



The Winton Stock Market Challenge

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Icy Benko

288th place

Options

Meaning of features

posted in [The Winton Stock Market Challenge](#) 2 years ago



Now that the competition is over, is Winton going to share the meaning of the features, exactly what the returns were, and how the weights were computed?

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Humberto Bran... · (2nd in this Competition) · 2 years ago · Options



Thanks @Dave Klein,

I was happy to read it. Unfortunately, one competitor accused me without know my work. It was not good. However, he fell at the final. For this reason, it is important to me to know that people enjoyed what I wrote here in this forum.

To be honest, some days off during January were good for me. At the first moment, I was angry when they changed the data set. In my mind, few people had discover how to split data, until that moment, and they changed... And I spend long time to discover that. It was a puzzle to solve...

But... during my vacations I reflected and now I agree with them. It was fair... And then I decided to continue in the Winton Competition. To be honest, I came back only after Jan 15, 2016 (spending considerable time).

Now, I decided to try other contests. Maybe next week I will started in the "Home Depot Product Search Relevance".

All the best @Dave



Humberto Bran... • (2nd in this Competition) • 2 years ago • Options

^ 1 v

Hi Bingdu,

As you well said, we can use this technique... sliding window, as the network protocol..., or just increasing the size of your time series. Without to update features. Only doing a time series prediction... and using your own predictions to slide in other to predict the next one.

However, in the test data set, if you make one mistake in one intraday point, you will carry the error for other future points... and there are a lot of intraday points. For this reason, in my opinion, it is not a good idea.

In the real world, if you make a mistake prediction the point 121, you do not need to carry the error. In other to predict the next one, you can use the real 121 log return. Of course, you do not need to carry your wrong prediction . In this way, I think that is impossible to predict 60 intraday points with high quality in this competition, but I can be wrong. Do you know people in the top 10 private leaderboard that did it with quality for all stocks?

Maybe other people can give us other opinions.

All the best.



Humberto Bran... • (2nd in this Competition) • 2 years ago • Options

^ 1 v

Hi @Bing du,

I really do not know if it is possible.

In my opinion, any kind of attempt to predict intraday returns will fail without update in features.

In a real world problem, companies updates their features in microseconds, using order book information, order flow, sentiment analysis and so on.

In this simplified problem (here, in Kaggle, is impossible to treat the dynamic of the stock market), we have static features. In this way I ask you: how to predict many intraday values? I think we can try to predict the first one. After it, we can do only if there are features of the "future" in the data set. And I do not believe in this idea. I did not find evidence of this hypothesis.

So... it is only my opinion.

All the best.

Humberto



bingdu • 2 years ago • Options

^ 1 v

Also as a pretty much a beginner, I dont understand how this features could be used during prediction - for example when we have value of the home then we use size, number of rooms etc to get the price (regression). In this case we have multiple target values (121-160) - based on features and previous values 1-120. Anyone can briefly explain how these features are used in the model? I know its basics but as I said just started and some things make sense for me and some are quite curious.



Dave Klein • (572nd in this Competition) • 2 years ago • Options



Icy Benko,

The thing I found curious about the choice of intraday evaluation function was that a zero prediction for intraday returns on the training set outperformed a perfect-knowledge mean return prediction (not unexpected since WMAE is optimal for median not mean). Further, a perfect-knowledge median prediction didn't perform much better than the zero prediction. So, like you, I never went beyond looking at Ret_121 and the dailies.

I'm interested in hearing from Winton what their reasoning was for asking for minute-by-minute predictions. Given how close the winning scores were to the zero prediction, it seems like there was a missed opportunity for a more interesting contest.

On another note, I was happy to see some of the more active participants like Humberto at the top of the private leaderboard. I enjoyed his posts and hope he decides to come back for another contest.



Icy Benko • (288th in this Competition) • 2 years ago • Options



Humberto,

Agreed. I've enjoyed reading your various comments.

When I started the contest, I was wondering if Winton had given us some patterns in the intraday that were recurring. I was hoping I could find them, and just predict that event at a lagged point in the future. Patterns certainly occur at high frequency (just look at Nanex's colorfully named algorithms), but at intraday 1 minute, I had my doubts. You might pick up some block trades, but would have a hard time predicting exactly when in the future the next batch would occur.

In any case, I messed around with some compression and other Markov models, but spent more time on recurrent NNs. Hence my nom de contest, a shout out to Cybenko's theorem... However, I never did get beyond working on Ret_121 and the two dailies.

I think a better metric would have been binary prediction. I bet we'd see some interesting difference between contestants then. Predicting the exact level is insane.

My best to anyone who spent time on this problem.

→ RNN might not be a good option ...




Humberto Bran... • (2nd in this Competition) • 2 years ago • Options

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Hi lcy Benko,

I hope you are fine!

You said:

*I laughed when I read the rules of the contest. Really. **Predict the next 60 intraday returns?***

At first, it was my reaction too.

Because in my real life application, I use the data feed to update my features every single signal from the market. And I ask me: How can we predict intraday returns if there is no update of features.

And I thought: Maybe there are features from the "future" (related to specific times of the day). I could not identify if it is true. However, maybe, there is.

Nevertheless, If they do not give us any kind of information from the "future", the best way to do was try to predict only the RET_121. After this moment, we cannot do good things without updates from the data feed.

