

PROFILE

SHANMUGAKUMAR.M

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OBJECTIVE:

Accomplish a challenging professional position where I can effectively use my knowledge and skills to the betterment of the organization and myself.

ACADEMIC PROFILE:

COURSE	INSTITUTION	UNIVERSITY/BOARD	YEAR OF PASSING	CGPA
Doctor of Philosophy (Computer Engineering)	Indian Institute of Information Technology Design and Manufacturing(IITD&M) Kancheepuram, India	IITD&M (Center for Excellence, Under MHRD, Govt of India)	July 2013 (Joined)	
Master of Design (Electronic Systems)	Indian Institute of Information Technology Design and Manufacturing(IITD&M) Kancheepuram, India	IITD&M (Center for Excellence, Under MHRD, Govt of India)	May 2013	8.93
B.E(Electronics and Communication Engineering)	Paavai Engineering College, Namakkal.	Anna University, Coimbatore	May 2011	8.4

SKILL SET:

- ✍ Programming Languages : Embedded “C” and ASM.
- ✍ Hardware Description Languages: Verilog, VHDL, and PSPICE.
- ✍ Circuit Simulation Tools : Multisim and Icarus Verilog
- ✍ System simulation Tools : MATLAB(Programming and Simulink), MPLAB IAR Embedded work bench for MSP430. CC Studio for TMS320C67xx (DSP APP)
- ✍ VLSI Layout Design Tools : CADENCE 6.1 and Micro wind.
- ✍ ASIC Design Flow Tools : Cadence 6.1
- ✍ FPGA Design Flow Tools : XILINX ISE,VIVADO.

- ✍ Prototype Boards : Xilinx (Virtex II Pro and SPARTAN 3E)
- ✍ Operating Platforms : Linux (RHEL, Fedora 16, Ubuntu 12)and Windows(XP,Vista,7,8)
- ✍ Hardware Skills. : Electronic Servicing skill, Hardware and Networking.

FIELD OF INTEREST:

- ✍ Digital system design and Computer architecture.
- ✍ Network system design.
- ✍ Digital system testing.
- ✍ Microprocessor 8085 & hardware design.

CERTIFIED COURSES COMPLETED:

- ✍ Embedded System Design using PIC 16F87x.
- ✍ Hardware and Networking.

INDUSTRIAL TRAINING:

- ✍ 5 Days Training in BSNL Main Exchange, Salem.(23-06-08 to 27-06-08).
- ✍ 5 Days Training in Doordarshan LPT, Attur, Salem.(28-12-09 to 01-01-10).

ACHIEVEMENTS:

- ✍ Got First Prize in paper presentation and circuit debug contest conducted by Anna University, Coimbatore.
- ✍ Got First Prize in Quiz competition conducted by Mepco Schlenk Engineering College.

ACTIVITIES:

- ✍ Presented 3 papers in intercollegiate level-technical symposiums.
- ✍ Organized Circuit debug event in ECE department symposium -Vibrantz 10.
- ✍ Committed as an Executive member in ECE Association.
- ✍ Awarded 'A' grade certificate in NCC and attended Annual Training camp.
- ✍ Member of Indian Society for Technical Education.

PUBLICATIONS:

International Conference:

Shanmugakumar et.al "*High Precision and High Speed Handheld Scientific Calculator Design Using Hardware based CORDIC Algorithm*" Procedia Engineering, Vol-64,page no 56-64, July 2013.

Link: <http://www.sciencedirect.com/science/journal/18777058/64>

PROJECT DETAILS:

HDL Design Projects:

1) High performance Arithmetic Circuit design for solving elementary function using CORDIC Algorithm.

“Implementing a Complete CORDIC Architecture in pipelined fashion and reducing the number of iterations to compute the result using redundant scaling factor”. The complete design is described in Verilog HDL, simulated using Xilinx ISE simulator and Timing, Area, Power are Analyzed in Cadence 6.1 -RTL Compiler (RC).

2) High performance Floating point MAC Design for DSP Application

“Designed Complete Multiplication and Accumulation unit (MAC) using Wallace tree multiplier with pipelined fashion and reduced the computation time by providing feedback result to a multiplier block, compatible for floating point(IEEE 754) MAC ”. The complete design is described in Verilog HDL, simulated using Xilinx ISE simulator and Performance Analyzed in Cadence 6.1-RTL Compiler.

3) Performance of Space time coded and Spatial multiplexed MIMO system.

“Multi Input Multi Output (MIMO) system is utilized to calculate the SINR by mathematical modeling for improvement of channel capacity. The Project is simulated using MATLAB and implemented in FPGA(SPARTAN 3E) using XILINX 13.1.

Embedded Design Projects:

1) Eye Blink Sensing and Accident preventer.

“To avoid the accident in highways while driver sleeping at the time of driving, by using IR sensor interfaced with PIC(8-bit) controller”. System simulated in MPLAB and implemented in PIC 16F877A Microcontroller with necessary interfaces.

2) RFID Based Car Parking Management.

“Making automatic car parking management system for user comfort in parking lot using RFID” System developed using MSP430F1611 Microcontroller and RFID interface with the help of IAR Embedded workbench using Embedded C.

3) Low cost ADD ON for Two wheelers (Hybrid Vehicle Module).

For fuel efficiency, auto switching head light and auto stand remover. System simulated in MPLAB and implemented in PIC 16F877A Microcontroller with necessary interfaces.

Product Prototype Projects:**1) Wind Oscillator**

Produce Electricity from windows, Flexible membrane to make vibration from wind flow, converting vibration to Electricity using copper coil and neodymium magnet.

2) Modular Home

Flexible home that suits anywhere, easy to shift the home, one lever is enough to make and fold the home.

LANGUAGE PROFICIENCY:

✍ English (To read, write & speak)

✍ Tamil (To read, write & speak)

✍ Hindi (To speak)

PERSONAL INFORMATION:

Father's Name : Mr. P. Murugesan.

Mother's Name : Mrs. M. Umarani.

Blood Group : O +ve

Nationality : Indian.

Marital Status : Single.

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REFERENCE:**Dr. Noor Mahammad Sk**

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DECLARATION:

I hereby declare that the information furnished above is true to the best of my knowledge and belief.

Place: Chennai

Date : 4th April 2014

(SHANMUGAKUMAR.M)