

Venkatesh Balasubramanian

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<http://www.ece.osu.edu/~balasubv>**OBJECTIVE**

Pursue doctoral studies with accent on Analog and RF circuit design, Computer Architecture and Device Modeling and pursue career opportunity in Academia.

EDUCATION

Master of Science, Electrical and Computer Engineering

The Ohio State University, Columbus, OH GPA : 3.81

Dec 2008 (expected)

Bachelor of Engineering, Electrical and Electronics Engineering

Anna University, Chennai, India Percentile : 86% (First Class with Distinction)

Jun 2006

Class Rank : 1/100 University Rank : 26/6971

EXPERIENCE

The Ohio State University: Non Linear RF Laboratory, Columbus, OH

M.S. Thesis, Professor Patrick Roblin, Apr 2008-present

Title:- Characterization of sub-90 nm gate length RF MOSFETs using Large Signal Network Analyzer

- Studied the gate resistance and substrate network models for RF devices using BSIM4
- Analyzed the performance trends due to variations in gate length, width and number of fingers.
- Conducted simulations in ADS to characterize Class A and Class B Power Amplifiers in Common Source and Common Gate configurations using RF MOSFETs, verify device symmetry and post simulation data processing in MATLAB to extract the substrate network.
- Analyzed the effect of harmonics (up to 20) on the RF performance.

Graduate Research Assistant, Professor Patrick Roblin, April 2007-March 2008

- Worked on the characterization of sub-100nm device technology based RF MOSFETs sponsored by Texas Instruments.
- Collaborated with TI engineers to develop test beds and perform pad fitting for class A and class B Power Amplifiers in Common Source and Common Gate configuration to characterize the RF devices in ADS and compare the simulated data with the measured data from the Large Signal Network Analyzer.
- Recognized potential problem areas in the device layout and suggested improvements.
- Presented quarterly progress reports via on-line conferences and the final report at the company's facility during the Annual Internal Conference on December 5, 2008.

The Ohio State University: Electrical and Computer Department, Columbus, OH

Graduate Student Grader, Sep 2006-Present

- Responsible for preparing solutions and grading students' assignments for Microcomputer structures, Theory and design of Digital Computers, Electrical Circuits and Analog Integrated Circuits.

Anna University: Electrical and Electronics Department, Chennai, India

Final Year Project, Professor B.L. Mathur and K. Rathnakannan Jul 2005-Apr 2006

Title:- Design of non iterative 8-bit decimal multiplier using ancient Indian Vedic Mathematics

- Standardized the multiplication algorithm in C and MATLAB
- Checked for computational timing delays using ALP coding in Intel 8085 microprocessor
- Used Mentor Graphics tools to realize the logic flow in verilog HDL (MODELSIM) and extract the gate circuitry (Leonardo Spectrum).

Agasthya Technologies: System Maintenance Department, Chennai, India

Undergraduate Intern, May-Jun 2004

- Assembled Pentium 3 and Pentium 4 based PCs

- Assisted in troubleshooting various installation errors for operating systems like Linux and Win XP

**PepsiCo India Holdings Private Ltd: Quality Control and Maintenance, Mamundur, India
Undergraduate In-Plant Trainee/Intern, May-Jun 2003**

- Conducted hourly quality tests to check the sugar level in beverages
- Studied the electrical power management system of the entire plant
- Analyzed the plant yield with respect to the power consumption for running different production lines to identify the most economical solution

SKILLS

Programming/Numerical Computing/Machine Coding Languages: C/C++, Java (basic), RobotC, MATLAB, Mathematica, Intel 8085, Motorola 68000

Operating Systems: Linux, Unix, Mac OS X, Windows 9X, XP

EDA tools: Cadence Virtuoso suite, PSPICE, Agilent ADS, IRSIM, MAGIC, Modelsim (verilog HDL), Leonardo Spectrum, Altera development package

Documentation software/Line editors: Latex, Vi editor, Emacs

PUBLICATIONS

S.J.Doo, P.Roblin, **V.Balasubramanian**, R.Taylor, K.Dandu, G.H.Jessen and R.Rojas, Adaptive second harmonic active load for pulse-IV/RF class-B operation, in ARFTG 70th Conf. Dig. Tempe, AZ, Nov. 2007.

