Package ‘Rnumerai’

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Title Interface to the Numerai Machine Learning Tournament API

Version 2.1

Description Routines to interact with the Numerai Machine Learning Tournament API <https://numer.ai>. The functionality includes the ability to automatically download the current tournament data, submit predictions, and to get information for your user. General 'GraphQL' queries can also be executed.

Depends R (>= 3.1)

License GPL-3

Encoding UTF-8

LazyData true

URL `https://github.com/Omni-Analytics-Group/Rnumerai`

BugReports `https://github.com/Omni-Analytics-Group/Rnumerai/issues`

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Imports httr, lubridate, dplyr, tidyr, ggplot2, purrr

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R topics documented:

`account_info` *Get information about your account*

Description

Get information about your account

Usage

```
account_info()
```

Value

A list containing information about account

Examples

```
## Not run:
ainfo <- account_info()
names(ainfo)
ainfo$Latest_Submission

## End(Not run)
```

`current_round` *Get current round and it's closing time*

Description

Get current round and it's closing time

Usage

```
current_round(tournament = "Kazutsugi")
```

Arguments

`tournament`	The name of the tournament, Default is Kazutsugi and is not case-sensitive

Value

Returns the current round number and it's closing times

Examples

```
## Not run:
current_round()

## End(Not run)
```

`download_data` *Function to download the Numerai Tournament data*

Description

Function to download the Numerai Tournament data

Usage

```
download_data(location = tempdir(), tournament = "KAZUTSUGI")
```

Arguments

`location`	The directory path in which to store the data
`tournament`	The name of the tournament, Default is KAZUTSUGI and is not case-sensitive. Since at the moment the datasets are same for all tournaments this parameter can be left blank.

Value

A list containing the training and tournament data objects

Examples

```
## Not run:
## Directory where data files and prediction files to be saved
## Put custom directory path or use the current working directory
data_dir <- tempdir()

## Download data set for current competition
data <- download_data(data_dir,tournament="KAZUTSUGI")
data_train <- data$data_train
data_tournament <- data$data_tournament

## End(Not run)
```

`get_api_key` *Gets the Numerai API key*

Description

Gets the Numerai API key

Usage

```
get_api_key()
```

Value

Your Numerai API key, if set

Examples

```
## Not run:
get_api_key()

## End(Not run)
```

`get_models` *Get models associated with your account*

Description

Get models associated with your account

Usage

```
get_models()
```

Value

A list containing information about the models

Examples

```
## Not run:
models <- get_models()

## End(Not run)
```

`get_password` *Gets the Numerai Password*

Description

Gets the Numerai Password

Usage

```
get_password()
```

Value

Your Numerai Password, if set

Examples

```
## Not run:
get_password()

## End(Not run)
```

`get_public_id` *Gets the Numerai Public ID*

Description

Gets the Numerai Public ID

Usage

```
get_public_id()
```

Value

Your Numerai Public ID, if set

Examples

```
## Not run:
get_public_id()

## End(Not run)
```

`get_valid_data` *Get the valid dataset for a particular metric*

Description

Get the valid dataset for a particular metric

Usage

```
get_valid_data(username, metric, merge = FALSE, round_aggregate = TRUE)
```

Arguments

`username`	A vector of one or more usernames
`metric`	Based on the metric selected, get the correct data
`merge`	If TRUE, merge the results into a single username
`round_aggregate`	If TRUE, aggregate the submission data by round

`leaderboard` *Get Current leaderboard*

Description

Get Current leaderboard

Usage

```
leaderboard()
```

Value

List containing leaderboard

Examples

```
## Not run:
leaderboard()

## End(Not run)
```

`performance_distribution` *Get the performance of the user as a distribution*

Description

Get the performance of the user as a distribution

Usage

```
performance_distribution(
  username,
  metric,
  merge = FALSE,
  round_aggregate = TRUE
)
```

Arguments

`username`	A vector of one or more usernames
`metric`	A statistic, as a character vector.
`merge`	If TRUE, combine the usernames into a single result
`round_aggregate`	If TRUE, aggregate the submission data by round

`performance_over_time` *Get the performance of the user over time*

Description

Get the performance of the user over time

Usage

```
performance_over_time(
  username,
  metric,
  merge = FALSE,
  outlier_cutoff = if (round_aggregate) 0 else 0.0125,
  round_aggregate = TRUE
)
```

Arguments

`username`	A vector of one or more usernames
`metric`	A statistic, as a character vector.
`merge`	If TRUE, combine the usernames into a single result
`outlier_cutoff`	The absolute value above which points will be displayed
`round_aggregate`	If TRUE, aggregate the submission data by round

`release_nmr` *Release NMR*

Description

Release NMR

Usage

```
release_nmr(value, model_id = NULL, mfa_code = "", password = "")
```

Arguments

`value`	The amount of NMR to release
`model_id`	The id of the model with which to stake
`mfa_code`	The mfa code
`password`	Your password

