Firmware Developer

Deepika Chand

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OBJECTIVE:

Good experienced embedded engineer, with wide exposure to various electronics technologies, and in end to end product development life cycle. Seeking a challenging opportunity in a position where my skills in embedded applications are utilized to the fullest extent.

Professional Snapshot:

- Having total **4.7 years of experience** in **conceptualization development and integration of microcontroller based products and solution, firmware development of various embedded hardware**.

- Working in **Sciegra Consultancy Services Pvt Ltd,** as an **R&D professional** (designated as Senior Embedded Engineer), **into designed and developed a consumer communication product, hardware and software.**

- **Traveled twice to Germany,** on work related assignments, in **Sciegra Consultancy Services Pvt Ltd.**

- **Specialized skills in Sensor Data Analysis, Firmware development, Wireless technology, Algorithm Development, Time Series Forecasting Modeling.**

- **Knowledge of real time and communications/network implementations. Designed the collection of statistic of network management for Ethernet interface.**

- Designed hardware and software as an I/O harness for testing an embedded processor system.

- Strong software development skills in C, and good analytical & problem solving skills.

- Worked with **digital and analog oscilloscopes**, PC based simulating systems for microprocessors, **Fluke instruments**, **IR camera,** eagle card software, Matlab environment etc.

- **Embedded serial triggering**, comprehensive analysis of **mixed signal** in MSO2000 (Tektronix) Oscilloscope .

- Having good analytical power in **schematic analysis, circuit design microcontroller based architecture design.**

- Documented in compliance with applicable standards, regulations and company procedures. Created HW and SW specifications, guidelines and other technical documentation.

- Experience in **quickly designing** and **developing products**, **quickly grasping** new concept of various technology.

Firmware Developer

Embedded Processor/ & Controller	8 bit, 16 bit micro controller, Atmel Series, Texas Instrument(MSP430), 8051, EK-LM3S9B90 (32 bit ARM Cortex M3)
Hardware	Ethernet Shield, SD &MMC card, GSM , GPRS Modem, Sensors(Current, Voltage, Temperature) .

Networking / Protocols	TCP/IP , SMTP , GSM, GPRS, RF
Embedded Protocol	SPI, I2C, Fundamentl of CAN
Programming Language	C, C++
Engineering Design Tool	Eagle 6.3, Matlab 7.0, Oscilloscope (MSO 2000 series)
Operating System / RTOS	Windows, Linux, SYS/BIOS , VxWorks (basic)
IDE	Tornado , Code Compose Studio4.0 , VC++, Keil

Education & Training:

- **B. Tech (Electronics & Telecommunication),** from Ajay Binay Institute of Technology, Cuttack under Biju Pattnaik University of Technology, Orissa, in June, 2007.

- Undergone an Advanced Training in **"Embedded Systems" at "Cranes Software International", which included C, C++, Networking, Microcontroller-8051, VxWorks, and Linux Device Drivers**, from Feb, 2008 to Sep, 2008.

Experience Summary:

- Sciegra Consultancy Services Pvt Ltd, Kolkata (Sep/2010 - Till date)
- Accelear Consulting Pvt Ltd, Kolkata (Oct/2008 to Aug/2010)

ACHIEVEMENT

- **In my current company**, Sciegra Consultancy Services Pvt Ltd, **I have travelled twice to Germany**, **first time for working with PD.Dr/Ing.Habil Ajoy K. Palit, University Of Bremen, Germany** for knowledge transfer in forecasting modelling and **second time** for working in SCIEGRA Research And Technology GMBH, under **Bremen Innovation Techno Zoom, Germany ,** respectively.

- In Sciegra Consultancy Services Pvt Ltd, **I have Invented a Patent**, which has been applied and published, in the year of 2012 .

Organizational Scan:

1) Sciegra Consultancy Services Pvt Ltd
   Company URL : www.sciegra.com

Firmware Developer

Dsignation   : Senior Embedded Engineer (Research & Development)

Responsibilities in Product Design and Integration. (10 / 2011 to Till Date)

Project Name	SMART METER
Description	It is an consumer grade electricity meter which measure the consumption details and working in smart grid technology.
Location	Kolkata / Germany
Role	Senior Embedded Engineer
Language	C , C++
Microcontroller	8 bit
Environment / Engineering Tool	Matlab 7.0, Target (Microcontroller) related IDE, Oscilloscope
Responsibility (FIRMWARE)	• Design , implementation and testing **Ethernet module** and make it **DHCP** enable in existing network. • Established connection such as **client server architecture** between embedded device and database server to exchange datas in **TCP/IP** model .

