**Chaitanya R. Patchava**

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**EDUCATION**

**Stanford University September 2013-Present**

**Masters in Computer Science**

**University of Illinois at Urbana-Champaign August 2009 - 2013**

**Bachelor of Science in Computer Engineering**

**COURSES – Towards Masters**

Machine Learning

**WORK EXPERIENCE**

**Cisco Systems** San Jose, CA

*ASIC Hardware Design*  Aug 2013 - Present

* Designed a System Verilog Test Bench for the Access Control Protocol block
* Wrote drivers in C++ to access TCAM of AC block and placed permission information for various Internet Protocols
* Wrote software APIs in C and C++ to integrate with RTL and C++ model to compare real time data from hardware emulation to software model
* Created a web GUI utilizing bootstrap (HTML, CSS, JS) for display framework along with Morris JS(XML, JS) Graphs with a LAMP setup as the backend to display passing and failing tests
* Managed a team of ten people to demonstrate progress in their verification environments

**Tivo Inc**Alviso, CA

*Software Driver* May 2011 – Jan. 2012

* Designed drivers in C to take temperature measurements as input variables of hardware unit
* Manipulated a GPIO chip in order to interface with the fan unit
* Utilized input temperature readings to dictate whether to increment or decrement speed of fan

**SIDE PROJECTS**

**Currently working on:**

**Designing a home automation system** *Programmed in C*

* Utilized Cypress PLC chip as means of communication along with XBEE WiFi modules
* Used a Raspberry pi as the central hub which did compute and sent commands to slaves
* Slaves were Atmega328 chips which I powered with DC converter and sent signals to TRIAC
* Would track how long devices were on in order to determine rough estimate of power consumption

**Operating System Design** *Programmed in C*

* Writing a kernel from scratch, included the capability to run multiple programs and different shells simultaneous
* Currently setup IDT/GDT in order to take user input and do simple system calls, with scrolling buffer
* Next steps to write a scheduler in order to most effectively process tasks
* Created an ISO of operating system and utilized QEMU as a testing platform to run “Chaitanya-OS”
* Motivation for writing an Operating system is not only to brush up on C programming, but also want to write a lighter OS for my home automation system with built in system and kernel leve

**Past:**

**Designed a naïve bayes classifier for safest path** *Programmed in Perl*

* Wrote a spider to crawl onto local sheriffs street crime reports (in python)
* Took that data and then analyzed using a naïve bayes classifier to determine the safest path(Perl, Mathematica)
* Used google maps APIs to give step by step directions for users.

**Design of a Pipelined Microcontroller** *Programmed in VHDL*

* Designed a full microcontroller, was a fully capable five stage pipeline processor
* Created an L1 and an L2 eight way set associative cache with a true LRU

**RFID-tag music player** *Programmed in C/Bash*

* Used an RIFD reader connected to an Arduino in order to ping for tag values within range
* Programmed the Arduino to respond to a tag by sending tag value to computer through serial port
* Interpreted the incoming RFID tag values as names of playlists utilizing BASH to make the system calls

**SKILLS**

**Programming:** C, C++, Verilog, System Verilog, HTML, Perl, Python,x86, Assembly, Bash

**Familiar with:** SQL, Java Script, CSS.

**Hardware:** Arduino, Raspberry Pi, Oscilloscopes, Logic Analyzer, Function Generator, Multimeter.

**Software:** Verdi, Debussy, RT, Design Compiler.