However, I do not have hypotheses if they added information that we could use during the intraday (after RET_121).

So, Let's imagine that they didn't provide us features to be used during a specific time after the RET_121. Ok? It is a way to evaluate people as well. They are trying to recruiting, aren't they?

In both ways they are evaluating people. For example, you are smart because you laughed about this issue. It is an insight that few people had during the competition, I am sure.

All the best @lcy Benko.



Nerotulip • (752nd in this Competition) • 2 years ago • Options

^	1	v
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It will be interesting indeed to know what the features were, how the returns were calculated, what stocks and time periods were covered, etc... Also, given that the best score beats the zero benchmark by ~1 point, is that really useful, and what does Winton consider a good score? And finally, it would be great to have some info on what the issue was with the initial test data, i.e. what was the "trick" that some exploited and that led to the data being replaced...

I only figured late last week that feature 7 had to be the date and that it was causing the whole CV/LB discrepancy. Didn't have time to change my CV and rerun everything... Oh well, that was interesting anyway.



Humberto Bran... • (2nd in this Competition) • 2 years ago • Options

^ 1 v

It will be interesting to us...

In order to verify our hypotheses... I have many assumptions...

All the best @JWJAnderson and @Icy Benko



JWJAnderson • 2 years ago • Options

^ 1 v

Icy Benko wrote

Now that the competition is over, is Winton going to share the meaning of the features, exactly what the returns were, and how the weights were computed?

Hi Icy Benko. We're preparing a response explaining these sorts of things, but we're just waiting on the leaderboard to be finalised. Expect it in the next couple of days.



Icy Benko • (288th in this Competition) • 2 years ago • Options

^ 0 v

@Nerotulip, No, it's not a good score. I think the competition was a black eye for Winton and they are thinking about how to spin it now. When the median gets you most of the way to the "winning" solution, you know it's a farce. I laughed when I read the rules of the contest. Really. Predict the next 60 intraday returns?



SkyLibrary • (75th in this Competition) • 2 years ago • Options

^ 0 v

My question is what is the best score people can get without analysing the distributions of training and test data and try to figure out how the split was made? After all, we all like models that can make us rich in real world stock market.

Also maybe @JWJAnderson and other experts in this field can give us some background reading materials about successful models in stock markets so we can learn something new from this competition.



Steve Armstrong • (65th in this Competition) • 2 years ago • Options



Here is my take on the factored features. Many seemed to be calculated based off the provided data.

Feature_1 : 2:10 sum of abs intra day values ordered. Also works for day values. NA and 1 seem uncorrelated. Vast majority of rows lack feature.

Feature_5 : unknown 6 is lowest of all means,sd, var. Used 3,4,6 to optimize and get a better score.

Feature_7 : Appears to be the data split into groups of about 50 records each. There is some grouping related to relative return in fields. High daily change in certain groups. 824 groups.

Feature_9 : 1:36 0=NA ordered abs mean of intraday mostly grouped in 6-16 scores are following along the curve of the abs mean intraday. Std optimize of groups didn't carry through to private data.

Feature_10 : 1:10 0=NA 50%NA 40%==5 score 4==1881 5=1722 6=1698 P1 4== -0.0001927(twice 5) Better score by .017 1,2,4,6 p2

Feature_13 : 0:9 Sorted data by standard deviation in percent change. This equates to being sorted by a lowering Wmea score. 0=2600.87 9=1384.93 209 worked with decently for 0,1,2 208 didn't react as expected.

Feature_16 : 1,2 count 610 39100 290 set NA to 1 0&1 low scores ~1700 2>2627 mean score. MinusOne 3>2% 1pos 2 neg 3zero large change in plusOne 2=.001 1=.0006 Intraday 0=-0.000005291 1=-0.000001463 2=0.00001428 New high score optimizing for the 290 records.

Feature_20 : 1:10 scores low at 6 concave pattern with 10 being off the scale for most items. Negative to positive sort on MinusOne. 6 being near zero.



lux • (332nd in this Competition) • 2 years ago • Options



I wanna to know what exactly weight_daily mean,because I use all features to predict weight_daily, and use weight_daily to predict plus1,



bingdu • 2 years ago • Options



Hi @Humberto - thanks for an answer. I have been using KNIME and multi target prediction. The best score I got was 1743... So if I understood You correctly in real world it works like this: Predict first value (lets say 121) using features only, then change features (calculate new set of features based on some algorithms) and then predict 122nd value and so on? How the previous values 1-120 were used in this case together with features? Even hypothetical explanation could be good. My one idea would be:

1. take 1-120 values
2. predict 121 value
3. add 121 to 1-120 set 4 take 1-121 values 5 predict 122 value
4. add 122 to 1-121 set

But where is place for features in this example...

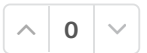
The one closest to Your description would be:

1. calculate features from 1-120 and some other defined properties
2. predict 121 using features
3. calculate features from 1-121 (new prediction included)
4. predict 122 using features

Thanks for any answers. I know here it was not possible but just was wondering how they do it in real life.



ANUKRISHNAN • 10 months ago • Options



Now that the competition is over, is Winton going to share the meaning of the features, exactly what the returns were, and how the weights were computed?where is the features?? where is the explanations of that and how it is calculated??