San Diego, CA

Derrick Quach

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Education

University of California, Irvine
B.S. in Information and Computer Sciences — Class of 2018

Experience

Stark Laboratory, *Irvine, CA* — Jun 2017 – Mar 2018
Research Assistant

- Built multiple virtual mazes using Unity to study functional changes to the hippocampus following exploration of a virtual 3D environment.
- Participated in code reviews with graduate students to address changing requests and design patterns.
- Serialized data collected with JSON and automated data analysis on large sets of data.
- Coordinated external research study by recruiting 20+ study participants from UCI Sona Systems.

Calit2@UCI, *Irvine, CA* — Mar 2017 – Dec 2017
Software Developer

- Developed a virtual board game using Unity aimed to raise awareness about the complications of Type I Diabetes Mellitus in young children.
- Applied component based design to maximize game development using Unity.
- Employed ScriptableObjects to synchronize game state between separate objects and components.

CS Lab Tutor, *Irvine, CA* — Sep 2016 – Jun 2017
Tutor

- Led lab sections of approximately 35 students in learning intermediate python skills.
- Created exercises and guides for students to practice: object oriented design, modules from libraries, analysis with Big O notation, and class protocols for iterators, operator overloading and inheritance.

Projects

Fabflix — Jan 2018 – Mar 2018
HTML, JavaScript, Java, MySQL

- Implemented the basic necessities of e-commerce (Database, Server, Browser and Mobile App).
- Applied frontend-backend separation by making HTTP requests on created Java servlet APIs.
- Employed JDBC on java servlets to connect to MySQL database.
- Created an Android app using Android Studio that supported searching and browsing movies.
- Scaled Fabflix by incorporating connection pooling and load balancing on a master instance and slave instances.
- Deployed on Amazon AWS and Google Cloud Services.

Virtual Memory Manager — Nov 2017
Java

- Designed and implemented a virtual memory system using segmentation and paging.
- Utilized translation look-aside buffer to make virtual address translation more efficient.

File System — Oct 2017
Java

- Developed a simple file system using an emulated I/O system.
- Utilized bitmapping and file descriptors to organize the file system and maintained an open file table to read and write files to the system.

Web Crawler & Search Engine — Mar 2017 – Jun 2017
Python

- Completed a partially implemented crawler by integrating functions required to extract links from a given link and developed algorithm for determining bad links.
- Built a search engine that supported indexing, search and retrieval, and page ranking.
- Employed nltk to apply tokenization, stemming, and stop words and ranked pages by calculating tf-idf scoring.

Technical Skills

- **Programming Languages:** Python, Java, C#, C++, HTML, JavaScript, SQL
- **Tools:** MySQL, jQuery, JDBC, Tomcat, AWS, Maven, Git, Eclipse, Android Studio, Unity, PsychoPy