, LabVIEW FPGA Module, CAN protocol.



Responsibility: Firmware development for the electronic movement mechanism of eighty leaves using LabVIEW. GUI development for operator.



Society for Applied Microwave Electronics April 2011 — May 2012

Engineering and Research (SAMEER)

System Engineer for RF DRYER

**Project Details:**

RF dryer is an industrial high power dryer based on the principle of dielectric heating. It operates at 27.12MHz and uses 25kW triode tube for generation of RF. Applicator plates is used to apply the RF to the dielectric product.

Control of conveyor speed, applicator plate to product spacing and monitoring of tube & filament current, tube temperature, door interlocks, blower interlocks, arcing interlock forms the essences of the embedded code.

Team Size: 2

Role: Embedded Engineer

Hardware: Siemens CPU S7-200XP PLC, HMI

Software: Microwin Step 7 PLC software, ESA polymath for HMI programming

Responsibility: Coding for control and monitoring of all interlocks in PLC and GUI development.

Electrolab India Pvt. Ltd Jan 2011 — May 2011

Service Engineer

**Details:**

Installation, calibration and servicing of various medical equipment such as Tablet dissolution tester, hardness tester etc. needed in pharmaceutical company.

Ability to troubleshoot and implement corrective action

Society for Applied Microwave Electronics Aug, 2005 — July,2007

Engineering and Research (SAMEER),

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EMI/EMC test engineer

**Details:**

Involved in carrying various EMI/EMC test on Industrial, Scientific and Medical equipment to test conformance/compatibility to CE standards. It involved setting of test setup as per standard and handling of several test generators and EMI receivers.

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Education



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| Degree in Electronic & Telecommunication | July 2007 — May 2010 |
| Engineering |  |
| Shivajirao S. Jondhale College of Engineering |  |
| First class with 65.37% |  |
| Diploma in Electronic & Radio Engineering | July 2003 — May 2005 |
| St. Xavier’s Technical Institute |  |
| First class with 84% |  |
| H.S.C | July 2001 — June 2002 |
| Royal Junior College |  |
| Second class with 59% |  |

Academic Projects



**Diploma:**

Title: Wireless RF speakers using digital Audio processor:

The aim of this project was to eliminate the cables running from the audio source to the speaker thereby making a wire-free and positioning independent speaker. A FM transmitter connected to the sound system is used to transmit the base band audio signal after FM modulation. A FM receiver tuned at the transmitter frequency is placed inside the speaker box, which demodulates the signal and base band audio signal is extracted. This signal is then given to a digital processor for frequency equalization and volume adjustment via a remote. The processed signal is then fed to the speaker via the power amplifier stage.

**Degree**:

Title: Tele-surgery using Robotic Arm:

In this project a 5 joint mechanical structure depicting the five movements made by a human arm, is simulated. Each joint has a geared dc motor driven by H-bridge motor driver. Micro-switches were used to sense the motion of the human arm and an appropriate command is generated with the help encoder, which outputs a unique code for the respective combination of switches pressed. This code is then transmitted by a RF transmitter. All these five motor movements are controlled via 8052 core based microcontroller, which receives command from a decoder via a RF receiver operating at 432 MHz.

References



1. Mr. Girsih Isola, Scientist E

Society for Applied Microwave Electronics Engineering & Research Email: giri@sameer.gov.in

1. Mr. Samruddha Thakur, Deputy Engineer BEL, Bangalore

Email: samruddhathakur@gmail.com

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