Matt Schwarz

704-775-2546 | mattschwarz5@gmail.com | linkedin.com/in/matt-schwarz | github.com/mjschwarz

Education

Vanderbilt University — Nashville, TN
Bachelors in Computer Science and Medicine, Health, & Society — *Expected May 2024*
- GPA: 3.87 / 4.00
- SAT: 1570 (800 Math, 770 Verbal)

Charlotte Latin School — Charlotte, NC
Cum Laude Society — *May 2020*
- GPA: 4.00 / 4.00

Experience

Camp Counselor — June - August 2021
Morrison Family YMCA — *Charlotte, NC*
- Responsible for coordinating and safely engaging ∼20 campers each day

Research Assistant — August 2020 - May 2021
Active Galactic Nuclei — *Vanderbilt University*
- Collaborated with four team members in studying super-massive black hole phenomena
- Provided weekly research reports and engaged in problem solving with team members
- Independently developed programs to analyze spectral data sets from quasar observations
- Generated spectral decomposition plots using PyQSOFit

Leadership

Vice President of Finance — October 2021 – Present
Beta Theta Pi — *Vanderbilt University*
- Directed and managed fraternity funds in excess of $10,000

Teaching Assistant — September 2021 – Present
Code Ignite — *Vanderbilt University*
- Taught ∼10 middle school students computer science and problem-solving principles on a weekly basis
- Utilized web-based tools such as Scratch to facilitate engagement and learning
- Developed a Java curriculum for middle and high school students

Projects

Cryptocurrency App | *Python, Flask, PubNub, JavaScript, React*
- Created a cryptocurrency which uses a proof of work consensus mechanism to maintain security
- Managed a network of users using the publish-subscribe pattern to reduce data transmission overhead
- Deployed a wallet app for viewing the blockchain and account balances, initiating transactions, and mining coin

Snake AI GUI | *Python, Pytorch, Pygame*
- Developed a Snake game that can be played by either a user or an AI
- Implemented a Q-learning deep neural network using Pytorch, training the AI to reach scores of 60+ points
- Applied caching to save the training model state, greatly reducing training time

Pathfinding Visualization GUI | *Python, Pygame*
- Designed an interactive GUI application in which users place obstacles, select endpoints, and trace search paths
- Implemented searching algorithms such as A*, BFS, and DFS

Skills and Interests

Skills: Eagle Scout, SCUBA, National Spanish Honor Society
Languages: C++, Java, Python, JavaScript, HTML/CSS
Tools and Frameworks: Git, Flask, Postman, React, Tensorflow, Pytorch
Relevant Coursework: Object Oriented Programming, Data Structures and Algorithms, Design Patterns, Discrete Math, Multivariable Calculus, Economic Statistics