

# Charles J. Lai

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## EDUCATION

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### 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

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### YELP

SOFTWARE ENGINEER • SAN FRANCISCO • STARTING JUL 2016

### DATADOG + HACKNY

SOFTWARE ENGINEERING INTERN & SUMMER 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
- Optimized SVG pattern instantiation to improve dashboard load times and automated domain verification with Amazon Route 53
- Updated Python/Ruby API wrapper libraries, developed new unit tests, 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

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### CORNELL CS DEPARTMENT

TEACHING ASSISTANT • ITHACA, NY • AUG 2014 - DEC 2015

- CS 1300: Introduction to Web Design and Programming I *HTML/CSS, Javascript, jQuery, FTP, Validation, User Testing*
- CS 2300: Intermediate Web Design and Programming I *PHP, MySQL, Apache, File I/O, MVC, AJAX, HTTP, API Design, Security*
- CS 3410: Computer Organization and Systems Programming I *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

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### BITR 3rd Place & Clusterpoint Prize @ Angelhacks Manhattan 2015

Swift/Node/iOS application that allows users to up-vote arbitrary locations, pin photos, and follow friends on a globally shared map

### VENMO DASH Braintree Prize @ Hack the Planet

Node/Express web application/dashboard adding analytics, recurring payments, and scheduled payments to Venmo

### FILLANTHROPY Mind Finalist @ Stanford Longevity Design Contest

Python/Flask web application that aims to match volunteers with potential service opportunities and vice versa.

**TUBER** Python/Flask accessibility service that allows people without smartphones or data to use Uber via SMS through Twilio

**SESSION MANAGER** Java distributed session manager that utilizes RPC and a Gossip protocol over UDP on Amazon EC2/ELB

**DISTRIBUTED PAGE RANK** Java/Hadoop MapReduce framework for efficiently computing PageRank on Amazon EC2/EMR

## SKILLS / HONORS

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