

# BRIAN LYU

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## EDUCATION

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**University of California, San Diego**— La Jolla, CA

**Expected Graduation: March 2018**

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

**GPA: 3.49**

## PROJECTS AND EXPERIENCE

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**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 : [HTTP://BRIANLYU.GITHUB.IO](http://brianlyu.github.io)**

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- **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

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**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