# Daniel Bohen

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## Education

**University of Southern California (GPA: 3.71)**                                    **Aug. 2021-May 2025**
*Bachelor of Science in Computer Science, Minor in Mathematical Finance*                    *Los Angeles, California*

**Redlands High School (GPA: 4.70)**                                          **Aug. 2016-June 2021**
*High School Diploma*                                                    *Redlands, California*

## Projects

**Puzzle Solver With A\* Algorithm** | *C++, Docker*                                  **Feb. 2022**
- Implemented multiple heuristics to ensure the optimal number of moves is discovered, including the BFS algorithm
- Utilized the A\* algorithm and a templated binary heap to calculate the shortest possible sequence of moves and present them to the user, allowing the user to execute them through the console user interface

**WebSearch File Search Engine** | *C++, Docker*                                     **Jan. 2022**
- Implemented a search engine that parses each .txt and .md file for text and links, placing these into a searchable index using sets and maps. Allowed for multiple search options such as single item, inclusive or exclusive
- Utilized a database to store the information and allow for efficient queries through a console user interface

## Experience

**Project Manager/Developer**                                              **Sep. 2021-Present**
*QuantSC*                                                           *Los Angeles, California*
- Spring 2022: Leading a team of six undergraduate and graduate students in developing a momentum investing strategy on QuantConnect, augmented with a machine learning change point detection algorithm
- Fall 2021: Developed a pairs trading algorithm, focusing on fundamental analysis of co-integrated/correlated security pairs. Achieved a 22% return and presented to a panel of quantitative engineers including former SEC chief economist

**BOTS/CS Assistant**                                                 **Sep. 2021-Present**
*USC Viterbi School of Engineering*                                          *Los Angeles, California*
- Communicate complex coding concepts in engaging and simplified presentations for 2 dozen elementary school teachers in a year long series of professional development sessions
- Develop fundamental coding practice activities for students and support teachers during classroom implementations
- Develop and execute programs for the Root and Sphero robots to demonstrate their capabilities to students

**STEM/SAT/History Tutor**                                              **July 2015-Aug. 2021**
*Excellibur Tutoring*                                                     *Redlands, California*
- Founding member of a volunteer tutoring organization with a primary focus on providing free math, science, and programming tutoring for individuals in low income communities
- Developed and executed individualized lesson plans for over 15 students to meet their personal education goals
- Separately offered private tutoring to high schoolers in AP Micro/Macro Econ, AP Calculus BC, AP US History, and AP European History, among other subjects

## Technical Skills

**Languages**: C++ (most proficient), JavaScript [Node, React] (proficient), Python [pandas, numPy, Django] (proficient), HTML/CSS (working knowledge), Java (experience)
**Developer Tools**: Microsoft Visual Studio 2019, VS Code, JupyterLab, Git, Docker, Vim, Postman, Insomnia

## Relevant Coursework

- CSCI 104: Data Structures and Object Oriented Design
- CSCI 170: Discrete Methods in Computer Science
- CSCI 103: Introduction to Programming
- MATH 229: Calculus III for Engineers and Scientists
- LinkedIn Learning: HTML Essential Training
- LinkedIn Learning: React.js Essential Training

## Leadership & Involvement

**Viterbi School of Engineering Deans List (Jan. 2021)**
**Redlands High School Varsity Tennis Captain (Aug. 2017-June 2021)**
**Redlands High School Speech & Debate (Aug. 2018-June 2021)**