Our project is going to be focusing on predicting the value of certain stocks in the stock market. The project will focus on building and training a machine learning model to do this. We want to be able to create something that aligns with the interests of everyone in the group. This project will have multiple parts and the machine learning portion is something our group is passionate about and want to explore. There are also other parts of the project that will be required including a data acquisition process and visualization platform. The main learning point will be building and training the model.

There are three courses that I think will be specifically liable for my current knowledge in machine learning. These classes are Machine Learning (5137), Deep Learning (5173), and Intelligent Data Analysis (5052). These courses gave me an introduction to machine learning models and the mathematics behind them. In each class I had different projects affiliated with building basic neural networks and convolutional neural nets. I also have experience in building other machine learning models that could help in pre-training of the model. Having this practical knowledge will give us a head start in background knowledge needed for starting to develop this model.

One co-op experience that I think will really help in this project is my experience at Urbanloop. I learned a lot about project management there, as I was a leader for my group of the project. I organized and managed the workflow as well as a group of people. I also needed to speak with media outlets and demonstrate the project to different teams. I was able to practice some soft skills like leadership and effective communication. These skills will really help in the demonstration and organization of our group work.

Our initial motivation for this project was to find a project we could build a machine learning model around that had accessible data. We have, at past hackathons, tried to explore other options but we felt like this was a project with possible solutions still currently being sought after. So, building a model to predict stock prices would be a great project to demo in an interview. Once we started looking at how we would acquire our data we found that there were a lot of source that were readily accessible, credible, and free. Beyond the idea of the project, data science is a booming field that all of us were interested in learning more about. We also think that the stock market is something we all want to know more about, and what better way than to dive into a project predicting stocks.

Our project layout will consist of three different parts. The first part will be data acquisition, in which we will be building our own web scraper and multiple API scrapers to collect all of the data we might be interested in using. The second, and main, part will be building the machine learning model. We were thinking of building a hybrid model consisting of multiple machine learning techniques. This will be the main part of our project. The last part will be a visualization platform from which we can view some of the data and the results/metrics of the machine learning models. Our project outcomes should be a total completion of these things with a trained model.