

## 3. The Winton Stock Market Challenge

### 3.1 Overview

#### Goal:

- To Find the hidden signal in the terabytes of noisy, non-stationary data via novel statistical modelling and data mining techniques. In this competition the challenge is **to predict the return of a stock, given the history of the past few days.**

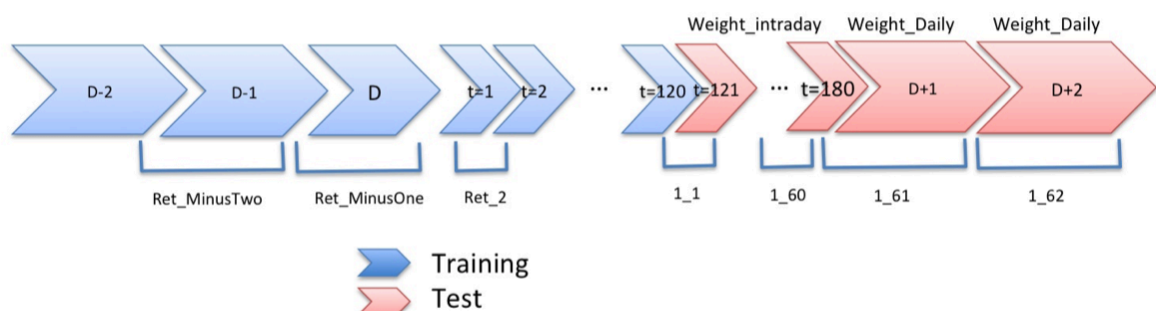
#### Evaluation Method:

- Provide 5-day windows of time, days D-2, D-1, D, D+1, and D+2. You are given returns in days D-2, D-1, and part of day D, and you are asked to predict the returns in the rest of day D, and in days D+1 and D+2.
- Weighted Mean Absolute Error *Weighted Factors is associated with the return*(similiar with the Benchmark competition):

$$WMAE = \frac{1}{n} \sum_{i=1}^n w_i \cdot |y_i - \hat{y}_i|,$$

### 3.2 Data

Basically just train.csv&test.csv, and a csv file for the submission template:



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During day D, there is intraday return data, which are the returns at different points in the day. We provide 180 minutes of data, from  $t=1$  to  $t=180$ . In the training set you are given the full 180 minutes, in the test set just the first 120 minutes are provided.

For each 5-day window, we also provide **25 features**, Feature\_1 to Feature\_25. These may or may not be useful in your prediction.

Each row in the dataset is an arbitrary stock at an arbitrary 5 day time window.

- **train.csv** - the training set, including the columns of:
  - Feature\_1 - Feature\_25
  - Ret\_MinusTwo, Ret\_MinusOne
  - Ret\_2 - Ret\_120
  - Ret\_121 - Ret\_180: **target variables**
  - Ret\_PlusOne, Ret\_PlusTwo: **target variables**
  - Weight\_Intraday, Weight\_Daily
- **test.csv** - the test set, including the columns of:
  - Feature\_1 - Feature\_25
  - Ret\_MinusTwo, Ret\_MinusOne
  - Ret\_2 - Ret\_120

### 3.3 Selected Solution

Pretty Tricky this one...

### 3.4 Comment