GEMMA GUO

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EDUCATION

UNIVERSITY OF CALIFORNIA, BERKELEY: *May 2019 (anticipated)*
B.A. Computer Science, *College of Letters and Sciences*
Major GPA: 3.79

COURSEWORK: Intro to Computer Programs · Data Structures · Computer Architecture · Discrete Math/Probability · Artificial Intelligence · Algorithms and Intractable Problems · Database Systems · User Interface Design and Development · Computer Security · Operating Systems · Internet Architecture and Protocols (in progress) · Data Science Principles (in progress) · Compilers (in progress)

ASSOCIATIONS:
Upsilon Pi Epsilon (CS Honor Society)

EXPERIENCE

QUANTCAST (SOFTWARE ENGINEERING INTERN): *May 2018-Aug 2018*

- Used **Terraform** to automate the management of **Datadog** monitors and put them in version control.
- Designed a library of **reusable modules** for common monitor types in order to simplify codifying new monitors, reduce code duplication, and enforce stricter standards in monitor set-up.
- Won first place in the summer intern hackathon, where I worked in a team of four to build a web app that ranked website popularity for a given set of topics and demographics.

IBM ASPERA (SOFTWARE ENGINEERING INTERN): *May 2017-Aug 2017*

- Worked on the streaming team to develop an **Android** demo application.
- Implemented an app that **adaptively streamed** side-by-side videos to compare the performance of streaming over FASP to streaming over TCP.

UC BERKELEY (ACADEMIC INTERN): *Jan 2017-May 2018*

- Taught and guided students during lab for CS61B (Data Structures and Algorithms), ensuring that they complete lab assignments and understand the concepts behind their work.

TVU NETWORKS (WEB DEVELOPMENT INTERN): *July 2016-Aug 2016*

- Interned at a company that builds live mobile broadcasting equipment.
- Worked on backend of web application to monitor customer data usage.

PROJECTS

PINTOS OPERATING SYSTEM EXTENSIONS (C): Extended PintOS, a simple operating system. Implemented scheduling algorithms for threads, support for command-line arguments, and process control and file operation system calls. Also added a buffer cache, as well as support for extensible files and a hierarchical directory structure.

MAP OF BERKELEY (JAVA): Programmed the backend of a web-based, interactive map of Berkeley in Java, using real-world data. Implemented an A* algorithm to calculate the shortest path between any two locations, and utilized a quad-tree data structure to store the map image in order to achieve different levels of detail when zoomed in or out.

DATABASE (JAVA): Implemented B+ Trees with bulk loading, multiple join algorithms (including PNLJ, BNLJ, External Sort Join, and Sort Merge Join), and a relational query optimizer that used System R Dynamic Programming to search for the optimal query plan. Also implemented table-level and page-level locking to manage multiple transactions.

SKILLS

TECHNICAL: **Java**, **Python**, **C**/C++, Terraform, Git, SQL, JavaScript, HTML/CSS