	• Implementation of **IP multicasting** in ipv4 technology. • Configure and test device in **sleep mode** w.r.to other module for power saving. • Implementation to send and receive mail using **SMTP** protocol technology. • Integration of **SD** card module using **SPI protocol** and manage data in txt , ccs, doc files in through library files.
Responssibility (Sensor & Hardwae Module)	• Integration of temperature sensor (**LM35 series**) with micro controller and development code . • Working with **non invasive** current sensor with ADC module. Design **sensor conditional circuit** to integrate with microcontroller and implement algorithm for its application . • Woking in **power generation circuit** architecture for microcontroller . • Integration of Lithium ion battery with **ADC module** and developed code for battery life indication.
Responsibility (Testing and Analysis.)	• Variety **sensor data** analysis and appropriate mathematical operation using MATLAB to get high accuracy. • Linearity test of input output characteristic of sensor according to data sheet. • Real time testing for **SPI & I2C** protocol support hardware with **oscilloscope**. • Testing internal and external heat dissipation of product using IR camera.

Project 2	MODELLING SHORT TERM DEMAND FORCASTING
Description	It is a neuro-fuzzy based time series demand forecasting algorithm which forecast next one day or two day data .
Duration & Location	8 months & Kolkata / Germany

Firmware Developer

Language	C
Environment	MATLAB 7.0.4
Responsibility	- Implementation and execution of **function file** with required input and find output. - Implementation of **complex mathematical** equation. - Calculating error percentage and reduce until get high accuracy . **Neuro-Fuzzy** based algorithm development and analysis.

PROJECT 3	FUZZY LOGIC CONTROLLER
Description	It is a microcontroller based project where temperature of a room can be controlled and maintain comfort factor which is acting on fuzzy logic based algorithm.
Duration	4 month
Microcontroller	Msp 430
Environment	MATLAB 7.0.4 & Code Compose Studio
Responsibility	- Implementation of **Fuzzy Logic** algorithm in MATLAB environment. - Integration and code development for **temperature sensor**.

Accelear Consulting Pvt Ltd, Kolkata (Oct 2008 to Aug 2010)
Company URL : www.accelear.com
Designation : Senior Software Engineer

Project 1	NETMETER
Duration	7 Months
Language	C

Role	The min job of this device to calculate total debit or credit of electricity between renewable energy produced such as solar cell and electricity supplied.
Responsibility	- Configuration of **DC sensor** with **ADC module** of microcontroller and integration with 40 watt solar cell. - Firmware development of GSM module and sending SMS . **Linearity test** and circuit analysis of DC sensor with microcontroller - Configuration of SD shield using SPI protocol - Working in Serial and parallel lcd .

Project 2	Spot Billing Soluion
Role	Associate Software Engineer
Duration	8 Month
Platform	GoDB
Database	SQL LITE
Language	Scripting C

Firmware Developer

Hadware	**Simputer Amaida** (Hand held device)
Description	It is a embedded application billing software which install to the hand held device called simputer amaida to perform operation and see those in display according consumer requirement.
Responsibility	• Design front end look and feel and development of page where user input can be taken. • Development of code for billing engine. • Creation of SQL Lite database for storage predefined data of consumer such as consumer no, tariff plan , category etc. Import package through cross compilation in devian Linux OS platform.

Academic Project : <u>LASER BASED VOICE COMMUNICATION</u>

Duration   : 90 days

Team Size   : 4

Description   :

• This is a wireless communication project which works within short distance around 500 meter. It has one transmitter and one receiver which include different types of transducer.

• The carrier used for voice is laser light. A sound voltage of very small value is amplified by a very simple amplifying network and then filtered and converted to light voltage with the help of one transducer.

• The signal here is carried undistored by laser light and fed to open base photo transistor which is placed apart. On the receiver side it demodulates the electrical signal and converted to the audio signal by another transducer with the help of loud speaker.

<u>PERSONAL DETAIL</u>

Name   : Deepika Chand

Permanent Address : Qr No: 1B/130, At Po: South Balanda, Dist Angul, 759116, Orissa

Gender   : Female

Marital Status   : Married

Date of Birth   : 25th June 1985

Passport No   : Available

Nationality   : Indian

I do hereby declare that all the above information given by me are true, correct and complete to the best of my knowledge and belief.

Date & Place   :   Signature of the Candidate.