

Package ‘zoltr’

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Title Interface to the 'Zoltar' Forecast Repository API

Version 0.5.1

Description 'Zoltar' <<https://www.zoltardata.com/>>

is a website that provides a repository of model forecast results in a standardized format and a central location. It supports storing, retrieving, comparing, and analyzing time series forecasts for prediction challenges of interest to the modeling community. This package provides functions for working with the 'Zoltar' API, including connecting and authenticating, getting information about projects, models, and forecasts, deleting and uploading forecast data, and downloading scores.

URL <https://github.com/reichlab/zoltr>, <http://reichlab.io/zoltr/>

BugReports <https://github.com/reichlab/zoltr/issues>

License GPL-3

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Author Matthew Cornell [aut, cre],
Nicholas Reich [aut, cph]

Maintainer Matthew Cornell <cornell@umass.edu>

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R topics documented:

create_model	2
create_project	3
delete_forecast	4
delete_model	4
delete_project	5
download_forecast	6
forecasts	6
forecast_data_from_cdc_csv_file	7
forecast_data_from_cdc_data_frame	8
forecast_info	8
get_resource	9
models	9
model_info	10
new_connection	11
projects	11
project_info	12
scores	13
targets	13
target_info	14
timezeros	15
timezero_info	15
truth	16
unit_info	17
upload_forecast	17
upload_info	18
upload_info_forecast_url	19
zoltar_authenticate	20
zoltar_units	20
Index	22

create_model	<i>Create a model</i>
--------------	-----------------------

Description

Creates the model in the passed project using the passed list. Fails if a model with the passed name already exists.

Usage

```
create_model(zoltar_connection, project_url, model_config)
```

Arguments

- zoltar_connection
A 'ZoltarConnection' object as returned by [new_connection](#)
- project_url
url of a project in zoltar_connection's projects. this is the project the new model will be created in
- model_config
A 'list' containing a Zoltar model configuration. An example: example-model-config.json . Full documentation at <https://docs.zoltardata.com/>.

Value

model_url of the newly-created model

Examples

```
## Not run:
new_model_url <- create_model(conn, "https://www.zoltardata.com/project/9/",
                             jsonlite::read_json("example-model-config.json"))

## End(Not run)
```

create_project	<i>Create a project</i>
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Description

Creates the project using the passed project configuration list. Fails if a project with the passed name already exists.

Usage

```
create_project(zoltar_connection, project_config)
```

Arguments

- zoltar_connection
A 'ZoltarConnection' object as returned by [new_connection](#)
- project_config
A 'list' containing a Zoltar project configuration. note that this list validated by the server and not here. An example: cdc-project.json Full documentation at <https://docs.zoltardata.com/>.

Value

project_url of the newly-created project

Examples

```
## Not run:  
new_project_url <- create_project(conn, jsonlite::read_json("cdc-project.json"))  
  
## End(Not run)
```

delete_forecast	<i>Delete a forecast</i>
-----------------	--------------------------

Description

Deletes the forecast with the passed URL. This is permanent and cannot be undone.

Usage

```
delete_forecast(zoltar_connection, forecast_url)
```

Arguments

zoltar_connection
A ‘ZoltarConnection’ object as returned by [new_connection](#)

forecast_url
URL of a forecast in zoltar_connection’s forecasts

Value

None

Examples

```
## Not run:  
delete_forecast(conn, "http://example.com/api/forecast/1/")  
  
## End(Not run)
```

delete_model	<i>Delete a model</i>
--------------	-----------------------

Description

Deletes the model with the passed ID. This is permanent and cannot be undone.

Usage

```
delete_model(zoltar_connection, model_url)
```

Arguments

zoltar_connection
A 'ZoltarConnection' object as returned by [new_connection](#)

model_url
URL of a model in zoltar_connection's models

Value

None

Examples

```
## Not run:  
delete_model(conn, "http://www.zoltardata.com/api/model/1/")  
  
## End(Not run)
```

delete_project	<i>Delete a project</i>
----------------	-------------------------

Description

Deletes the project with the passed URL. This is permanent and cannot be undone.

Usage

```
delete_project(zoltar_connection, project_url)
```

Arguments

zoltar_connection
A 'ZoltarConnection' object as returned by [new_connection](#)

project_url
URL of a project in zoltar_connection's projects

Value

None

Examples

```
## Not run:  
delete_project(conn, "https://www.zoltardata.com/project/9/")  
  
## End(Not run)
```

download_forecast	<i>Gets a forecast's data</i>
-------------------	-------------------------------

Description

Gets a forecast's data

Usage

```
download_forecast(zoltar_connection, forecast_url)
```

Arguments

zoltar_connection
A 'ZoltarConnection' object as returned by [new_connection](#)

forecast_url
URL of a forecast in zoltar_connection's forecasts

Value

Forecast data as a 'list' in the Zoltar standard format. meta information is ignored. Full documentation at <https://docs.zoltardata.com/>.

