Project Portfolio

Abstract: The following listings contain brief descriptions of projects I've worked on and links to access them. This is, of course, not a comprehensive list but it contains a few highlights.

Graduate School Projects

The Voice of Monetary Policy:

This group project was completed at the end of my MGT 6769: *Fixed Income Securities* course. This study delves into the realm of effective communication and its impact on financial markets. We adopted an advanced approach that involved the utilization of **deep learning algorithms, natural language processing (NLP)** techniques**,** and **sentiment analysis** models. We implemented a simple **Recurrent Neural Network (RNN)** using **SkLearn**. Our research required customized classifiers to extract nuanced emotional sentiment scores. Click here to see the paper.

Predicting Bankruptcy Risk in Public Companies:

This group project was completed at the end of my ISYE 7406: *Statistical Learning and Data Mining* course. This project combined my interest in machine learning with my interest in finance. My portion of the project focused on developing machine learning models to analyze company data using **Python**. Models were built using algorithms such as **neural networks, random forests, gradient boosting,** and various **regression** models. Click here to see the project.

Derivatives Portfolio

This group project was completed at the end of my MGT 6081: *Derivative Securities* course. We selected our favorite stocks and ETFs to create a portfolio that generates the highest return for the least variance. My portion of the project was developing the **Merton** model using **Python**. Click here to see the project.

Undergraduate School Projects

Utah Trail Data Analysis

This group project was completed at the end of my STAT 5410: *Spatial Statistics* course. This project modeled the relationship between socioeconomic status and access to trails in Salt Lake County, Utah. The scope of this project was Geospatial Data Analysis. We ran **regression** using **R**. Click here to see the paper.

Predicting Autism

This group project was completed at the end of my STAT 5650: *Statistical Learning and Data Mining* course. We utilized machine learning techniques in **R** to predict Autism in individuals based on a set of factors. The models we used included **regression, principal component analysis, classification trees, random forests,** and **gradient boosting** Click here to check out the paper.