Wyatt McCarthy

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EDUCATION

Amherst College, *Amherst, MA | BA in Economics and Computer Science* Expected May 2024

- **Cumulative GPA:** 3.7/4.0 **Major GPA:** 3.7/4.0 **SAT:** 1550/1600
- NESCAC All-Academic Student-Athlete on Men's Varsity Soccer, National Championship Runner-Up 2021, NESCAC Tournament Champion 2022

The Beacon School, *New York, New York | High School Diploma* June 2020

- **Activities and Societies:** Varsity Soccer, High Honor Roll

CAREER APPLICABLE COURSEWORK

Data Structures Spring 2022

- Curriculum Focus: Lists, Stacks, Queues, Binary Search Trees, Hash Tables, Graphs, Dictionaries, Abstraction

Algorithms Fall 2022

- Curriculum Focus: Algorithmic Paradigms (Divide and Conquer, Greedy, Dynamic Programming) and Implementation, NP Completeness

Artificial Intelligence Fall 2022

- Curriculum Focus: Search, Adversarial Search, Reasoning Under Uncertainty, Reinforcement Learning
- Projects Completed Implemented algorithms for path-finding, adversarial search, reinforcement learning, and particle filtering to create artificial intelligence agents for Pacman in various observable and unobservable environments. Algorithms: A* search, Minimax, Q-Learning, Joint Particle Filtering

Computer Systems Spring 2023

- Curriculum Focus: C, Assembly, Linux, Git, ISAs, Virtual Memory, Caching, Memory Management, Threads and Synchronization, Virtual Machines, File Systems, Embedded Systems

Algorithms and Visualization Spring 2023

- Curriculum Focus: Fundamentals of HTML, CSS, and JS, jQuery, Recursion and Dynamic Programming, Computational Geometry and Visualization, Graph Visualization

WORK EXPERIENCE

A2 Aviation, *New York, New York | Purchasing Specialist* June 2021 - Present

- A2 Aviation is a specialist in the supply, exchange, and repair of commercial aircraft spare parts
- Responsible for market research, negotiating purchase agreements, and completing purchase orders
- Identified profitable purchases that met the specifications of the company and our clients; facilitated the purchase and receipt of over $150k of product

Amherst College, *Amherst, Massachusetts | Computer Science Teaching Assistant/Tutor* October 2022 - Present

- Assisted Professor Mihaela Malita in overseeing a lab period; assisted students with programming fundamentals in Java
- Tutored students across CS 111 - CS 211 (Intro to Computer Science - Data Structures) utilizing and strengthening my own knowledge of programming fundamentals

LEADERSHIP EXPERIENCE

Soccer Hamptons, *New York, New York | Founder* May 2020 - Present

- Launched soccerhamptons.com, a soccer instruction service curated to the individual needs of clients. Developed business from conception to execution at the beginning of the COVID pandemic, recognizing a need in the community for this type of service.
- Analyzed the fixed and variable costs of our service to set profitable but market-competitive prices.
- Networked to build a core client base that rapidly expanded. Developed and maintained lasting relationships with clientele.
- Generated revenue of $10k within the initial four months.

PERSONAL PROJECTS

Pathfinding and Sorting Algorithm Visualizer

- Applied fundamental concepts learned in Artificial Intelligence and Algorithms courses to create a program for visualizing algorithms in Python.
- Mastered the logic of these algorithms such that the program is able to not only demonstrate an algorithm's final product but how it produces such a result on an iterative and/or recursive level.

Checkers AI

- Created checkers game in Python using pygame library. Designed the game such that an AI agent to play against the user could be smoothly implemented.
- Implemented relevant logic to create an evaluation function/heuristic for the board state. Used evaluation function to implement the minimax and expectiminimax algorithms. Used presorting, alpha-beta pruning, and transposition tables to optimize minimax.
- Analyzed runtimes of the minimax algorithm with/without various optimization techniques over thousands of trials to determine the empirical correctness and efficiency of the methods. Used analysis results to further debug and optimize specific cases of the algorithm based on trends of worst-case and best-case runtimes.

Personal Website

- Developed a website to display and track personal information related to academic and personal endeavors.
- Utilized fundamentals of HTML, CSS, and JS.

NESCAC Soccer Stats Database

- Java program that reads an excel file with data from every varsity soccer player in the New England Small College Athletic Conference. The program computes stats for each individual and team in the conference using common metrics and provides a terminal-based interface to access said data. This was one of my earliest projects when I was first learning Java.

SKILLS & INTERESTS

Skills: Tutoring, Time Management, Problem Solving, Microsoft Office, Object-Oriented Programming, Data Structures, Algorithms, Java, Python, HTML, CSS,

Interests: I truly enjoy the way programming challenges you to problem solve as well as its unlimited creative potential. It has become both a hobby and a passion since I first learned to code. I have always been fascinated by algorithms and have found programming to be my greatest means of exploring and applying algorithmic thinking. To date, I have extensive experience in both Java and Python though I have some experience with HTML, CSS, and JS. I am particularly interested in the development of artificial intelligence.