Examples

```
## Not run:  
forecast_data <- download_forecast(conn, "http://example.com/api/forecast/1/")  
  
## End(Not run)
```

forecasts	<i>Get a model's forecasts</i>
-----------	--------------------------------

Description

Get a model's forecasts

Usage

```
forecasts(zoltar_connection, model_url)
```

Arguments

zoltar_connection
A 'ZoltarConnection' object as returned by [new_connection](#)

model_url
URL of a model in zoltar_connection's models

Value

A 'data.frame' of forecast information for the passed model

Examples

```
## Not run:
the_forecasts <- forecasts(conn, "http://www.zoltardata.com/api/model/1/")

## End(Not run)
```

forecast_data_from_cdc_csv_file

Loads and converts a CDC CSV file to Zoltar's native 'list' format

Description

Loads and converts a CDC CSV file to Zoltar's native 'list' format

Usage

```
forecast_data_from_cdc_csv_file(season_start_year, cdc_csv_file)
```

Arguments

season_start_year

An integer specifying the "season" that cdc_csv_file is in. Used to convert EWs to YYYY_MM_DD_DATE_FORMAT. zoltr uses week 30 as the season break-point, e.g. the "2016/2017 season" starts with

cdc_csv_file A CDC CSV file

Value

cdc_csv_file's data as Zoltar's native 'list' format, but only the "predictions" item, and not "meta"

Examples

```
## Not run:
forecast_data <- forecast_data_from_cdc_csv_file(2016, "my_forecast.cdc.csv")

## End(Not run)
```

```
forecast_data_from_cdc_data_frame
    'forecast_data_from_cdc_csv_file()'helper
```

Description

'forecast_data_from_cdc_csv_file()'helper

Usage

```
forecast_data_from_cdc_data_frame(season_start_year, cdc_data_frame)
```

Arguments

```
season_start_year
    as passed to 'forecast_data_from_cdc_csv_file()'
cdc_data_frame ""
```

Value

same as 'forecast_data_from_cdc_csv_file()'

```
forecast_info      Gets a forecast's information
```

Description

Gets a forecast's information

Usage

```
forecast_info(zoltar_connection, forecast_url)
```

Arguments

```
zoltar_connection
    A 'ZoltarConnection' object as returned by new\_connection
forecast_url    URL of a forecast in zoltar_connection's forecasts
```

Value

A 'list' of forecast information for the passed forecast_url

Examples

```
## Not run:
  the_forecast_info <- forecast_info(conn, "http://example.com/api/forecast/1/")

## End(Not run)
```

get_resource	<i>Get JSON for a resource (URL). Authenticates if necessary</i>
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Description

Get JSON for a resource (URL). Authenticates if necessary

Usage

```
get_resource(zoltar_connection, url)
```

Arguments

zoltar_connection
 A ‘ZoltarConnection’ object as returned by [new_connection](#)

url
 A string of the resource’s URL

Value

A ‘list’ that contains JSON information for the passed URL

models	<i>Get a project’s models</i>
--------	-------------------------------

Description

Get a project’s models

Usage

```
models(zoltar_connection, project_url)
```

Arguments

zoltar_connection
 A ‘ZoltarConnection’ object as returned by [new_connection](#)

project_url
 URL of a project in zoltar_connection’s projects

Value

A 'data.frame' of model contents for all models in the passed project

Examples

```
## Not run:
  the_models <- models(conn, "https://www.zoltardata.com/project/9/")

## End(Not run)
```

model_info

Get information about a model

Description

Get information about a model

Usage

```
model_info(zoltar_connection, model_url)
```

Arguments

zoltar_connection
A 'ZoltarConnection' object as returned by [new_connection](#)

model_url
URL of a model in zoltar_connection's models

Value

A 'list' of model information for the passed model_url

Examples

```
## Not run:
  the_model_info <- model_info(conn, "http://www.zoltardata.com/api/model/1/")

## End(Not run)
```

new_connection	<i>Get a connection to a Zoltar host</i>
----------------	--

Description

Returns a new connection object, which is the starting point for working with the Zoltar API. Once you have the connection you can call [zoltar_authenticate](#) on it, and then call [projects](#) to get a list of Project objects to start working with.

Usage

```
new_connection(host = "https://zoltardata.com")
```

Arguments

host	The Zoltar site to connect to. Does <i>*not*</i> include a trailing slash ('/'). Defaults to https://zoltardata.com
------	--

Details

A note on URLs: We require a trailing slash ('/') on all URLs. The only exception is the host arg passed to this function. This convention matches Django REST framework one, which is what Zoltar is written in.

