

MAX SHEN

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EDUCATION

University of California, San Diego

August 2015 - June 2019

B.S in Mathematics & Computer Science

Relevant Coursework: Advanced Data Structures, Design & Analysis of Algorithms, Mathematics for Algorithms and Systems, Computer Organization & Systems Programming, Components & Design Techniques for Digital Systems, Statistical Methods, Combinatorics, Modern Algebra I, II

SKILLS

Languages

- Java, C, C++, Python, HTML, CSS, SPARC, ARM assembly

Development Tools

- vim, Visual Studio, Eclipse, gdb, git, Valgrind

PROJECTS

Twitter Sentiment Analysis Bot, Python

- Regularly scans Twitter for mentions at the bot to check Twitter's opinion polarity for a certain topic
- Generates a polarity score using the VADER sentiment library and replies to tweets with the result
- Makes calls to the Twitter REST API through the tweepy library to search for queries and update statuses

Six Degrees of Kevin Bacon, C++

- Designed to return the shortest possible list of films connecting any given actor and Kevin Bacon
- Utilization of several C++ data structures to efficiently store a list of IMDB actors and films
- Implementation of Breadth-First Search and Dijkstra's algorithm to compute distances between films and actors in order to find the shortest link

Caesar Shifter, Python

- Implementation of a monoalphabetic substitution and chi-square test to encode and decode text files or user inputted strings
- Unit testing for individual functions using pytest to ensure that the code runs smoothly

Dictionary Autocomplete, C++

- Dictionary capable of storing words and phrases from an input text file with autocomplete functionality
- Application of hash table, binary search tree, and multiway-trie data structures to efficiently store words
- Designed an algorithm to autocomplete user input with words from the dictionary

Huffman Compress/Decompress, C++

- Implementation of the Huffman coding algorithm to compress and decompress large text files using tree and priority queue data structures

WORK EXPERIENCE

Lifeguard/Water Safety Instructor,

Poway Unified School District, Westview High School

April 2014-July 2016

- CPR and First Aid certified
- Developed lesson plans and teaching methods for groups of elementary age students
- Provided support and direct feedback in swimming exercises
- Performed certain administrative tasks and regular maintenance duties