Brandon Zhang

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Education and Activities

Cornell University 2016, College of Engineering (GPA: 3.88)
- B.S. in Computer Science (Expected)
- Teaching Assistant
  - CS 4820 Introduction to Analysis of Algorithms, Spring 2016
  - CS 4320 Introduction to Database Systems, Fall 2015
- Association of Computer Science Undergraduates, Treasurer

Thomas Jefferson High School for Science and Technology 2013

Relevant Skills

Languages: Java, C, C++, JavaScript, Python, OCaml, MATLAB, PHP
Additional Skills: HTML/CSS, GIT, MongoDB, MySQL, D3, jQuery, MVC, Linux, Windows, OSX

Work Experience

MongoDB, Software Engineering Intern **Summer 2015**

- Worked on geospatial performance improvements, focusing on geoNear queries
- Implemented an optimization that allowed geoNear queries to keep track of the area covered by previously scanned index cells
  - Observed performance improvements by orders of magnitude on dense sample datasets
  - Included in the 3.1.6 release of MongoDB
- Created a proof-of-concept implementation of geoNear queries with lines and polygons
  - Allows users to query to find points closest to a line or polygon (e.g. finding the closest restaurants to a route)
  - Won the Skunkworks (3-day company-wide hackathon) award for "Best Use of MongoDB"

Talentshape talentshape.com, Co-Founder **2013-2014**

- Created a learning management system designed to make course creation, analytics, and compliance requirements simpler for businesses
- Wrote the Sharable Content Object Reference Model (SCORM) engine for our site
  - Created a system to automatically generate a course based on a manifest file and resources provided in a user-uploaded content package
  - Implemented the SCORM Runtime API that allowed individual Sharable Content Objects to interact with our site and store values through JavaScript
- Created a multi-level course system allowing users to create sections within their courses, reorder modules and sections, upload different types of content, and enforce ordering of modules

Projects

- **MovieCluster** (moviecluster.herokuapp.com) (2015) – web application that enables users to find a movie to watch using k-means clustering. By successively clustering based on chosen fields and throwing away unwanted clusters, users can narrow the movie selection down to a manageable number of choices.
- **Embox** (on Chrome Web Store) (2014) – Chrome extension that allows users to embed a website of their choice into any div on a webpage. Designed an intuitive user interface allowing users to store their favorite websites in the extension.
- **Muzimer** (2013) – Android app that creates a music playlist that lasts close to a user-specified amount of time by selecting the most optimal songs from a randomly selected set using the knapsack algorithm.

Publications

Haoxian Chen, Nate Foster, Jake Silverman, Michael Whittaker, Brandon Zhang, and Rene Zhang. **Felix: Implementing Traffic Measurement on End Hosts Using Program Analysis**. In *ACM SIGCOMM Symposium on SDN Research (SOSR), Santa Clara, CA*, March 2016.