Value

A 'ZoltarConnection' object

Examples

```
## Not run:  
conn <- new_connection()  
  
## End(Not run)
```

projects	<i>Get information about all projects</i>
----------	---

Description

Get information about all projects

Usage

```
projects(zoltar_connection)
```

Arguments

zoltar_connection
A 'ZoltarConnection' object as returned by [new_connection](#)

Value

A 'data.frame' of all projects' contents

Examples

```
## Not run:  
the_projects <- projects(conn)  
  
## End(Not run)
```

project_info	<i>Get information about a project</i>
--------------	--

Description

Get information about a project

Usage

```
project_info(zoltar_connection, project_url)
```

Arguments

zoltar_connection
A 'ZoltarConnection' object as returned by [new_connection](#)

project_url URL of a project in zoltar_connection's projects

Value

A 'list' of project information for the passed project_url

Examples

```
## Not run:  
the_project_info <- project_info(conn, "https://www.zoltardata.com/project/9/")  
  
## End(Not run)
```

scores	<i>Get a project's scores</i>
--------	-------------------------------

Description

Get a project's scores

Usage

```
scores(zoltar_connection, project_url)
```

Arguments

```
zoltar_connection      A 'ZoltarConnection' object as returned by new\_connection  
project_url           URL of a project in zoltar_connection's projects
```

Value

A 'data.frame' of score data for all models in the passed project URL

Examples

```
## Not run:  
the_scores <- scores(conn, "https://www.zoltardata.com/project/9/")  
  
## End(Not run)
```

targets	<i>Get a project's targets</i>
---------	--------------------------------

Description

Get a project's targets

Usage

```
targets(zoltar_connection, project_url)
```

Arguments

```
zoltar_connection      A 'ZoltarConnection' object as returned by new\_connection  
project_url           URL of a project in zoltar_connection's projects
```

Value

A 'data.frame' of target contents for the passed project

Examples

```
## Not run:  
  the_targets <- targets(conn, "https://www.zoltardata.com/project/9/")  
  
## End(Not run)
```

target_info	<i>Get information about a target</i>
-------------	---------------------------------------

Description

Get information about a target

Usage

```
target_info(zoltar_connection, target_url)
```

Arguments

zoltar_connection
A 'ZoltarConnection' object as returned by [new_connection](#)

target_url
URL of a target in zoltar_connection's targets

Value

A 'list' of target information for the passed target_url

Examples

```
## Not run:  
  the_target_info <- target_info(conn, "https://www.zoltardata.com/target/3/")  
  
## End(Not run)
```

timezeros	<i>Get a project's timezeros</i>
-----------	----------------------------------

Description

Get a project's timezeros

Usage

```
timezeros(zoltar_connection, project_url)
```

Arguments

zoltar_connection
A 'ZoltarConnection' object as returned by [new_connection](#)

project_url
URL of a project in zoltar_connection's projects

Value

A 'data.frame' of timezero contents for the passed project

Examples

```
## Not run:  
the_timezeros <- timezeros(conn, "https://www.zoltardata.com/project/9/")  
  
## End(Not run)
```

timezero_info	<i>Get information about a timezero</i>
---------------	---

Description

Get information about a timezero

Usage

```
timezero_info(zoltar_connection, timezero_url)
```

Arguments

zoltar_connection
A 'ZoltarConnection' object as returned by [new_connection](#)

timezero_url
URL of a timezero in zoltar_connection's timezeros

Value

A 'list' of timezero information for the passed timezero_url

Examples

```
## Not run:
  the_timezero_info <- timezero_info(conn, "https://www.zoltardata.com/timezero/3/")

## End(Not run)
```

truth	<i>Get a project's truth</i>
-------	------------------------------

Description

Get a project's truth

Usage

```
truth(zoltar_connection, project_url)
```

Arguments

zoltar_connection A 'ZoltarConnection' object as returned by [new_connection](#)
project_url URL of a project in zoltar_connection's projects

Value

A 'data.frame' of truth data for the passed project URL

Examples

```
## Not run:
  the_truth <- truth(conn, "https://www.zoltardata.com/project/9/")

## End(Not run)
```

unit_info	<i>Get information about a unit</i>
-----------	-------------------------------------

Description

Get information about a unit

Usage

```
unit_info(zoltar_connection, unit_url)
```

Arguments

zoltar_connection
A ‘ZoltarConnection’ object as returned by [new_connection](#)

unit_url
URL of a unit in zoltar_connection’s zoltar_units

Value

A ‘list’ of unit information for the passed unit_url

Examples

```
## Not run:  
the_unit_info <- unit_info(conn, "https://www.zoltardata.com/unit/3/")  
  
## End(Not run)
```

upload_forecast	<i>Upload a forecast</i>
-----------------	--------------------------

Description

This function submits forecast data to the server for uploading. Returns an UploadFileJob object that can be used to up, which depends on the number of current uploads in the queue. Zoltar tracks these via ‘UploadFileJob’ objects.)