S.J.Doo, P.Roblin, **V.Balasubramanian**, R.Taylor, K.Dandu, J. Strahler, G.H.Jessen and J.P. Teyssier, Pulsed-IV Pulsed-RF Active Load-Pull Measurements for the Design of High-Efficiency Class-B RF Power Amplifiers with GaN HEMTs, submitted to IEEE trans. MTT (Sep. 2008), conditional acceptance notification (Nov. 2008), revised paper to be submitted (Dec. 2008).

RELEVANT COURSEWORK

Digital VLSI circuits, Analog Integrated circuits, Microcomputer structures, Semiconductor Device Theory, Mixed Signal VLSI, Microwave Amplifiers and Oscillators, Digital Logic lab, RF circuits, Analog VLSI design, Compound Semiconductor Process Technology, High-Speed Semiconductor Devices, Computer Architecture, Microprocessor and Applications, IC and Microprocessor Laboratory

ACADEMIC PROJECTS

Device layout of depletion mode InGaP/InGaS p-HEMT for LNA applications in ADS (Mar 2008)

Design of dual gain wideband differential LNA for WiMAX applications in Cadence using TSMC 0.18 technology (Apr-Jun 2007)

Design of Oscillator and Mixer based on TSMC 0.18 technology in ADS (Apr-May 2007)

Design of LNA based on IBM-6HP BiCMOS technology in Cadence (Apr-May 2007)

Design and Analysis of N-bit ADC and DAC in TOPSPICE (Mar 2007)

ADS simulation and Microstrip realization of LNA at 2 GHz using AT54143 p-HEMT (Feb-Mar 2007)

Design of baud rate generator, keypad and LCD display interface using Altera package (Jan-Mar 2007)

Design of soda vending machine using verilog HDL (Nov-Dec 2006)

Analysis of inverting and non inverting buffers using IRSIM and MAGIC (Oct 2006)

PAPERS IN UNDERGRADUATION

Matlab simulation of pulse generation of a two level voltage source three phase inverter employing Space vector pulse width modulation technique (a lookup table approach) under Dr. S. Hosimin Thilagar, Assistant Professor, department of Electrical Engineering, Anna University. Won best paper award at FACTS-05, a National level seminar on Power Electronics applications in Power Systems held during 30-31 December 2005

A case study of performance of industrial process (temperature process) under different control techniques (fuzzy, conventional) under D.Sindhanaivelvi, Sri Sivasubramaniya Nadar College of Engineering. Presented at Birla Institute of Technology and Science, Pilani during National level tech symposium, APOGEE in 2005

Fractal theory and its application in the field of robot vision and navigation(a 2-D approach). Won 1st prize at the National level symposium CYNOSURE-05 at Hindustan College of Engineering, Padur

SCHOLARSHIPS AND AWARDS

Merit rank certificate for getting the 26th rank out of 6971 candidates graduating from the Faculty of Electrical Engineering, Anna University during the academic term 2002-2006.

Recipient of gold medal for securing rank 1 in the class of 100 students from the 2002-2006.

Recipient of the Best Outgoing Student from the 2002-2006 class of Electrical and Electronics department.

Merit scholarship award in January 2005 for securing 1st rank during the sophomore year.

Merit scholarship award in January 2004 for securing 3rd rank during the freshman year.

Certificate of Merit in 2002 awarded by C.B.S.E for being one among the top .1% of the students who had appeared in the class XII (senior year in high school) chemistry board exam throughout India.

PAST ACADEMIC AFFILIATIONS

Student Member, Institute of Electrical and Electronics Engineers (IEEE)

Student Member, Computer Society of India (CSI)

Student Member, Indian Society of Technical Education (ISTE)

Member, Association of Electrical and Electronics Engineers (AEEE)

UNDERGRADUATE EXTRA CURRICULAR ACTIVITIES

Technical committee member from 2003-2005 in all the National Level Symposiums conducted by the Electrical and Electronics department

Event Coordinator of the PAPEL ULTIMO (Paper Presentation) at EUPRAXIA- Y05, a National Level Symposium conducted by the Electrical and Electronics department

INTERESTS

Building robot models using Lego Mindstorms NXT, playing guitar, solving Sudoku and Rubix's cube

REFERENCES

Dr. Patrick Roblin, Dr. Mohammed Ismail and Dr. Wu Lu, Department of Electrical and Computer Engineering, The Ohio State University