# Gary Cheng

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## EDUCATION

**University of California, Berkeley** **GPA: 4.0**

B.A. Computer Science | Anticipated Graduation: 2018

- *Relevant Coursework*: Probability and Random Processes, Optimization Models and Applications, Algorithms, Data Structures, Discrete Math & Probability, Computer Architecture, Linear Algebra and Differential Equations

## EXPERIENCE

**Software Development Intern** **May '17 – Aug '17**

*Amazon.com*

- Will be working on the Supply Chain Optimization team in Seattle, project to be determined at the start of the internship.

**Research Assistant** **Aug '16 – Present**

*Jean Walrand, BLISS Lab, Berkeley Computer Science*

- Working with Professor Walrand to optimize surgery room scheduling, aiming to minimize idle and wait times by altering when patients arrive at the hospital
- Implementing a stochastic gradient descent with infinitesimal perturbation analysis on a non-convex cost function to determine optimal notification times for patients in an online scheduling system

**Teaching Assistant – Data Structures Class** **Jan '17 – May '17**

*Berkeley Computer Science, Berkeley*

- Teaching a section and lab of ~30 students every week, preparing supplemental discussion slides to aid student understanding in learning about data structures, working in office hours to resolve student issues
- Working on the Data Analysis team, observing trends in office hour, grading, and survey data to optimize the course, total workload: 8 hours/week

## PROJECTS

**Google Trends predicts the Stock Market** *(github.com/garyxcheng/stock-prediction)*

- Using Python, TensorFlow, Pandas DataFrames, and Google Trends data to predict the movements of the S&P 500. Used autocorrelation plots and log return data to determine predictive value of a searched term. Trained a neural net with 2 hidden layers over a 3-year dataset.

**CS61b data analytics**

- Used Piazza data, office hour queue data, and grading data to analyze connections between student data and exam performance. Found slight correlations between number of questions asked on Piazza/Office hours to grade. Currently implementing a binary classifier to determine whether students get a 3.30 GPA

**Taxi Cab Markov Chain** *(github.com/garyxcheng/pafnutys-taxi)*

- Used Python, Pandas DataFrames, Numpy to model NYC taxi cab movement/fares as a Markov Chain, Used k-means algorithm and elbow method to generate state space of Markov Chain. Found steady state distribution of the graph as well as the locations in NYC that maximize profit for taxi cab drivers.

**Vuepal** (*facebook.com/vuepal)*

- Developing an iOS app using Swift, Cocoa Touch, Xcode, and Firebase that allows users to share the photos they have taken with one another as they travel together, integrated an offline backup feature so users will have access to all shared photos even in low-bandwidth areas
- Pitched to VCs at the European Innovation Academy accelerator, many expressed interest in our product

## LANGUAGES

*Proficient:* Python. Java, C, SQL, Scheme, Swift (iOS)
*Familiar:* HTML, CSS, JavaScript, Node.js