BILAL GABULA

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OBJECTIVE

To find a job in circuit design or embedded system design in a field like automation, robotics, drones, wearables or IOT

EDUCATION

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN   Champaign, IL
Masters of Science in Electrical Engineering   *Dec'16*
- <u>Relevant Classes</u>: Advanced Analog IC Design, Advanced Power Electronics, Digital IC Design, VLSI System Design, VLSI in DSP and Communications, Control Systems, MEMS Devices & Systems

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN   Champaign, IL
Bachelors of Science in Electrical Engineering with a Minor in Physics   *May'13*
- Graduated with Honors and as James Scholar. Dean's List: Fall 2009, Spring 2010, Spring 2011
- <u>Relevant Classes</u>: Analog IC Design, Analog/Digital Signal Processing, Power Circuits, Electronic Circuits, Semiconductors, Fabrication Lab, Wireless Communication Systems, Data Structures, Physics of Music

WORK EXPERIENCE

CIRRUS LOGIC INC.   Austin, TX
Analog Design Intern   *Jun'14 – Aug'14*
- Helped with system level Simulink modeling and simulations of MEMS sensors interactions with the AFE
- Re-designed the bandgap circuit implementing changes to improve performance over PVT variations

Analog Design Intern   *Jan'12 – Aug'12*
- Tested and simulated the bandgap circuit to improve performance
- Cut testing time of an autonomous testing process by half, by bypassing an intermediate micro-controller
- Ran ADMS simulations to verify the testing process of two different IC's as a part of pre-silicon validation
- Conducted experiments to test an idea on enhancing the bandgap calibration process

UNIVERSITY OF ILLINOIS   Champaign, IL
Teaching Assistant: Digital Systems Laboratory   *Aug'2013 – Dec'15*
- Held weekly lab sessions and office hours to teach logic design using TTL IC's and Verilog/VHDL on FPGAs
- Helped re-design a lab to use USB instead of PS/2 Keyboards

Computer Assistant at ATLAS   *Oct'10 – Oct'11*
- Installed and maintained computer systems for the Economics and Political-Science departments
- Identified and resolved both hardware and software problems on Linux, Windows and Mac machines

PROJECTS

QUADCOPTER: *Aug'15 – Present*
- Building a 4 rotor drone using a BeagleBone Black, 9-axis IMU and a GPS unit
- Writing a customized flight control system with the aim to have autonomous flight

LOW DROP OUT REGULATOR: *Thesis Project*   *Nov'14 – Dec'16*
- Designed and simulated a fully integrated LDO with better than 15dB full spectrum power supply rejection
- Implemented techniques like buffer impedance attenuation and dynamic biasing to achieve a FOM of 35ps

MICROPROCESSOR: *VLSI System Design*   *Aug'14 – Dec'14*
- Designed and completed the layout of a 4 bit microprocessors data path which was based on the Am2901
- Used one of the smallest layout areas in the class ~ $7.4k\mu m^2$

GPS IMPLANT: *Senior Design Project*   *Aug'12 – May'13*
- Designed a subcutaneous implant to track Illinois otters. The system included GPS, RF transceiver, microcontroller and non-volatile memory. Used a re-flow oven and a spectrum analyzer during development.
- Designed and home-made multiple simple PCB's for quick prototyping.

ENTHUSIAST ATMEL–AVR: *Not Arduino*
- Designed and soldered multiple development boards with custom LCD screen interface for easy testing
- Built a robot that responds and moves based on hand wrist movements   *2012*
- Made a simple (non real-time) spectrum analyzer *Physics of Music*   *2011*