Brian Qi

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EDUCATION

University of California, Berkeley — B.A. in Computer Science, College of L&S — Expected May 2020
Overall GPA: 3.95 — B.A. in Data Science, College of L&S

Relevant Coursework: Data Structures, Algorithms and Complexity, Discrete Math and Probability, Linear Algebra, Data Science and Machine Learning, Programming Languages

EXPERIENCE

Pioneers in Engineering – *Software Developer; Berkeley, CA* 09/2017 – Present

- Assisted in building a new field control system (Shepherd) for the Pioneers in Engineering strategy robotics competition
- Wrote methods in Python to open LCM channels and send/receive information between the main state machine, the scoreboard, and sensors in order to establish inter process communication
- Documented and designed LCM communication with modularity in mind so that future iterations will be able to modify the Shepherd project instead of rebuilding from scratch
- Helped design the front-end interface for students using HTML, CSS and JavaScript

Computer Science Mentors – *CS70 Junior Computer Science Mentor; Berkeley, CA* 01/2019 – Present

- Led 2 weekly small-group mentoring sections teaching students instructional material on discrete mathematics (CS70) covering topics such as the stable marriage problem, the RSA cryptosystem, error-correcting codes, and self-reference
- Met with students one-on-one for more personalized academic and personal support and worked on task force to provide extra services such as review and midterm prep sessions

UC Berkeley Electrical Engr. & Computer Science – *Academic Intern; Berkeley, CA* 08/2018 – 12/2018

- Delivered lectures to undergraduate students on topics such as programming, data structures, and software design
- Initiated, facilitated, and moderated classroom discussions in a class size of 25+ students
- Maintained regularly scheduled office hours (1.5-3 hours/week) to advise and assist students with course material

PROJECTS

Bear Maps – *Java, Python*

- Utilized real-world mapping data to implement the back end of a Java web mapping application
- Performed rastering, routing and graph traversals using quad trees and the A* algorithm to find suggested navigation
- Functionalities implemented include scrolling, zooming, autocomplete, and route finding

Gitlet – *Java*

- Created a slim version-control system that closely mimics Git's features (i.e. commit, branch, merge, log and status)
- Used Java's serializable interface and cryptographic hash functions to design internal file structures

Scheme Interpreter – *Python*

- Developed an interpreter for a subset of the Scheme language using Python
- Interpreter supported call expressions and special forms (i.e. define, define-macro, cond, let, begin, lambda, mu)

Yelp Restaurants – *Python*

- Created visualization of restaurant ratings using machine learning and the Yelp academic dataset
- Used a Voronoi diagram to section Berkeley into regions that are shaded by the predicted rating of the closest restaurant

Ants vs. Some-Bees – *Python*

- Engineered own version of a popular tower defense game using functional and object-oriented programming paradigms

HONORS

Dean's Honor List Spring 2018 – Present
Upsilon Pi Epsilon (UPE): Computer Science Honor Society Spring 2019 – Present

- Facilitated private academic tutoring and office hours for engineering students to succeed in lower division courses

SKILLS

Computer Languages and Tools: CSS, Git, HTML, Java, JavaScript, LaTeX, Python, Regex, Scheme, SQL