William Alex Greenwald

walexgreen@gmail.com | (619) 371-2170 | william-greenwald.com

Education

University of California - Santa Barbara Sept 2021 - June 2025
Bachelor of Science, Computer Science

- **CS Courses:** Problem Solving, Object Oriented Design (C++); Comp. Organization, Comp. Architecture (MIPS Asm/Logic Design/RTL); Data Structures & Algorithms
- **Math Courses:** Multivar. Calc, Linear Algebra & Diff. Equations, Discrete Mathematics, Prob. & Stats

Skills

Languages: C++, MIPS Assembly, HTML, CSS, C, Python, Java
Technologies: Github, UNIX, Visual Studio, LaTeX, pyRTL
Areas: Web-development, Computer Architecture (Processes/Threads, Memory Mgmt.), Data Structures
Other: Bilingual (Spanish+English), Guitar, Piano

Projects and Work Experience

Array Encrypter/Decrypter (MIPS Asm.) Nov 2022

- Assembly program, takes an array of integers, calls an encrypt and decrypt 'function', which takes the values and applies/undoes arithmetic (power, subtraction) to them and returns/prints values.
- Solidified understanding of usage for basic I, J, and R type instructions in MIPS Assembly
- Learned about how to use jumps, the stack, and branches to write, return, and call functions.

Personal Website (CSS, HTML) | william-greenwald.com Aug 2022

- Developed first website using CSS & HTML
- 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.

Sorting Algorithm Visualizer (Python) Aug 2022

- 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.

Binary Search Tree Card Game (C++) Feb 2022

- Created a card game by implementing a binary search tree class from scratch in C++
- Used .txt files as inputs. Learned how to use 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.
- Average runtime was ~2.6 times faster vs. basic linear search comparisons in personal tests.
- Inserted, compared, and deleted all values as nodes in 2 unique BSTs. Program represents a game simulation, where 2 .txt files of strings representing cards are compared using my BST.

Seaworld San Diego Ride Operator June 2022 - Sept 2022

- Seasonal summer ride operator at "Shipwreck Rapids" ride at Seaworld San Diego.
- Loaded, unloaded, grouped, and monitored ~500 guests/hour at this attraction.
- Used teamwork, communication, and efficiency to maintain guest and employee safety at all times.