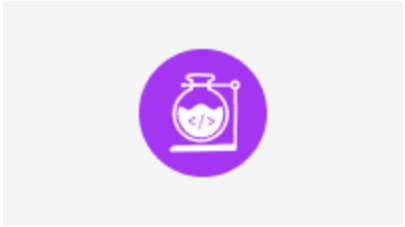
Predicting Stock Performance with Linear Models Using Python

udemy.com/labs/predicting-stock-performance-with-linear-models-using-python/project-overview



Your project assignment

YM

Your Manager

Nov 25, 4:58 PM

Hi Tejashree! Thanks for working on this project for our team.

The equity research team of our company is seeking to improve the quality of its stock performance forecasts by adding machine learning to its toolset. They want to make more accurate mid- to long-term stock performance predictions for all stocks on their surveillance list. The equity research team has asked our data & analytics team to tune, test and compare various linear regression models. We will then identify and deliver the best model with the highest prediction quality.

Your colleagues have already prepared a dataset (data.csv) with 1) the past performance for 15 stocks and 2) the past values for the Fama/French 5 Factors (features). We identified the need to provide one optimized model per stock as patterns are different across stocks. As the equity research team urgently needs the model for Apple Inc. (AAPL), your task as our data scientist is to tune, test and compare the following linear models for AAPL: 1) linear regression, 2) regularized regression with ElasticNet, 3) Linear Support Vector Regression (LinearSVR). I recommend working with Python (pandas, numpy, seaborn, and scikit-learn) for this project. You should use tools like pipelines, feature scaling/standardization, and grid search cross-validation for model training, tuning, and selection. To evaluate the quality of predictions, use the Root Mean Squared Error (RMSE) score. Please avoid random shuffling of time series when splitting the dataset into training, validation, and test (20%) sets. Finally, your task is to identify and share the best model for AAPL with the equity research team.

How you'll work

Your project has been broken into a set of tasks. To complete these tasks, use the provided workspace. You can launch your workspace by clicking below or using the button in the top right of the screen.

Each task includes step-by-step instructions as well as helpful documentation and necessary assets in the Resources section.

See your tasks