education

University of California, San Diego– La Jolla, CA Expected Graduation: March 2018

* Bachelor of Science, Computer Engineering **GPA: 3.49**
* Warren College Provost Honors
* Affiliations: Theta Tau (ΘΤ) – Professional Engineering Fraternity – Epsilon Delta Chapter

projects and experience

Programmer Analyst at UCSD School of Medicine June 2016 – Present

* Assisted in developing business software systems, web applications, and analytic reports for internal company operations.
* Built SQL queries with joins, grouping, and aggregations to manipulate and probe datasets from extensive databases.
* Wrote Bash scripts and integrated SQL queries using MySQL database to perform daily data validations.
* Wrote AutoIt scripts to test the functionality of web and software applications, while automating working status reports.

FlagBot Mechanical Robot Design April 2016 – May 2016

* Constructed a DC-Motor powered wheeled robot, capable of multidirectional movement and location awareness.
* Utilized an Arduino Uno to program the robot’s movement, speed, and a flag waving mechanism for club advertisement.
* Paired the robot with an Android controller app, allowing wireless control of the robot via a HC-06 Bluetooth module.

Couple Tones, Mobile Android Application February 2016 – June 2016

* Developed a location-based Android application providing push notifications when user contacts visited certain locations.
* Employed the Google Maps API, where users could select a specific location on the map and pin it as “favorites”.
* Used JIRA for issue delegation, as well as Agile software development methods such as iterations, user stories and tasks.

Programming Projects and Assignments, C++ August 2015 – Present

* Coded a file compression program, implementing a binary trie and Huffman’s encoding and decoding algorithm.
* Built a dictionary autocomplete/spell check program using HashTables and MultiwayTries to predict words given a prefix.

Application Development Club August 2013 – June 2014

* Created a Java GridWorld interfaced game with KeyListener implementations to facilitate 8-way directional movement.
* Assisted in teaching peers Java OOD concepts and Android mobile application development using Android Studios.

Mandarin Language and Cultural Center August 2012 – June 2014

* Developed leadership and management skills in overseeing weekly lesson plans focusing on culture and linguistics.
* Tasked with designing and leading group activities and discussion sessions; 350 service hours accumulated.

technical profile

* **Portfolio :** <http://brianlyu.github.io>
* **Programming Languages:** C++, Java, SQL, HTML&CSS, Bash, AutoIT, Arduino, MIPS
* **Software Tools:** MS Word, PowerPoint, Excel, Access, PuTTY, vim/gVim
* **Developer Tools:** XCode, Android Studio, Eclipse, AquaData Studios

relevant coursework

**Advanced Data Structures**

* Case study analysis of approaches best suited to solving programming problems through Object Oriented Design in C++
* Use and implementation of data structures with focus in memory management and best case efficiency.

**Introduction to Computer Architecture**

* Underlying design principles and comprehensive study of computer architecture, including processor and control design
* Focused on computer system performance, including Instruction Set Architecture, pipelining, and memory hierarchy.

**Introduction to Analog Design**

* Studied fundamental circuit theory concepts such as Thevenin's and Norton's theorems, and time-varying signals.

**Software Engineering**

* Software development methods focusing on Agile Software Process, Design Patterns, Refactoring, and OOD practice.

**Components and Design Techniques for Digital Systems**

* Studied the theoretical underpinnings of digital design, Finite State Machines and Sequential or Combinational Logic