Yewno

Quantitative Finance Assignment

Thanks for your interest in Yewno. At work every day, you'll be dealing with a range of challenges, including modeling, developing and testing, hopefully all fun. The objective of this assignment is to evaluate how you would deal with a problem in a real setting.

The process goes like this:
1. You: Thoroughly read the exercise below, if you have any questions, email tharsis@yewno.com.
2. You: Complete the challenge within 3-5 days of receiving this document.
3. We: Contact you to setup a time to chat about your submission.

All answers must be supported by (i) empirical evidence and (ii) code.

We do not expect you to develop the ultimate solution to the problems. We are however interested in seeing:
1. How do you approach a problem?
2. How do you communicate your results?
3. How creative your solutions are?
4. How technically sound your solution is?
5. Are you aware of potential pitfalls your solution might have and could you propose alternative paths?

Introduction

Data and data processing are the foundation of Yewno. With our goal to ingest the world's knowledge, we are working to consume both public and private data sources in both batch and streaming methods. Both data pipelines are built around sets of algorithms that are ran against the datasets to build the Yewno inference engine.

Working with Yewno Finance team you will be responsible to develop cutting edge machine learning methods as well as quantitative finance models to extract useful, decision-making, knowledge from both traditional and non-traditional datasets. You should be a data-savvy as well as a financial markets technology enthusiast. Your solutions must be robust and mathematically sound as well as creative to exploit the multitude of datasets at Yewno. This role will work closely with both engineering and data science teams to fine-tune the algorithms into performant, production-ready systems.

Questions

1. Use freely available data from the web to predict/explain macroeconomic indicators. Financial/Economic/Fundamentals data are not allowed.

2. Implement one Smart Beta strategy and discuss pros and cons compared to a chosen benchmark.

3.

a) Suggest one data source that might be useful to explain or predict the FX market.
b) Derive and discuss relevant analytics from this data source.
c) Determine whether your proposed analytics are co-integrated with currency pairs.
d) Describe and implement a pairs trading strategy exploiting your analytics.

When you are finished, send us a link to the code repository - Github or BitBucket are great. Please be sure to **save the outputs of your test** run so we can take a look. Remember, we care for as much about **how you think** about the problem as the code itself! Document the code as needed and be ready to discuss your project.

Above all, have fun and reach out if you have any questions. The task is designed to take approximately 2 days to complete.