Charles J. Lai

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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
SOFTWARE ENGINEER • SAN FRANCISCO • STARTING JUL 2016

DATADOG
SOFTWARE ENGINEERING INTERN & HACKNY FELLOW • NEW YORK CITY • JUL 2015 - AUG 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 • JUL 2014 - AUG 2014
- 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 DEVELOPMENT INTERN • SHENZHEN, CN • JUL 2013 - AUG 2013
- 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

EXTRACURRICULAR

CORNELL UNIVERSITY
TEACHING ASSISTANT • ITHACA, NY • AUG 2014 - DEC 2015
- CS 1300: Introduction to Web Design and Programming | *HTML/CSS, Javascript, jQuery, FTP, Validation, User Testing*
- CS 2300: Intermediate Web Design and Programming | *PHP, MySQL, Apache, File I/O, MVC, AJAX, HTTP, API Design, Security*
- 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 • ITHACA, NY • 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 2015
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.
GOMOKU AI Javascript AI that utilizes multi-level Negamax game trees with alpha-beta pruning to play Gomoku (five-in-a-row).
PANORAMA Python application that automatically stitches images with spherical warping and homography computation via SVD.
IMAGE SCISSORS C++ application that intelligently extracts images using gradient kernel convolution and Dijkstra's algorithm.
DISTRIBUTED PAGE RANK Java/Hadoop MapReduce framework for computing PageRank using Amazon EC2 and EMR.

SKILLS

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