Ali Sbeih

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Education

Amherst College, Amherst, MA — Expected: May 2025

- Bachelor of Arts in **Computer Science** | Cumulative GPA: **3.963**

Work Experience

Lab and Evening Teaching Assistant, **Amherst College,** Amherst, MA — September 2022 - Present

- Assist 59 students from two sections with programming and problem solving during lab sessions for Intro Computer Science
- Read lab assignments and prepare to explain relevant ideas and answer related questions in the lab
- Conduct two-hour review sessions weekly and answer student questions about the material and programming with **Java**
- Track the performance of students and communicate with the instructor about common student struggles

Math Fellow, **Amherst College,** Amherst, MA — September 2022 - Present

- Dedicate time weekly to prepare for helping by reviewing study material and assignments provided to students
- Hold two 1.5-hour help sessions weekly for students taking Intermediate Calculus and group them based on needs
- Support students by asking questions about their thinking process and assisting with problem-solving techniques
- Provide feedback to the instructor about students' understanding, addressing student needs, and planning study sessions

Gregory S. Call Academic Intern, **Amherst College,** Amherst, MA — June 2022 - July 2022

- Assisted two professors in preparing a new web programming course, "Algorithms and Visualization"
- Tested sample web projects that require **JavaScript**, **HTML**, and **CSS** that would be presented to the students such as graph search algorithm visualization, stimulating cellular automaton, and finding the convex hull
- Provided suggestions and feedback for projects and concepts and assisted with developing learning resources
- Visualized geometrical and graphical algorithms including breadth-first and depth-first search
- Created guides on using **JavaScript** and **HTML**, using **GitHub**, using **jQuery** library, and installing **Node.js**
- Developed test questions to prepare for building RGB color picker, cellular automaton, convex hull, and algorithms

IT Specialist for the Philosophy Department, **Amherst College**, Amherst, MA — May 2022

- Completed a video google slides presentation to celebrate the retirement of an instructor
- Designed videos, images, and documents received from alumni and documented their names and graduation years

Coding Contest Judge, **Amherst College**, Amherst, MA — April 2022

- Solved, helped organize order of, and edited problems for coding contest, and gave examples of right outcomes for solutions
- Worked as a judge for a virtual coding contest for over 40 students from 11 different high schools
- Graded **Java** submissions from 6 teams, recorded the completion times, and provided feedback to the competitors

Phonathon Caller, **Amherst College,** Amherst, MA — October 2021 - December 2021

- Updated personal records for contacted alumni, including demographic information and donation history
- Made 461 calls to alumni to invite their feedback about the College, solicit donations for the Amherst Fund, and respond to their questions and concerns, and ended up raising $1,350.00 in the Amherst Fund fall Phonathon campaign

Supplemental Industry Education

Codepath Organization

- *Intermediate Android Development* (September 2022 - Present): Building applications using **Kotlin**
- *Intro to Mobile Product Development* (February 2022 - April 2022): developed a Flash Card app from scratch for Android, experienced saving app data to a database and working with it, and built transition animation when a button is clicked

Projects

- **Personal Website:** Uses a combination of **HTML** and **CSS** and contains an about page, which provides a short summary of my work experiences, a list of the courses I took at Amherst College, some of the projects I have worked on, and my resume.
- **Flash Cards Application:** An **Android** basic flashcards app that allows the user to add cards and save them by saving the card's data to a database. The app supports a transition animation when it goes from the main view to the create cards view, a circular reveal animation for the answer, and a sliding animation for when the user advances to the next card.
- **Cellular-Automaton : Web program** that generates a collection of cells according to a set of states and rules. The user can set the desired universe size, color for cells, rule number, randomness and turn the first generation of cells on or off.
- **Convex-Hull: Web program** that finds smallest convex set including shape and automatically updates as user creates circles.
- **RGB-Color-Picker: Web program** that allows users to change the color of a block with RGB values using sliders.
- **Dots-and-Lines: Web program** for creating a graph and performing breadth-first-search and depth-first-search algorithms.
- **Segment-Intersections: Web program** for creating two sets of lines and detecting and highlighting segment intersections.
- **Binary-Search-Tree: Java** implementation of a simple sorted set using a binary search tree that is used to read all of the words in a given text file and report the number of distinct words in the file.
- **Huffman-Codes: Java** implementation of Huffman coding procedure in order to generate an optimal prefix code for a given text file. The program reads a specified text file and generates a binary codeword for each character appearing in the text. The resulting encoding of the character values will result in the smallest possible character-by-character encoding of the text file.
- **Anagrams**: **Java** program that prints sets of anagrams among words in file, largest set of anagrams, and duration of process.
- **Mazes**: **Java** program that contains set of three mazes in a GUI. Each maze has a different set of rules and name. First maze implements a maze solver that solves the maze independently and then displays the solution without a preset solution.

Skills

Java (Proficient) HTML (Familiar), CSS (Familiar), JavaScript (Familiar), Python (Exposed), Kotlin (Exposed)