Charles Lai

cjl223@cornell.edu • charlesjianlai.com • github.com/charleslai • linkedin.com/in/charlesjianlai

Education

CORNELL UNIVERSITY

B.S. Computer Science • Ithaca, NY • GPA: 3.62 • Class of 2016

Coursework: Software Engineering, Distributed Systems, Operating Systems, Algorithms, Machine Learning, AI, Computer Vision, Operations Research

Experience

YELP

Incoming Software Engineer • San Francisco, CA • Starting Jul 2016

DATADOG

Software Engineering Intern & hackNY Fellow • New York, NY • Jun 2015 - August 2015

- Created REST API endpoints that allow users to programmatically create embeddable graphs and retrieve user data.
- Implemented OpenID 2.0 authentication flow for AppDirect SSO and patched XSS/SQL injection vulnerabilities.
- Restructured SVG avatar pattern instantiation which improved dashboard load times by 5-10%.
- Completely automated blacklisted domain verification with Amazon Route 53 and boto.
- Updated Python/Ruby API wrapper libraries, developed test suites, and handled live client support tickets.

VERIZON

IT/Business Intelligence Intern • Irving, TX • Jun 2015 - August 2015

- Created a Python naive Bayes classifier on a 2GB dataset to analyze textual sentiment patterns in Salesforce Chatter.
- Analyzed and reported the international, end-to-end business metrics of an automated marketing tool to the CIO.

GTA INFORMATION TECHNOLOGY

Software Developer Intern • Shenzhen, CN • Jun 2015 - August 2015

- Developed technical indicator based trading algorithms in Matlab (MACO, MACD, support/resistance, variance, oscillator, etc).
- Consistently outperformed the CSI300/HKSI yielding 15+% annualized returns on backtests of historical data

Academia / Project Teams

CORNELL UNIVERSITY

Teaching Assistant • Ithaca, NY • Aug 2014 - Dec 2015

- CS 1300: Introduction to Web Design and Programming | *HTML/CSS, Javascript, jQuery, FTP*
- CS 2300: Intermediate Web Design and Programming | *PHP, MySQL, Apache, File I/O, MVC, AJAX, HTTP, API calls*
- CS 3410: Computer Organization and Systems Programming | *Digital Logic, CPUs, Caches, Memory, OS, C, MIPS, Synchronization*
- Held office hours, taught lab sections, developed slide decks, graded assignments, and revamped course materials.

CORNELL DATA SCIENCE CLUB

Software Developer • San Francisco, CA • Aug 2015 - Dec 2015

- Created Python/Flask server that runs a precompiled classifier on scraped ESPN data to predict NBA game outcomes.
- Provisioned the Tornado backed server on DigitalOcean which exposes API endpoints to a Javascript web application.
- Final classifier utilizing gradient boosted decision trees converges to 68-71% accuracy on validation datasets.

REIMAGINATION LAB

Research Assistant • Ithaca, NY • Feb 2014 - Dec 2014

- Helped develop Achieve, a mobile goal achievement application that utilizes social accountability and team support to boost motivation using Node and Express. White paper at http://dl.acm.org/citation.cfm?doid=2559206.2581325

Selected Projects

BITR: (3rd Place & Clusterpoint Prize @ Angelhacks Manhattan)
Swift/Node/iOS application that allows users to up-vote and mark arbitrary locations and objects on a globally shared map.

VENMO DASH: (Braintree Prize @ Hack the Planet)
Javascript/Node web application/dashboard adding analytics, recurring payments, and scheduled payments to Venmo.

TUBER: Python/Flask application powered by Twilio that provides accessibility for Uber to users without smartphones via SMS.

DISTRIBUTED PAGE RANK: Java/Hadoop MapReduce framework for computing page rank across nodes on Amazon EMR.

IMAGE SCISSOR: C++ application that intelligently extracts images using gradient kernel convolution and Dijkstra's algorithm.

PANORAMA: Python application that automatically stitches images with spherical warping, homographies, and alpha blending.

GOMOKU AI: Javascript AI that utilizes multi-level Negamax game trees with alpha-beta pruning to play Gomoku (five-in-a-row).

Skills

PROFICIENT: Python, Flask, Java, Javascript, HTML/CSS, SQL, PHP **FAMILIAR:** Ruby/Rails, C/C++, MIPS, OCaml, Matlab, bash