

HENRY CRUTE

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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

- Managed a LAMP stack server.
- Wrote data visualization software for big data with MATLAB and Python.
- Maintained MSP430 firmware for high speed voltage and current sampling.
- Supported server migration to Django web framework with a PostgreSQL database for incoming data, and a default SQLite database for user configuration.
- Added full support for server deployment using Puppet.
- 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 network for chip configuration to local detected SSID's, as well as the server end point.

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 all 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, General Assembly, Java, Matlab, Bash, Verilog, Perl

Communication & Networking Tools & Platforms

TCP & UDP IPs, PAM-N & QAM-N Transceiver Design
Git, Mercurial, gem5, SPEC CPU 2006, 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.