# Brian Lucero

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## Education

**California State University, Fullerton | Fullerton, CA**                                                     *May 2022*
*Bachelor of Science, Computer Science*

### Relevant Coursework

Object Oriented Programming, C++ Programming, Data Structures, Statistics applied to Natural Sciences, Swift Programming, x86 Assembly Programming, File Structures and Databases, Algorithm Engineering, Engineering Economics and Professionalism, Professional Ethics in Computing, Compilers & Languages, Operating System Concepts, Software Engineering, Introduction to Data Science & Big Data, Artificial Intelligence

## Experience

**Bytes and Bots | Irvine, CA**                                                     *Jan. 2020 – July 2020*
*Teacher/Mentor - Part time*
- Designed and taught 346 lessons on topics such as Arduino, Raspberry Pi, Python, C++, Basic Programming, Robotics, and Electronics at the Bytes and Bots Laboratory in Irvine, and Ross Elementary, Ponderosa Elementary, and Stoddard Elementary schools

**Private Tutoring Services | Los Angeles/Orange County, CA**                                                     *Jan. 2017 – Present*
*Tutor - Part time*
- Re-engineered lesson content to be more effective in a virtual environment, for Mathematics, Computer Science, Saxophone Performance, and Music Theory; a solution to not having in person lessons, and making content more absorbable

## Project Experience

**Custom Lexical/Syntax Analyzer --- Program | Compilers**                                                     *Feb. 2021 – Mar. 2021*
*Software Development Team*
- Constructed a 5 component Finite State Machine in order to handle the various states of the lexer
- Reinforced several compiler concepts such as Tokens & Lexemes, Buffering, Finite-State Automata, and Regular Expressions

**Multi-Threading Application | Operating Systems Concepts**                                                     *Feb. 2021 – Mar. 2021*
*Software Development Team*
- Conducted evaluation analysis on 4 of the most common process & disk scheduling algorithms; First Come-First Serve, Shortest Job First, Round Robin, and Priority
- Discovered the challenges of debugging race conditions and deadlocks, and learned how to prevent them

**Triangle Area --- Program | x86 Assembly Programming**                                                     *Oct. 2020 – Nov. 2020*
*Software Development*
- Implemented the feature which accepts input three quadword float numbers representing the sides of a triangle. After confirming that the inputs are in fact valid floats then compute the area of the triangle using Heron's formula
- Equipped the program with error handling, avoids crashing when a user inputs a length value outside acceptable parameters

**Sorting Race --- Web Application | Algorithm Engineering**                                                     *Sep. 2019 – Oct. 2019*
*Software Development Team*
- Illustrated the various algorithm steps and the generational (i.e., one row per pass) progress of several different sorting algorithms, side by side in their own columns; Insertion Sort, Merge Sort, Pore's Gold Sort, Quick Sort
- Coded all visuals, logic, and algorithm implementations in P5 JavaScript, HTML, and CSS
- Documented several sections of concept integration, development process, setup & installation, external requirements, features, and contents

**Grocery Database --- Program | Data Structures**                                                     *Jan. 2020 – May 2020*
*Software Development*
- Implemented 10 data structures including the Array, Vector, SL List, DL List, Stack, Queue, Map, Binary Search Tree, AVL Tree Unordered Container (Heap), using STL and non-STL design
- Performed 2 comparison analysis tests between the containers, highlighting their respective Big-O Complexity on various container operations and search algorithms

**Pi Kappa Alpha Event Planning Committee | Fullerton, CA**                                                     *Aug. 2018 – Dec. 2018*
*Special Interest Group Leader*
- Hosted over 20 workshops on personal, social, and career development, featuring guest speakers such as alumni, advisors, and current members of the organization

## Affiliations & Organizations

- Society of Hispanic Professional Engineers (SHPE)                                                     *April 2021 - Present*
- Association for Computing Machinery (ACM)                                                     *Aug. 2018 – Present*
- Institute of Electrical and Electronics Engineers (IEEE)                                                     *Aug. 2017 – Present*
- Pi Kappa Alpha Fraternity                                                     *Aug. 2017 - Present*

## Skills & Interests

- Proficient in C++ Programming, iOS Application Development, Object-Oriented Programming, Software Engineering concepts & models
- Languages: English (1st Lang.), C++, Python, Swift, R, SQL, JavaScript, HTML, CSS, x86 Assembly (Intel Syntax), C, Shell script
- Platforms/Applications: Windows, macOS, iOS, Linux, Ubuntu, Debian, Raspberry Pi OS, Arduino, Git, GitHub, Vscode, XCode, XCode Developer Tools, Simulator, Atom, MySQL, PyCharm, RStudio, Oracle VM VirtualBox Manager, Unreal Engine, MATLAB
- Personal Interests: traveling/outdoors, sports, computer gaming, skateboarding, music education/production, saxophone performance