Using the API

January 27, 2022

1 Introduction

The REST API is the main tool you use to contribute features and algorithms to the ecosystem. This document walks you how to do so, with specific attention to the alpha test that starts in Q1 2022.

During the alpha test, everything, including this API is brand new. The good news is that means the functionality is super simple and easy to use. The bad news is if you do anything wrong, it will just get rejected, and not handled by more robust error-handling scripts. If you encounter any issue, give us an email![1] We are here to help.

2 Summary

The basic workflow for contributing features to the ecosystem:

1. Get a Private key from this form.
2. Format your data, save it as a JSON object.
3. Submit the data that covers the appropriate in-sample time frame.
4. Schedule a cron job to send in (usually) a single row to update your feature in real time.

The below two pages walks you through everything you need to know to submit features and begin claiming land in the feature space.

3 Signing Up

Use this form to get your private key. You'll receive an email with a key soon after you submit the form. You can reply to that email if you have any questions and an actual human being will respond.

[1] gina [at] judgeresearch [dot] co.

4 Submitting Your Features and Algorithms

4.1 Submitting Algorithms

For the alpha test, we do not have means to test algorithms you submit without looking at your code. We assume this is not very attractive to most quants, and we therefore will focus the rest of the document on submitting features.

4.2 Endpoint

The endpoint where you submit features and algorithms is,

```
https://vh8bhzn4c5.execute-api.us-east-2.amazonaws.com/dev/
incoming-data-judgeresearch/
```

4.3 Naming Your Feature

If you are submitting before the alpha test officially begins in late February, (a) congratulations, you are likely claiming subspaces of the feature space that are of extreme value; (b) you have to name the file by sending it to the above endpoint plus your file name. The file name must be your org name - variable name. For example, if your fund was called cryptoQuantFund and you labeled your variable x1, you would PUT your JSON at the endpoint,

```
https://vh8bhzn4c5.execute-api.us-east-2.amazonaws.com/dev/
incoming-data-judgeresearch/cryptoQuantFund-x1
```

4.3.1 Selecting a Name

We assume that you will not want to reveal your feature's substance by labeling it accurately. Just make sure you give it a unique identifier that you can remember, so that when you update it the new data appends to the right JSON in our database.

In the future, you'll be able to organize matrices with one PUT request. For the alpha test, please only submit vectors - that is, one feature - per PUT request. You can submit up to 100 such requests in each time bloc.

5 Formatting Your Data

5.1 Data Types

For the alpha test, we only accept JSON objects.

5.2 Specifying Your Dependent Variable

For the alpha test, the first attribute - value pair should be either:

```
"DV" - "BTC-USD"
```

or

```
"DV" - "ETH-USD"
```

where "DV" is short for "dependent variable."

While each dependent variable will be given be trained on your feature, more than 95%+ of the chances your feature receives will be related to the dependent variable you specify.

The attribute - value pair must be a standard LINUX-format date, e.g: "2000-11-22 08:00:00" - {this time period's value}.

Missing data *must* be represented by an NA. This includes any time periods from markets that are not 24-7.

6 Updating Your Data

After the initial submission of the training sample, each observation should be submitted *before* the turn of the time period. For example, the cut-off submission time at the turn of the day is 23:59, not midnight. Like OHLC data and time series data in general, the time stamp refers to the beginning of the UTC time period. For example, for an hourly time series, '20:00' refers to the time bloc '20:00-20:59.'

You must submit a JSON identical in every way as your original submission, except that it contains only the rows to append to your original object. Typically, this will be just one row, so your JSON would contain only one attribute - value pair; but if you missed an observation, simply submit the rows not yet submitted.

7 The Alpha Test

The alpha test begins in late February, 2022, but you or your fund can start now. The below vignette gives you step-by-step instructions for participating.

It is a data experiment - no live positions will be taken, as the fund itself is not yet set up.

While the alpha test is an experiment, users still 'claim their land' (see 'How It Works') by moving first. The massive, overwhelming first-mover advantages we've built into the incentive structure could, therefore, end up affecting your rewards for years to come.

8 Submitting Features for the Alpha Test

The alpha test will run over two dependent variables, ETH-USD and BTC-USD, at the four hour interval.

The date window for you initial submission should begin at:

```
2019-01-01 00:00:00
```

and run until the most recent four hour block.

After your first submission, you should schedule a cron job to send in new data every period. The contest will run for 45 days.

The judging criteria will solely involve the live data you send in in real time. Users that submit features before others, with an identity defined as as $\rho \geq .975$, will retain their 'land.' While the long-run emphasis of the project is for experts to send in high-value, hard-to-engineer features, in the beginning, easy-to-engineer features may prove invaluable land to hold in the feature space, at very little overhead for participants. For example, simple logged

differenced OHLCV data for various coins will likely be included in innumerable models in the future, and whoever submits those first, if they do so reliably in the future, will retain that exceptional land.