Bilal Gabula

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Objective:

To gain real world experience in Embedded System Design

Education:

2013-Current **University of Illinois at Urbana-Champaign**
Masters of Science in Electrical Engineering *GPA – 3.3 Expected: Dec2016*
Digital IC Design: *Designed and completed layout for an 8 bit serializer*
VLSI System Design: *Designed and completed layout for a 4 bit microprocessor based on Am2901. Used one of the smallest areas in the class*
Advanced Power Electronics: *Simulated an augmented buck converter designed for fast transient recovery and presented a hybrid SC-buck converter topology*
VLSI in DSP and Communications: *Studied the effect of parallelizing stochastic computing*
Advanced Analog IC Design: *Designed and simulated a stage of a pipeline ADC*
Control Systems: *Built a control system for stabilizing an inverted pendulum*

2009-2013 **University of Illinois at Urbana-Champaign** *GPA – 3.5* *May2013*
Bachelors of Science in Electrical Engineering **Minor in Physics**
Graduated with Honors and as a James Scholar
Dean's List – Fall 2009, Spring 2010, Spring 2011
Relevant Classes: Analog Signal Processing, Power Circuits, Electronic Circuits, Digital Signal Processing, Semiconductors, Fabrication Lab, Wireless Communication Systems, Analog IC Design

Work Experience:

June'14-Aug'14 **Analog Design Intern – Cirrus Logic Inc.** ***Austin***
- Helped with system level Simulink modeling and simulations of a MEMS sensor and AFE
- Re-designed the bandgap circuit implementing changes to improve performance

Aug'13-Dec'15 **Teaching Assistant: Digital Systems Lab – University of Illinois** ***U-C***
- Held lab sessions to teach logic using TTL IC's and Verilog/VHDL using Altera FPGA's
- Redesigned a lab to use a USB instead of a PS/2 Keyboard

Jan'12-Aug'12 **Analog Design Intern – Cirrus Logic Inc.** ***Austin***
- Tested and simulated the bandgap circuit in order to help find a way of improving it
- Reduced test time of an autonomous test by 50% by bypassing an intermediate micro-controller
- Ran ADMS simulations on two chips in the same family of IC's
- Used my testing experience to test an idea on enhancing the bandgap circuit calibration process

Oct'10-Oct'11 **Computer Assistant – A**pplied **T**echnologies for **L**earning in the **A**rts & **S**ciences ***U-C***
- Helped maintain inventory, installed and updated different programs on Linux and Windows

Projects:

2015-Current **Quadcopter** – Designing and building a 4 rotor drone using a BegaleBone Black, 9-axis IMU and a GPS module.

2012-2013 **GPS Implant for Illinois River Otters** (Senior Design project) – Designed a subcutaneous implant to relay important information about movements of river otters. This will help with current research being carried out at **I**llinois **N**atural **H**istory **S**urvey at the University of Illinois

2011-2012 **Magneto** (**IIT-B Techfest**: Asia's largest Science and Technology Festival) – Designed and built a robot that was controlled only by hand movements

2011 **Digital Spectrum Analyzer –** Designed a simple (non real-time) spectrum analyzer (20Hz-20kHz) using ATMEGA32 and an LCD screen

2010-Current **Enthusiast – ATMEL-AVR,** micro-controllers *not* supported by Arduino – Built and soldered development boards for ATMega32 and ATtiny1634. Interfaced with an LCD screen using an original library to help during testing

Additional:

- Designed complex 4 layer boards and also etched simple 1 layer boards for prototyping
- Successfully used re-flow oven, spectrum analyzer and network analyzer among other common lab equipment in projects
- Proficient in C, C++, Matlab, Assembly and Machine code
- Enjoy playing the guitar, SCUBA diving, kayaking and fishing