Raphaelle Lomboy Marcial

PHONE 201.355.9550   EMAIL raphaelle.marcial@gmail.com   WEBSITE rm1096.github.io

Work Experience

Product Development Engineer Intern, *BMW of North America*
Aug. 2017 – Present | Woodcliff Lake, NJ
– Developed VBA programs which decreased time spent on searching for testing data by 90%
– Supported weekly tool releases utilized by the infotainment department that were updated by testing and debugging individual subroutines or adding new functions
– Assisted in shifting department from using Excel to web applications by combining SQL Server queries with VBA macros
– Created VBScripts for easily running programs

Aresty Research Assistant, *Rutgers University*
May 2016 – Sept. 2017 | New Brunswick, NJ
– Implemented a surveillance system which involved Python scripts ran on Raspberry Pis connected to solar modules, solar panel charge controllers, and rechargeable batteries to evaluate power consumption in electric vehicle charging stations
– Analyzed data and video feeds to identify when cars were full and when non-electric vehicles were parked at a charging station
– Calculated statistics about cost of charging vehicles, number of cars charging in a time period, and average charge time
– Data and statistics included in proposal to Rutgers Department of Transportation for increasing the number of stations on campus

Projects

Modified RISC Processor, *Embedded Systems*
Oct. – Nov. 2017 | github.com/rm1096/GRISC
– Designed and implemented a 16-bit processor with a modified MIPS instruction set for video and communications on an FPGA
– Created an assembly program ran on the processor to print over a UART and display different colored squares on a VGA display based on user-input characters
– Simulated waveforms to verify instructions were going through correct states
– Developed in Xilinx Vivado and utilized the IP Integrator tool to create top-level design

D Latch Layout, *VLSI Design*
Dec. 2017 | rm1096.github.io/DLatch.pdf
– Created a D Latch using Cadence Virtuoso through schematic, layout, and extracted views
– Solved netlist errors by using logic probe and referring to output file
– Simulated schematic and extracted view waveforms to verify that they matched

Restaurant Automation, *Software Engineering*
Jan. – May 2017 | github.com/rm1096/Zest-Ware
– A 7-member project that involved developing a demonstrable web application to increase efficiency in medium-sized restaurants
– Planned and executed lifecycle steps for developing the complex software product
– Utilized traditional and web programming languages such as Java, mySQL, and PHP
– Learned modular design of software and documented the design using symbolic representations via UML

Education

Rutgers University, New Brunswick
May 2018
Cumulative GPA: 3.05
Bachelor of Science in Computer Engineering
Coursework: Embedded Systems, VLSI Design, Computer Architecture, Programming, Methodology, Software Engineering, Digital System Design

Skills & Languages

VHDL	Verilog
C++	VBA
C	PHP
Assembly	mySQL
Arduino	Raspberry Pi

Tools

Xilinx Vivado	Cadence Virtuoso
Xilinx SDK	Altera Quartus
MATLAB	PSPICE

Leadership Experience

Co-Founder, *Electronics Club*
Jan. 2017 – Present | New Brunswick, NJ
– Instituted a club that allowed beginners to get hands-on experience in Arduino and Raspberry Pi
– Taught 20+ students through interactive projects
– Walked through hardware setup and coding implementation
– Assessed groups' progress and troubleshot

Monitoring Lead, *Engineers W/O Borders*
Jan. 2015 – Sept. 2017 | New Brunswick, NJ
– Led 8 members in analyzing about 100 survey results involving living costs and satisfaction levels from Guatemalan civilians by using multi-bar charts in Excel
– Designed a new survey to be utilized in the next post-monitoring trip to evaluate the organization's progress in Guatemala