Ramakrishna Venigalla

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Objective

Seeking a full time position in the field of **Analog / Mixed Signal IC Design**

Profile

- Experience in RF & Microwave IC Design and Analog/Mixed Signal VLSI Design using CADENCE tools
- Hands on experience using MATLAB and other software packages and also with programming languages
- Good team player with excellent communication skills. Flexibility to adapt to new situations

Education

Master of Science in Electrical & Computer Engineering, May 2003
University Of Florida, Gainesville. **G.P.A: 3.81 / 4.00**

Bachelor of Engineering in Electronics and Communication Engineering, Jun 2000
Bharathidasan University, Tiruchirapalli, INDIA. **G.P.A: 3.85 / 4.00**

Research & Industrial Experience

- **Graduate Research Assistant, Univ. of Florida, Gainesville, FL** (Jan'01-May'03)
  - Design of Externally Digital CMOS Potentiostats and A / D Converters
- **Intern, IBM Microelectronics, East Fishkill, NY** (May'01-Aug'01)
  - Delta-Sigma A/D Converter for a RF Transceiver
- **Intern, American Megatrends, Chennai, India** (Jan'00–May'00)
  - Developed software for local intranet – AMI Netz, using HTML, Javascript, JSP, JDBC & SQL
- **Intern, Indian Institute of Science , Bangalore, India** (Nov'98–Dec'98)
  - Implemented a 32-bit ALU processor using VHDL

Relevant Design experience

- Low Noise Amplifier
- 3GPP Standard Turbo Encoder
- 32-bit SRAM
- Digital Counters
- Op-Amp with Wide Swing Current Mirrors
- Second Order Gm-C Band-Pass filter
- All-Pass Switched Capacitor filter

Relevant Course Work

VLSI Circuits & Tech. (*Dr. Kenneth. K. O*)
Advanced VLSI (*Dr. W.R. Eisenstadt)*
MOS Analog IC Design (*Dr. R.M.Fox*)
Analog Signal Processing *(Dr. John G. Harris)*
RF Microelectronics (*Dr. Kenneth. K. O*)
Microwave IC Design (*Dr. Kenneth. K. O*)
Bipolar Circuits (*Dr. W.R. Eisenstadt*)
Digital Signal Processing (Dr. Fred J. Taylor)

Computer Skills

Simulation Packages	Cadence IC Design Tools, PSPICE, MATLAB, LABVIEW
Operating Systems	MS-DOS, WINDOWS-NT/2000/98, AIX, UNIX
Programming Languages	C, C++, JAVA, HTML, JavaScript, JSP, JDBC, SQL, PERL

Honors and Achievements

- Recipient of Merit scholarship for outstanding academic performance during undergraduate study
- Ranked among the top 3% in the university in my undergraduate study
- Ranked 2915 in the IIT JEE '96 exam taken up by over 150,000 students in India
- Active participant in the organization of "Rendezvous" – a national-level, inter-collegiate technical symposium

Project Description

- **Low Noise Amplifier**: A **L**ow **N**oise **A**mplifier **(LNA)** with the resonant frequency of 1.8GHz, G_T >15dB, IIP_3 > -15dB and Noise Figure < 2dB was designed and laid out with **Cadence** design tools. **MATLAB** was used to get the initial values of components. The initial values were then used to simulate the circuit in **SpectreRF** and were further changed in increments till all the specifications were met.
  http://us.share.geocities.com/venigal_ram/Projects/microwave_report.pdf
- **Delta-Sigma A/D Modulator**: A fourth order Delta-Sigma Modulator with a 2 by 2 MASH architecture was designed and simulated to be a part of a RF transceiver. Mathematical models were first made and simulated using **MATLAB** and the circuit simulations were done using **Spectre**. 0.12µm IBM CMOS technology files were used.
  http://www.geocities.com/venigal_ram/Projects/Report.pdf
- **3GPP Standard Turbo Encoder**: A Programmable Variable Rate Turbo Encoder (AMV6323) was designed, simulated and laid out using 0.5µm CMOS Technology. The Turbo Codes are the latest in FEC codes and have been specified in 3GPP (WCDMA) and 3GPP2 (CDMA 2000) standards. Simulations were done using **Spectre** and the circuit was laid out with **Virtuoso** layout editor**.** The schematic and layout were verified using **LVS** and **DRC** checks.
  http://www.geocities.com/venigal_ram/Projects/AMV6323.pdf
- **Time Based Measurement Technique for a 2-Electrode Potentiostat**: A time based measurement technique for the measurement of current in an electrolytic solution was proposed. It incorporates the use of a 2-electrode potentiostat. Simulations were done using **Spectre** to verify the validity of the technique and the circuit was laid out using **Virtuoso** layout editor as part of this project. The schematic and layout were verified using **LVS** and **DRC** checks.
  http://us.share.geocities.com/venigal_ram/Projects/ASP_Report.pdf
- **32-bit ALU**: A 32-bit ALU processor was designed with **VHDL**. Simulations were done using **View Logic** and the synthesis was done using **Ambit's BuildGates** synthesizer. The purpose of the project was to get familiarized with VHDL simulators to help in the design of reconfigurable ATM Switches.
- **Digital Counters**: A 3-bit digital up-down counter was designed. The main purpose of the project was to determine the minimum number of transistors that need to be added for every additional bit of the counter. The counter should be edge triggered and also stop counting once it reaches saturation. http://us.share.geocities.com/venigal_ram/Projects/Counters_Indep_Study.pdf
- **SRAM**: An SRAM with 9 words, 2-bit data bus and with a 3-pF load driving capability was designed and laid out using 0.5µm CMOS Technology. The feasibility for increasing the bus width to 4-bits and the memory by up to 2.5X were also demonstrated. Simulations were done using **Spectre** and the circuit was laid out with **Virtuoso** layout editor**.** The schematic and layout were verified using **LVS** and **DRC** checks.
- **Op-Amp**: A Wide Swing Current Mirror Op-Amp was designed using **PSPICE**.
- **Second Order Gm-C Band-Pass filter**: A Gm-C Band-Pass filter with electrically adjustable center frequency and Q was designed and simulated in **PSPICE**. The purpose of the project was to demonstrate the operation of a Gm-C filter and to assess the impact of mismatches of circuit components on the performance of the filter.
- **All-Pass Switched Capacitor filter**: An All-Pass Switched Capacitor filter was designed and simulated in **PSPICE**. The effect of Op-Amp characteristics on the Switched Capacitor circuits was studied as a part of the project.
- **AMI NetZ**: Developed a commercial intranet software - AMI NetZ for **A**merican **M**egatrands **I**nc., India. The front end user interface for the software was developed using **HTML** and **Javascript**, while the back end was programmed using **JSP** and **JDBC**. Some of the features of the software included email, workgroups, message boards, address book etc.

References

Dr. Kenneth K. O Professor, Electrical and Computer Engineering Dept, University of Florida, Gainesville, FL. E-mail: kko@tec.ufl.edu	**Dr. John G. Harris** Associate Professor, Electrical and Computer Engineering Dept, University of Florida, Gainesville, FL. E-mail: harris@cnel.ufl.edu