

William Alex Greenwald

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Education

University of California - Santa Barbara

Sept 2021-Jun 2025

Bachelor of Science, Computer Science (Candidate)

- Courses: Problem Solving With Computers I & II (C++), Object Oriented Design (C++)

Skills

Course taught Skills:

- General: **C++**, Makefile, Unix command line (BASH), Git+Github, Java, LaTeX
- Specific: Hashing, BSTs, Linked Lists, Processes/Threads, **Pointers**

Self taught skills: Python, HTML, CSS

Miscellaneous skills: Bilingual (english, spanish), Guitar, and Piano

Projects and Work Experience

Binary Search Tree with Value Conversion

Individual Class Project

- Implemented a binary search tree class from scratch in C++, storing integer values.
- Used .txt files as inputs. Learned how to ifstream to read and parse through the .txt file contents.
- Mapped unique strings from .txt files to weighted int values, and translated those ints back to the same strings at the end of program for more efficiency.
- Inserted, compared, and deleted all nodes in 2 unique BSTs. Program represents a game simulation, where 2 .txt files of strings representing cards are compared using my BST.

Sorting Algorithm Visualizer

Guided Project

- Python program using pygame modules in order to visualize algorithms.
- Worked with dictionaries, tuples, and arrays. Implemented python generators in combination with pygame to update text and graphics when needed.
- Improved understanding of the main 3 quadratic time array sorting algorithms.

Personal Website

Individual Project

- Written with just CSS and HTML, both self taught skills.
- Implemented hover animations, interactive buttons, and image positioning using multiple files.
- Gained an understanding of domains and web hosting, as well as built on my git and github skills to link this and my other projects on my github to this site. Website link: william-greenwald.com.

Seaworld San Diego Ride Operator

Jun 2022 - Sept 2022

- Seasonal summer ride operator at "Shipwreck Rapids" ride at Seaworld San Diego.
- Loaded, unloaded, grouped, and monitored guests at this attraction.
- Used teamwork, communication, and efficiency to maintain guest and employee safety at all times.