MD MOQBULL HOSSEN

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Summary:

3.5 years of Graduate Research and Teaching Assistantship gave me the opportunity to solve the real time problems. Have depth knowledge in **Design of Digital and Analog Integrated Circuits**. Good understanding about Computer organization and architecture; and coding experience on different embedded boards (**Dragon 12+, Digilent BASYS 2**) with different programming languages (**C, C++, Assembly, Verilog**). Actively looking for Full time position in Embedded Software/hardware industry.

Work Experience:

5G Baseband Engineer at Foxconn   Nov 2019-Apr 2020
- Developing PCB board for 5G small cell remote radio head application.
- Connecting beamformer chip (ADMV4801) with Upconver/ downconver (ADMV1018) chip for frequency 24GHz to 29.5GHz range.
- Connecting different components through SPI, I2C, UART and JESD204B protocol

Graduate Research Assistant at Micro and Nanotechnology Lab, University of Missouri KC: Jan 2017 – Dec 2018
- A prototype of Graphene based supercapacitor was developed for flexible electronics
- Cyclic voltammetry technique was performed to measure the capacitance, specific capacitance and energy density of the prototype supercapacitors

Graduate Teaching Assistant at University of Missouri KC: Jan 2016 to May 2019
- Working as a TA for Different Course works for example Introduction to VLSI, Advanced VLSI and Advanced Embedded courses.

Skills:

- EDA tools: Cadence Virtuoso, HSPICE, Xilinx ISE Design Suite, ModelSim, LTspice
- Programming Language: Python, C, C++, Matlab, Verilog HDL, Assembly Language
- PCB: ExpressPCB Classic, Autodesk Eagle
- Scripting Language: Python, Perl
- Data Analysis: R, Numpy, Scikit-learn
- Operating System: Windows, Linux

Projects:

Interrupt a running program of C language on Dragon12+ board: **C**
- A program was written in C language for Up-Down counting and display the counting on 7-Seg LEDs of Dragon 12+ Board (**Processor: HCS12, 16 bit CISC architecture**) and one bit DIP switch through PTH interruption was used to decide for either Up or Down counting.

Showing the Binary to Hex conversion on 7-Seg LEDs in BASYS 2 board: **FPGA**
- In this project a binary to Hex conversion was implemented by using Xilinx ISE Design Suite and showing the results in Digilent Basys 2 board (**Processor: Spartan-3E FPGA, 32 bit RISC architecture**) in this board SW0 to SW3 were used as 4 bit input and SW4 to SW7 were used to enable or disable the 7 segment displays.

Interrupt a running program of Assembly language on Dragon12+ board: **Assembly Language**
- Here by Assembly language a program was created to toggle a LED continuously on PORTB of Dragon 12+ Board (**Processor: HCS12, 16 bit CISC architecture**) until the activation of DIP Switches through PTH interruption, after interrupt the Buzzer would sound for short period of time.

Design of 4 bit Serial-in Serial-out (SISO) Shifter   **Cadence Virtuoso (Digital Design)**
- A 4-bit serial-in Serial-out (SISO) shifter was implemented by using 0.6μm CMOS Process in Cadence Virtuoso. Used Cadence Spectre for schematic level simulation and Cadence layout suite for layout level simulation.

Design of a Code Converter: **Verilog**
- In this project a module and a test bench were created in ModelSim HDL Simulator to convert a 4-bit binary number to the corresponding 4-bit Gray code number,.

Analyze the Open Exoplanet Catalogue dataset: **R**

This is the dataset of all discovered exoplanets. Here data fields include planet and host star attributes, discovery methods, date of discovery and so on. Here I have analyzed the characteristics and the nature of relation between this all discovered exoplanet through R coding.

Education:
- ❖ Master of Science in Electrical Engineering   May-2019
  University of Missouri-Kansas City, USA   GPA 3.62
- ❖ Master of Science in Computer Science   May-2019
  University of Missouri-Kansas City, USA   GPA 3.65
- ❖ Master of Science in Applied Physics, Electronics and Communication Eng.   Sept-2011
  University of Dhaka, Bangladesh.
- ❖ Bachelor of Science in Applied Physics, Electronics and Communication Eng. Oct-2009
  University of Dhaka, Bangladesh..

Relevant Courses:
- Digital and Analog: HDL Based Digital System design, Advanced Embedded System, Introduction to VLSI Design, Advanced VLSI Design, Analog IC Design,
- Device and Manufacturing: Electronic Materials, Solid State Devices, Semiconductor Devices, Nanoscale Manufacturing
- Machine learning & Programming: Python and Deep Learning; Artificial Neural and Adaptive Systems; Image Analysis; Web, Cloud and Mobile App Programming, Design and Analysis of Algorithm, Introduction to Statistical Analysis.