HENRY CRUTE

(831) · 325 · 8718 ◇ henrycrute@gmail.com
5117 N Lamar Blvd ◇ Austin, TX 78751
10440 Rock Creek Dr ◇ San Diego, CA 92131

EDUCATION

University of Texas at Austin *August 2015 - Present*
M.S. in Electrical & Computer Engineering
Academic Focus in Architecture, Computer Systems, and Embedded Systems

University of California, Santa Cruz *September 2011 - June 2015*
B.S. in Computer Engineering
Minor in Computer Science
Dean's Undergraduate Research Award: May 2015
Dean's Honors: Fall 2013 - Spring 2014
Member of Tau Beta Pi Engineering Honor Society

EXPERIENCE

UC Santa Cruz June 2014 - June 2015
Research Assistant *Santa Cruz, CA*

- Wrote PIC32 firmware for intermediate data flow control and processing between the MCP3912 sigma delta ADC and wifi/usb controllers.
- Wrote firmware for the ESP8266-03 to store and http POST wattage data to a test server.
- The ESP8266-03 firmware includes the use of an ad hoc chip configuration network as well as regular station mode to connect to the server end point.
- Maintained MSP430 firmware for high speed voltage and current sampling.
- Wrote data visualization software for big data with MATLAB and Python.

CITRIS/ITI June 2014 - January 2015
Technical Assistant *Santa Cruz, CA*

- Served in technical support for equipment in CITRIS conference rooms, experimental classrooms and videoconferencing facilities, for their audio-visual and teleconferencing equipment.
- Helped manage conferences, research symposiums, classes, job fairs, and other events requesting CITRIS space.

iD Tech Camps Summer 2012 - 2013
Instructor *Irvine, CA and Los Angeles, CA*

- Taught an introduction to programming in Java using Eclipse to kids ages 13 to 17.
- Taught a LEGO Robot Mindstorms curriculum to kids ages 8 to 12.
- Includes interaction between programming, the physical world, and problem solving.

TECHNICAL SKILLS

Computer Languages	C/C++, Embedded C, Python, Assembly, Java, Matlab, SystemVerilog, Perl
Communication & Networking	TCP & UDP IPs, PAM-N & QAM-N Transceivers
Tools & Platforms	Git, Mercurial, gem5, Code Composer, Eclipse, MPLAB, NP++, Geany, FDATool

ADDITIONAL EXAMPLE PROJECTS

SRRIP Replacement Policy - Built using C++ and Python. Added the Static Re-Reference Interval Prediction policy in C++ to gem5 and compared it to the already implemented LRU policy. Statistics of cache misses for different associativity and sizes were obtained using python and SPEC CPU 2006 test benches.

Array Multiplier Variants - Built using Verilog. Analyzed the differences in complexity and delay between having regular ripple carry adders and carry select adders for columns and rows. Used Quartus II to synthesize and obtain timing results, and Modelsim to verify the different designs.

Compiler - Built using C++, Flex, and Bison. The compiler scans, parses, type checks, and outputs appropriately translated assembly code. The language is a subset of C, and includes structs, loops, variables, if statements, scope, functions, and more.

Foobar Challenges - Built using python. Documented and solved numerous coding challenges in the topics of algorithms, data structures, low-level representation, math, and cryptography.