SI671 - Final Project Proposal

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Project Topic:

Since the dawn of the new millenia, the global finance world has seen a new, multi-billion dollar market unveil itself. Within this new entity, market makers and participants are not what one pictures as traditional financiers. In place of well fitting suits, hard-bottomed soles, and high rise offices, one will find street fashion, air jordans, and teenage bedrooms. This rapidly-growing financial powerhouse is the global sneaker resale market. On platforms like StockX and GOAT, sneaker enthusiasts everywhere are buying and selling coveted shoes for prices well above retail. Particular styles of shoes, designed or worn by influencers in music, fashion, and sports, can see price gains of over 1000%. Growing popularity combined with high profits have led analysts to believe that the "resale market could [reach] $30 billion by 2030" (Wade). Given this high valuation, platforms like the before-mentioned StockX have sprung up, bringing analytics tools typically seen on Wall Street to sneaker resellers and enthusiasts. With this historical data organized and readily available, many data mining applications are possible

Objectives:

With this project, we intend to construct a forecasting time series model of the resale market for one the most commonly resold sneakers, Yeezy Boost 350s. To accomplish this, we must first obtain historical sales data on models of this shoe. This data is available via HTML tables on each shoe's individual StockX page. To pull the data into a format fit for our project, we will use Python with the beautiful soup and Selenium packages. Scraping methods will be based on previous efforts available here. Following data acquisition, our work will focus first on detection of key movements in the time series. These movements are long term trends, cyclic

variations, seasonal movements, and irregularities. Next, we will explore and evaluate different forecasting methods in Python, including moving average, ARIMA, SES, and others. Predictive models will be tested alongside different methods of discretization. Collaborative development and analysis will be handled via a Github repository.

Deliverable:

We intend to deliver a technical report describing our process for mining and modelling the resell market for Yeezy Boost 350s. The report will describe all steps of our process in a comprehensive manner, and will conclude with an analysis of how the various models and methods we explored perform within this domain. Additionally, we will showcase the best model for representing this type of data. Based on currently available knowledge, this report will be the first of its kind describing how different time-series forecasting methods perform on historical sneaker reselling data.

Team Members:

- Sulayman Ali will handle modelling of prepared data and visualization of results
- Fernando Cueva will handle data acquisition (scraping), preparation, and feature extraction

References

Wade, Reggie. “The Global Sneaker Resale Market Could Reach $30 Billion by 2030.” *Yahoo! Finance*, Yahoo!,