Capstone Assessment

The project’s goal is quite straight forward, to create a way for investors to make more educated decisions when investing in the stock market. This will be achieved through examining numerous sources of data and creating a projection of the market. The projection should make trends apparent with reasonable certainty. When an investor can make a better decision on the future of the stock market, they will be able to make safer investments. This program will also allow fine tuning by the end user to tweak variables as they see fit. Also, we will open up the program by allowing external plugins.

College curriculum has given me the tools and knowledge needed to be able to complete this capstone. Throughout my time at the university I have taught myself numerous topics. The ability to learn something on my own for classes will translate well to this project. There are a few classes which taught material closely relating to this project that I can draw from. CS5173, Deep Learning, was an excellent overview of neural networks and other topic crucial to this project. CS5152, Intelligent Data Analysis, is a great interview to clustering algorithms and other ways to analyze data. I currently am taking a machine learning course, CS6037, which will also help with capstone.

Co-op experience will be the most beneficial when working on this capstone. While on co-op I led several projects. All these projects lasted nearly an entire rotation. Each project required a critical design phase in which I would document the current layout of the code and how what we add would improve the product. These projects required design documents, user stories and UML. The capstone will also need these to succeed and my experience at Siemens PLM will help tremendously.

I am very excited to work on this project. I want to make sure that I am well rounded in all areas of Computer Science when I graduate. My Thesis work is very centered on algorithms and math, but I still want to have experience in data science. I believe that this capstone will give me the experience needed in machine learning to apply it in my career. I am also excited to use new technologies discussed amongst the group. I envision this being a key part of discussion with future companies.

Our preliminary approach to the goal is to train a model on the past stock data. We will develop a GUI for the end user to interact with. We expect to develop a model that can assist in predicting stock data. There will be some sort of data visualization to the end user. We will be able to test out the program in two ways. First, through a blind user experience, if someone who has no prior knowledge of the program is able to navigate and understand the GUI. Second, To test the model, we can give it some starting stock and see if it can turn a profit after a period of time.