Usage

```
upload_forecast(  
  zoltar_connection,  
  model_url,  
  timezero_date,  
  forecast_data,  
  notes = ""  
)
```

Arguments

zoltar_connection	A ‘ZoltarConnection’ object as returned by new_connection
model_url	URL of a model in zoltar_connection’s projects
timezero_date	The date of the project timezero you are uploading for. it is a string in format YYYYMMDD
forecast_data	Forecast data as a ‘list’ in the Zoltar standard format
notes	Optional user notes for the new forecast

Value

An UploadFileJob URL for the upload

Examples

```
## Not run:
forecast_data <- jsonlite::read_json("docs-predictions.json")
upload_file_job_url <- upload_forecast(conn, "http://www.zoltardata.com/api/model/1/",
                                     "2017-01-17", forecast_data, "a mid-January forecast")

## End(Not run)
```

upload_info	<i>Get an upload’s information</i>
-------------	------------------------------------

Description

Gets an upload’s information that can be used to track the upload’s progress. (Uploads are processed in a queue,

Usage

```
upload_info(zoltar_connection, upload_file_job_url)
```

Arguments

zoltar_connection	A ‘ZoltarConnection’ object as returned by new_connection
upload_file_job_url	URL of a job in zoltar_connection that was uploaded via upload_forecast

Value

A ‘list’ of upload information for the passed upload_file_job_url. it has these names: id, url, status, user, created_at, updated_at, failure_message, filename, input_json, output_json

Examples

```
## Not run:
  the_upload_info <- upload_info(conn, "http://example.com/api/uploadfilejob/2/")

## End(Not run)
```

upload_info_forecast_url
Get a new forecast upload's url

Description

A helper function that returns the URL of a newly-uploaded forecast from `upload_info`.

Usage

```
upload_info_forecast_url(zoltar_connection, the_upload_info)
```

Arguments

`zoltar_connection`
A 'ZoltarConnection' object as returned by [new_connection](#)

`the_upload_info`
a 'list' object as returned by [upload_info](#)

Value

A URL of the new forecast

Examples

```
## Not run:
  new_forecast_url <- upload_info_forecast_url(conn, "http://example.com/api/uploadfilejob/2/")

## End(Not run)
```

zoltar_authenticate *Log in to a Zoltar host*

Description

Returns a new ‘ZoltarConnection’ object, which is the starting point for working with the Zoltar API. Once you have the connection you can call `zoltar_authenticate()` on it, and call `projects()` to get a list of objects to start working with.

Usage

```
zoltar_authenticate(zoltar_connection, username, password)
```

Arguments

zoltar_connection	A ‘ZoltarConnection’ object as returned by new_connection .
username	Username for the account to use on the connection’s host
password	Password ""

Value

None

Examples

```
## Not run:
  zoltar_authenticate(conn, "USERNAME", "PASSWORD")

## End(Not run)
```

zoltar_units *Get a project’s zoltar_units*

Description

Get a project’s zoltar_units

Usage

```
zoltar_units(zoltar_connection, project_url)
```

Arguments

zoltar_connection	A ‘ZoltarConnection’ object as returned by new_connection
project_url	URL of a project in zoltar_connection’s projects

Value

A 'data.frame' of unit contents for the passed project

Examples

```
## Not run:  
  the_units <- zoltar_units(conn, "https://www.zoltardata.com/project/9/")  
  
## End(Not run)
```

Index

`create_model`, [2](#)
`create_project`, [3](#)

`delete_forecast`, [4](#)
`delete_model`, [4](#)
`delete_project`, [5](#)
`download_forecast`, [6](#)

`forecast_data_from_cdc_csv_file`, [7](#)
`forecast_data_from_cdc_data_frame`, [8](#)
`forecast_info`, [8](#)
`forecasts`, [6](#)

`get_resource`, [9](#)

`model_info`, [10](#)
`models`, [9](#)

`new_connection`, [3–6](#), [8–10](#), [11](#), [12–20](#)

`project_info`, [12](#)
`projects`, [11](#), [11](#)

`scores`, [13](#)

`target_info`, [14](#)
`targets`, [13](#)
`timezero_info`, [15](#)
`timezeros`, [15](#)
`truth`, [16](#)

`unit_info`, [17](#)
`upload_forecast`, [17](#), [18](#)
`upload_info`, [18](#), [19](#)
`upload_info_forecast_url`, [19](#)

`zoltar_authenticate`, [11](#), [20](#)
`zoltar_units`, [20](#)