Value

The transaction hash for release request

Examples

```
## Not run:
release_tx_hash <- release_nmr(value = 1)

## End(Not run)
```

`round_stats` *Get Information for a Round Number*

Description

Get Information for a Round Number

Usage

```
round_stats(round_number, tournament = "Kazutsugi")
```

Arguments

`round_number`	Round Number for which information to fetch
`tournament`	The name of the tournament, Default is Kazutsugi and is not case-sensitive

Value

List containing general round information

Examples

```
## Not run:
round_stats(round_number=177)

## End(Not run)
```

`run_query` *Function to run a raw GraphQL query on the API interface*

Description

Function to run a raw GraphQL query on the API interface

Usage

```
run_query(query, id = get_public_id(), key = get_api_key())
```

Arguments

`query`	The graphQL query to run on the API as a string in single quotes
`id`	The public id of the Numerai application
`key`	The Numerai API key

Value

The parsed json content returned from the request

Examples

```
## Not run:
## Run Custom GraphQL code from R
custom_query <- "query queryname {
rounds (number:82) {
closeTime
}
}"
run_query(query=custom_query)$data

## End(Not run)
```

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set_api_key *Sets the Numerai API key*

Description

Sets the Numerai API key

Usage

```
set_api_key(key)
```

Arguments

key	The Numerai API key

Value

A boolean TRUE if the key was successfully set

Examples

```
## Not run:
set_api_key("abcdefghijklmnop")

## End(Not run)
```

set_password *Sets the Numerai Password*

Description

Sets the Numerai Password

Usage

```
set_password(pass)
```

Arguments

`pass`	The Numerai Password

Value

A boolean TRUE if the password was successfully set

Examples

```
## Not run:
set_password("abcdefghijklmnop")

## End(Not run)
```

set_public_id *Sets the Numerai Public ID*

Description

Sets the Numerai Public ID

Usage

```
set_public_id(id)
```

Arguments

`id`	The Numerai Public ID

Value

A boolean TRUE if the ID was successfully set

Examples

```
## Not run:
set_public_id("abcdefghijklmnop")

## End(Not run)
```

`stake_nmr` *Stake NMR*

Description

Stake NMR

Usage

```
stake_nmr(value, model_id = NULL, mfa_code = "", password = "")
```

Arguments

`value`	The amount of NMR to stake
`model_id`	The id of the model with which to stake
`mfa_code`	The mfa code
`password`	Your password

Value

The transaction hash for stake made

Examples

```
## Not run:
stake_tx_hash <- stake_nmr(value = 1)

## End(Not run)
```

`status_submission_by_id` *Get information about a submission from a submission id*

Description

Get information about a submission from a submission id

Usage

```
status_submission_by_id(sub_id)
```

Arguments

`sub_id`	The id of the submission

Value

A list containing information about the given submission id

Examples

```
## Not run:
status_submission_by_id(submission_id)

## End(Not run)
```

`submit_predictions` *Function to submit the Numerai Tournament predictions*

Description

Function to submit the Numerai Tournament predictions

Usage

```
submit_predictions(
  submission,
  model_id = NULL,
  location = tempdir(),
  tournament = "Kazutsugi"
)
```

Arguments

`submission`	The data frame of predictions to submit. This should have two columns named "id" & "prediction_kazutsugi"
`model_id`	Target model UUID (required for accounts with multiple models)
`location`	The location in which to store the predictions
`tournament`	The name of the tournament, Default is Kazutsugi and is not case-sensitive

Value

The submission id for the submission made

Examples

```
## Not run:
submission_id <- submit_predictions(submission_data,tournament="Kazutsugi")

## End(Not run)
```

`summary_statistics` *Get the summary statistics for*

Description

Get the summary statistics for

Usage

```
summary_statistics(username, dates = NULL, round_aggregate = TRUE)
```

Arguments

`username`	A vector of one or more usernames
`dates`	A vector of one or more dates to consider. If NULL, use all data
`round_aggregate`	If TRUE, aggregate the submission data by round

`user_info` *Get information about your username*

Description

Get information about your username

Usage

```
user_info(model_id = NULL)
```

Arguments

`model_id`	The id of the model

Value

A list containing information about user

Examples

```
## Not run:
uinfo <- user_info()
names(uinfo)
uinfo$Latest_Submission

## End(Not run)
```

`user_performance` *Get User Performance*

Description

Get User Performance

Usage

```
user_performance(user_name = "theomniacs")
```

Arguments

`user_name`	UserName for which performance metrics to get

Value

Get User Performance

Examples

```
## Not run:
user_performance(user_name="theomniacs")

## End(Not run)
```

`user_performance_data` *Get the performance of the user over time*

Description

Get the performance of the user over time

Usage

```
user_performance_data(username, dates = NULL, round_aggregate = TRUE)
```

Arguments

`username`	A vector of one or more usernames
`dates`	A vector of one or more dates to consider. If NULL, use all data
`round_aggregate`	If TRUE, aggregate the submission data by round

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