# BRIAN QI

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## EDUCATION

**University of California, Berkeley**    B.A. in Computer Science, College of L&S                Expected May 2021
**Overall GPA: 3.96/4.00**               B.A. in Data Science, College of L&S
**Relevant Coursework:** Data Structures, Algorithms, Software Development, Data Science and Machine Learning, Programming Languages, Artificial Intelligence, Discrete Math and Probability, Machine Structures, Linear Algebra

## WORK EXPERIENCE

**Software Engineering Intern – HelpWear** (Toronto, Canada)                                06/2019 – 08/2019
- Collaborated with product management, design and engineering teams to develop and test critical software for a wearable heart monitoring system using agile practices and test-driven development
- Developed a program that generates patient reports from raw ECG data for cardiologists to analyze (Python, SQL)
- Optimized code for ECG segmentation, increasing processing speed by 25 times and segmentation accuracy by 30%
- Created algorithms to detect heart beats and irregular heart rhythms for mobile app and patient reports (Python)

**Junior Mentor – Computer Science Mentors** (Berkeley, CA)                                 01/2019 – Present
- Taught concepts from CS 70 (Discrete Math and Prob. Theory) to 2 auxiliary sections of 5 students every week
- Provided extra services such as review and midterm prep sessions to 700+ students

**Software Engineer – Pioneers in Engineering** (Berkeley, CA)                              08/2017 – Present
- Participated in the development of a new field control system for the Pioneers in Engineering robotics competition
- Established inter-process communication by building intermediate Python servers to connect LCM channels to the staff controls GUI, scoreboard GUI, and robot runtime program
- Designed and implemented the front-end interface for competitions used by 350+ participants each year

**Academic Intern – UC Berkeley Department of Electrical Engineering & CS (**Berkeley, CA)   08/2018 – 12/2018
- Delivered lectures to students on CS fundamentals such as object-oriented design, data structures and algorithms
- Maintained regularly scheduled office hours (2-3 hours/week) to advise and assist students with course materials

## PROJECTS

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

**Bear Maps** – Java, Python
- Utilized real-world mapping data to implement the back end that powers the API of a Java web mapping application
- Performed routing and graph traversals using quad trees and the A* algorithm to find suggested navigation
- Implemented core functionalities include scrolling, zooming, autocomplete, and route finding

**Scheme Interpreter** – Python
- Programmed an interpreter for a subset of the Scheme language using Python
- Interpreter supports 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 shaded by the predicted rating of the closest restaurant

**Spam/Ham Classification** – Python
- Created a classifier that can distinguish spam from non-spam emails by applying feature engineering to text data
- Used Python's sklearn libraries to process data and fit model; applied cross-validation to minimize overfitting

**Personal Website** – HTML, CSS, JavaScript
- Designed and created webpages for my personal portfolio at bqi7.github.io using HTML, CSS and JavaScript

## TOOLS AND TECHNOLOGIES

**Proficient:** Java, LaTeX, Python (+ NumPy, SciPy, scikit-learn, Jupyter, pandas, re, ray distributed computing), SQL
**Familiar:** C, CSS, Git, HTML, JavaScript (+ jQuery), Linux, MySQL, Scheme, Unix