Nick Liu

100 Stanford Ridge, Johns Creek, GA — nliu41@gatech.edu — 678.642.1508 — US Citizen

Objective

4th year Electrical Engineering and Computer Science Major interested in hardware internships for Summer 2018. Experienced with embedded systems, programming, circuit design, FPGAs, and PCBs.

Education

Georgia Institute of Technology Atlanta, GA

B.S. in Electrical Engineering and B.S. in Computer Science; GPA: 3.68 *Aug. 2014 – Dec. 2018 (Expected)*

EE Coursework: Control Systems, Digital Design, Digital Signal Processing, Electromagnetics, Embedded Systems, Microelectronic Circuits, Power Systems, VLSI Systems

CS Coursework: Computer Architecture, Computer Vision, High Performance Computing, Machine Learning, Operating Systems, Processor Design

Experience

SpaceX Irvine, CA

Satellite Development Intern *May 2017 - August 2017*

- Created SystemVerilog UVM tests to verify operation of interrupt controller and error handling for modem ASIC
- Verified operation of register file with AMBA APB interface using UVM register sequences
- Setting up regression testing with Bamboo and Jenkins for continuous integration of RTL code

Tesla Palo Alto, CA

Firmware Validation Intern *January 2017 - April 2017*

- Performed system validation of HVAC functionality of vehicles through use of a hardware test automation box
- Used automated testing system interfacing with car gateway and display to read CAN signals, send commands, and read thermocouple values
- Wrote test suite for testing thermal systems using Python, ROBOT Framework, and Jenkins to speed up testing of thermal firmware

Northrop Grumman Baltimore, MD

Processing Technologies Intern *May 2016 - August 2016*

- Modified scripts with Tcl, Python, Bash, and Make to increase project compile and regression speed
- Built SystemVerilog UVM test bench consisting of agent, monitor, driver, scoreboard, sequences, and sparse memory to test DUT

Georgia Institute of Technology Atlanta, CA

Research Assistant *August 2015 - Present*

- Optimizing CUDA kernels to test different sparse tensor formats for decomposition
- Creating DAQ system for rocket engine hot fire with PSoC, RTOS, sensors, and PCBs
- Developed initial 3-stage parallel pipelined processor for GPGPU research that supports simple vector instructions using Chisel, an open-source HDL
- Layed out power routing PCB to connect power system of CubeSat and tested battery using I2C and Arduino
- Prototyped feedback system to interface with FPGA involving changing Embedded Linux firmware, a power relay, and EL Wire
- Extending Verilog framework for characterizing 3D stacked memories with FPGA hardware

Projects

Map Bot (MCU, C++, C#): Robot that autonomously moved around and mapped a room from IR sensor data and IMU data and sent serial data wirelessly to PC through use of RTOS

Pipelined Processor (Verilog,FPGA): 5 stage pipelined processor in Verilog with flushing, stalling, and data forwarding simulated with ModelSim and programmed on Altera FPGA

Skills

Programming: Java, C, C++, Verilog, VHDL, SystemVerilog(UVM), MATLAB, Assembly, Python, Tcl, Bash, Jenkins, OpenMPI, OpenCL, CUDA

Hardware: FPGA, MCU, Oscilloscope, Function Generator, Logic Analyzer, Multimeter, Power Supply, Soldering