Harris McCullers

harrismcc.github.io | See "contact" on my site to contact

EDUCATION

PITZER COLLEGE

Computer Science

Graduating May 2021 | Claremont, CA

As a student of Pitzer College who is majoring in CS at Harvey Mudd College, I have been able to gain a strong technical and interdisciplinary approach to problem solving.

SKILLS

Very skilled in:

Python · Java · C++ · C · Git

Also comfortable with:

Swift · HTML/CSS · mySQL · Ruby

Fundamentals:

Complexity analysis, Finite-State Machines, Recursive techniques, Basic Processor Architecture, Data Structures, Functional Programming, Object-Oriented Programming, Program design.

COURSEWORK

Computer Systems, Harvey Mudd

CS105 - Spring 2019

Data representations, processor architecture, program optimizations, virtual memory, system-level I/O, and concurrent programming

Principles of Computer Science, Harvey Mudd

CS060 - Spring 2017

Software construction, hardware organization, and limitations of computers.

Data Structures and Program Development, Harvey Mudd

CS070 - FALL 2018

Abstract data types, efficient data structures for these data types, runtime analysis of data structures

Discrete Mathematics, Pitzer

MATH055 - FALL 2018

Combinatorics, Graph theory, and Number theory with a focus on creative problem solving.

EXPERIENCE

HARVEY MUDD AND PITZER COLLEGE | Grutor (Grader and Tutor)

September 2018 - Present | Claremont, CA

- Helped Pitzer professors to form CS department at Pitzer and create student tutoring program.
- Assisted in hiring of other grutors and decision making surrounding course organization
- Worked with over 100 undergraduate students in sessions of various sizes
- In charge of grading for all assignments, and interfacing between students and the professor.

CAMP BECKET, YMCA | Head Counselor

June 2016 - August 2018 (Seasonal) | Becket, MA

- Counseled in a heavily team-oriented environment to teach kids interpersonal and outdoors skills.
- Coordinated communication between camp and families with phone calls, emails, and in person meetings.
- Mentored as a "senior staff" member to train younger staff and CIT's
- Designed and ran activities supervising over 80 kids and leading 20 staff members.

CYBERSECURITY PRESENTATION | Senior Thesis Project

Spring 2017 | Cate School

- Presented for over 50 students and faculty
- Developed and demonstrated a vulnerability exploiting inherent trust of human input devices by most personal computers.
- Educated non-technical audience on the the transfer of data over the internet and the specifics of a reverse TCP shell attack.
- Organized complex information into relevant summaries to preserve time efficiency.

PROJECTS

SEAM CARVING | CS060

Spring 2017 | Harvey Mudd

- Created Java program to manipulate and analyze .bmp files using 2D arrays.
- Implemented carving algorithm that allows images to be dynamically resized without stretching, squashing, or cropping.

BST SPELL CHECKER | CS070

Fall 2018 | Harvey Mudd

- Designed implementation of a Binary Search Tree in C++ with randomized insertion and tree rotation for maximum runtime efficiency.
- Used object oriented programming to abstract spell checking functionality for enhanced usability.

MARKOV MODEL | CS005

Fall 2017 | Harvey Mudd

- Implemented natural language processing algorithm using a Markov Model to create new pieces original natural writing.
- Gained experience with machine learning techniques and system I/O