Wyatt McCarthy

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EDUCATION

Amherst College, *Amherst, MA* | *BA in Computer Science* Expected December 2024

- **GPA:** 3.8/4.0 **SAT:** 1550/1600
- NESCAC All-Academic Student-Athlete on Men's Varsity Soccer, NCAA National Championship Runner-Up 2021, NESCAC Tournament Champion 2022, NESCAC Tournament Champion 2023, CSC Academic All-District Team 2023, NCAA National Championship Runner-Up 2023
- Extensive coursework in Math, Economics, and Computer Science (Industrial Organization, Microeconomics, Macroeconomics, Multivariable Calculus, Linear Algebra, Data Structures, Algorithms, Artificial Intelligence, Computer Systems, Networks, Databases)

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

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

WORK EXPERIENCE

Roblox, *San Mateo, California* | *Software Engineer Intern* Summer 2024

- Implemented a user-facing setting for text scaling that scales text at the rendering level according to the user's preference. All text scaling functionality was implemented in C++.
- Refactored 25+ components throughout Roblox's UI to aesthetically handle various text sizes. All refactoring was done with Lua and React.

Massachusetts Institute of Technology CSAIL, *Cambridge, Massachusetts* | *Research Assistant* February 2024 - May 2024

- Wrote Python scripts to automate:
  - Mass data retrieval and preprocessing, leveraging web-scraping and various APIs.
  - Exploratory data analysis and statistical analysis mainly using BioPython, SciPy, and Scikit-Learn
- Developed and trained long-context transformer and perceiver based models with PyTorch and Lightning.
- Read about my work here.

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 Intro to Computer Science, Data Structures, Algorithms, and Artificial Intelligence, strengthening my mastery of programming fundamentals.

A2 Aviation, *New York, New York* | *Operational Manager and Tech Lead* June 2021 - January 2024

- Responsible for market research, negotiating sales and purchasing transactions, and handling relevant paperwork. Identified profitable purchases that met the company's and our clients' specifications; facilitated the purchasing and sales operations behind over $1 million in product sales.
- Wrote Python scripts to streamline our sales management processes. Scripts automated previously manual processes like the creation and maintenance of a company directory, sales and profit data log, and market pricing data log.

PROJECTS

Amherst Athletics Database Visualization Interface 🔗 October - December 2023

- Developed ER model for Amherst athletes' Catapult Sports GPS data and created PostgreSQL database around said model.
- Built full-stack app with PERN (postgres, react, express, node) stack that interfaces with PostgreSQL database, providing users various means of visualizing existing data and uploading new data.
- Amherst Strength and Conditioning coaches hope to utilize the app for performance insights in upcoming collegiate seasons.

Pathfinding Algorithm Visualizer 🔗 November 2022/April 2023

- Applied fundamental concepts learned in Artificial Intelligence and Algorithms courses to create a program for visualizing pathfinding algorithms in Python. Have since remastered the project and reimplemented it using HTML, CSS, and JavaScript.
- Mastered the logic of these algorithms such that the program can demonstrate an algorithm's final product and how it produces such a result on an iterative and/or recursive level.

Checkers AI 🔗 November - December 2022

- Designed a checkers game in Python with pygame 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, increasing algorithm computation speed by over 10x.
- Wrote scripts to simulate games such that I could test the empirical efficiency of various minimax optimizations. Used test results to further refine, debug, and optimize the algorithm based on trends of worst-case and best-case runtimes.

SKILLS & INTERESTS

Proficient Languages Java, Python, JavaScript, HTML, CSS

Familiar Languages SQL, C, C++, Lua

Tools, Libraries, Frameworks NodeJS, ExpressJS, Tailwind, React, Git, PyTorch, Sci-kit Learn, SciPy

Soft Skills Work Ethic, Time Management, Tutoring, Leadership, Teamwork, Interpersonal Communication, Problem Solving, Project Management

Interests: I truly enjoy the way programming challenges you to problem solve and its unlimited creative potential. I have always been fascinated by algorithms and have found programming to be my greatest means of exploring and applying algorithmic thinking to creative expression/building projects. I am particularly interested in the development and application of algorithms. Outside of school, I am interested in soccer, calisthenics, rock climbing, and general health/wellness.