This project is about reading large amounts of data to feed into a self-learning AI. This AI will be used to analyze and predict trends in the data. Big Data is an increasingly important topic in computer science, as almost anything and everything is being assigned a value and assessed. Our project aims to further push the capabilities of Big Data analysis in a way that can be useful to more than just data specialists. In order to do so, a comprehensive front-end UI will need to be developed that can connect to existing API’s used in our project. It is rare that one would ever have to develop an entire product from scratch, so finding existing frameworks to develop around in this project is not only slightly easier but also practical.

My college classes have certainly prepared me for the scope of this project. ENGL 4092 (Technical/Scientific writing) helped me with my writing abilities in professionally communicating the details of my work in a succinct manner. CS 4071 (Design and Analysis of Algorithms) showed me the importance of writing efficient algorithms and how much small inefficiencies in programs can quickly rack up run time. ENED 1090 (Engineering Models I) was the most helpful of all my classes thus far, as it was the first class to teach me how to program at all. I enrolled into the University of Cincinnati’s computer science program with no prior knowledge on programming. As a result, I owe all that I know now to the knowledge gained from course work, and more importantly, the experience I gained from my five co-op rotations.

My work at Applied Research Association and Siemens helped prepare me for this senior deign project far more than my course work. At ARA, I learned how to develop on existing systems and see the intricacies of a codebase over 20 years old. It taught me there is often more than one way to write a program, and that there is almost always a better way to do something. At Siemens, I learned how to concurrently develop several different features in an efficient manner and do so in a way that each feature builds off the other. This makes maintaining the codebase easier and future development simpler as parts of code can be repurposed with little to no reworking. These skills will help me greatly in developing this project, as the overall scope of the project will require expertise over a large spectrum of areas.

I am excited to work on this project as it will take skills I already possess and challenge them to grow further, as well as exposing me to new areas of programming that I have yet to learn. This project will require extensive work in both front-end and back-end development. The vast majority of my coding experience resides in the latter, with the former being an area that still intimidates me. Therefore, I loo forward to finally conquering my shortcomings in developing UI, as it necessary to know for someone who dreams about developing large-scale virtual environments and/or video games. Even though I imagine the other members of my team will take on the bulk of the front-end development, I will make sure to reserve some of the tasks for myself so that I can make up for my deficiencies in these areas. After all, senior design is still a class, and it makes for the perfect opportunity to continue to make myself a well-rounded and strong-versed programmer.

There will be three main challenges in solving our problem: finding a suitable web-scarper and API to use for data collection, developing an AI backend to predict data trends, and building a simple but sophisticated front-end UI that displays information clearly. I do not necessarily expect to be successful with this project, as there would already be plenty of working solutions for this problem if it was easy to solve. What I do expect from this project is a substantial increase in both the skills used to develop this product and knowledge on how the stock market trends. My team will evaluate our contributions through the hours spent on work and the overall quality of the code put forth by everyone. The quality will be assessed through code reviews and whether or not the code does what is intended. Our “definition of done” will be an application that can display current and past stock market records and give accurate predictions as to how the market will look in the near future.