Chenyang Yuan

yuanchenyang@gmail.com http://www.github.com/yuanchenyang http://www.chenyang.co

Education

Major in Computer Science, Minor in Physics Expected Graduation: May 2016
The University of Berkeley at California, Berkeley, CA GPA: 3.94

Technical Skills

Proficient in Python, Javascript, LaTeX, Emacs, Git
Experience in Haskell, Rust, Scheme, Java, C, jQuery, d3, HTML, Hadoop, Android, SQL, Assembly

Research/Teaching/Work Experience

Undergraduate Student Researcher (Prof Alex Bayen), *UC Berkeley* *Spring 2015 – Present*

- Helped develop and implement algorithms for inferring route flows of traffic from cellular data.
- Used queueing theory to develop a model for investigating attacks on mobility as a service systems, formulated and solved for optimal attacks, and ran experiments using a dataset of 1B NYC taxi trips.
- Studied the effects of real-time routing services on traffic with a routing game framework.

Undergraduate Student Researcher (Prof Ras Bodik), *UC Berkeley* *Spring 2014 – Fall 2014*

- Helped built a compiler which synthesizes a layout engine in Rust from a CSS specification, which replaces the hand-written layout engine in the experimental browser Servo.

Undergraduate Student Instructor, *UC Berkeley* *Fall 2013 – Fall 2015*

- 3 semesters of Structure and Interpretation of Computer Programs, 1 semester of Discrete Math and Probability and 1 semester of Designing Information Devices and Systems.

Software Engineering Intern, *Clover* *July–August 2013*

- Amongst other projects, designed and built an API auto-documentation system and API Explorer.

Programming Projects

Linear Algrbra DSL `https://github.com/yuanchenyang/llvm-linear-algebra-dsl`
An open-ended project for a compilers class. First created a set of tools for building domain specific languages (DSLs) using LLVM for code generation and created a DSL for linear algebra operations with domain-specific optimizations. Then implemented an edge detector and an optical flow estimation algorithm using the DSL.

Facebook Group Archiver `http://archiver.chenyang.co`
A tool for saving Facebook groups in a local database and doing comprehensive searches locally. After the first download, it will sync the local database with the Facebook group during each run. Also includes a web-interface for stats, searching and doing database queries.

Interactive SICP Textbook `http://xuanji.appspot.com/isicp/1-1-elements.html`
Made an interactive version of the classic Structure and Interpretation of Computer Programs book with my friend. I created the asynchronous Javascript-based Scheme interpreter used on the website.

Self-Balancing Robot `http://youtu.be/Ps0Ex3ADR6k`
An open-ended project for my physics electronics lab class, built a self-balancing robot from scratch. Programmed a controller for it on an Arduino board.

Selected Awards

First Place, Cal vs Stanford Big Hack *2013*
Created a scheme interpreter in C on my TI-89 graphing calculator
Honorable Mention, 12th Asian Physics Olympiad *2011*
One of the 8 students selected to represent Singapore in this competition.

Selected Coursework

EECS: Information Theory, Cryptography, Graduate Algorithms and Theory, Compilers, Security, AI, Randomized Algorithms

Math: Complex Analysis, Honors Abstract Algebra (introduction to category theory)

Physics: Analytical Mechanics, Quantum Mechanics, General Relativity, Electronics Lab