Ian Chang

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Education

University of California, Berkeley. 2018-2021
B.S. in Electrical Engineering and Computer Sciences (EECS) | **GPA: 3.74/4.0**
Courses: Data Structures, Structure and Interpretation of Computer Programs, Computer Architecture and Design, Circuits + Linear Algebra, Nonlinear Circuits, Foundations of Data Science, Physics for Engineers

Santa Monica College. 2015-2018
Entry Level Programmer Certificate (Dual Enrollment) | **GPA: 4.0/4.0**
Courses: C Programming, Internet Programming (Front-End JavaScript), Visual Basic Programming

Honors

USA Computing Olympiad Gold Perfect Scorer
USA Computing Olympiad Platinum Competitor
Santa Monica High School Salutatorian (Class of 700)
ACT Perfect Scorer
UC Berkeley Bowles Hall Residential College Dean's List
Crawford Memorial Mathematics Scholarship

Employment

Bitcoin Presenter, Santa Monica Public Library, Santa Monica, CA. April 2018
- Arranged and founded the "Introduction to Bitcoin" library program, teaching over 35 citizens on the technicalities behind cryptocurrencies. Rated 4.5/5 stars.

Research

Research Assistant (under Prof. Puneet Gupta), NanoCAD Lab, UCLA. Sept. 2016 – June 2018
- Developed Verilog parser using Python to re-arrange FPGA I/O chip hierarchies using tree data structures and depth first-search algorithms. Replaced manual rearrangement of I/O blocks with instantaneous, automated block rearrangement to expedite FPGA code design process from **1+ hours to milliseconds**.
- Architected Verilog block hierarchies and unit-tested results with Xilinx ISE Design Suite. Tested multiple constraints of chips in attempts to scale down a PCB chip (centimeters) to a silicon die (nanometers).
- Implemented a Mac OS X port for an open-source memory benchmarking tool (X-Mem) using C++, POSIX, and Mach thread libraries. By extending compatibility to Mac OS X users, increased users of X-Mem in utilized courses by **30%.**
- Integrated Clang compiler support and SCons compatibility for X-Mem Mac OS X developers using Python, expanding compiler usage to Mac OS X systems. Predicted to add **~33%** more developer support.
- Designed real-time data visualization website for X-Mem that uploads and parses X-Mem CSV results using MySQL, PHP, Plotly.js, and Bootstrap CSS. Created a system where users can share and compare their memory benchmarking results online instead of inefficiently transferring CSV files and creating manual spreadsheets, **diminishing 15+ minutes of manual parsing into ~10 seconds**.

Teaching

Teaching Assistant, Los Angeles Computing Circle, UCLA. July 2016 – Aug. 2016
- Mentored underrepresented high school students in college-level material, including machine learning, clustering, NumPy, and Python and Lua development as part of a UCLA EE Department hosted program.

Volunteering

Programming Volunteer, Santa Monica Public Library, Santa Monica, CA. Sept. 2017 – Oct. 2017
- Collaboratively developed a controller-enabled adventure video game using Python 3 and PyGame library that was publicly featured and played by library visitors during International Failure Day.

Projects

Coinlet — Bitcoin/Ethereum/Litecoin Price Tracker
- Developed RESTful Android app to track cryptocurrencies prices in real-time using Android Studio, Retrofit Library (REST HTTP Client), and Coinbase API (Cryptocurrency Market Interface).

Voice-Controlled Robotic Motor Car
- Built a motorized car utilizing an MSP430 microcontroller, breadboard, frequency response filters, and PCB-soldered microphone. Designed closed and open-loop models to drive multiple directions/angles and implemented an SVD/PCA algorithm in Energia IDE (C/C++) to read human voice commands.

Grades for SMMUSD (Now Unsupported)
- Developed an asynchronous Android app that parsed the Illuminate DOM to periodically notify of new school grades, amassing **350+ downloads**. Used JSoup library for HTTP/cookie requests and parsing.

Languages

Java, Python, C, SQL, Scheme (Functional Programming), RISC-V Assembly, Verilog

Skills

APIs, Git, Linux, JUnit Testing, GNU Debugger, Kernel Programming, IntelliJ, Android Studio, Vim, Tmux