Package 'fanyi'

April 14, 2024

Title Translate Words or Sentences via Online Translators

Version 0.0.7

Description Useful functions to translate text for multiple languages using online translators.
For example, by translating error messages and descriptive analysis results into a language familiar
to the user, it enables a better understanding of the information, thereby reducing the barri-
ers caused by language.
It offers several helper functions to query gene information to help interpretation of inter-
ested genes (e.g., marker genes, differential expression genes),
and provides utilities to translate 'ggplot' graphics. This package is not affili-
ated with any of the online translators.
The developers do not take responsibility for the invoice it incurs when using this package, espe-
cially for exceeding the free quota.

Depends R (>= 4.2.0)

Imports digest, ggfun (>= 0.1.3), httr2, jsonlite, openssl, purrr,
rentrez, rlang, SSEparser, utils, uuid, yulab.utils (>= 0.1.3)

ByteCompile true

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URL https://github.com/YuLab-SMU/fanyi,
https://www.biorxiv.org/content/10.1101/2023.12.21.572729

BugReports https://github.com/YuLab-SMU/fanyi/issues

Encoding UTF-8

RoxygenNote 7.3.1

NeedsCompilation no

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R **topics documented:**

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  baidu_translate   *translate*

Description

Translate query sentences

Usage

```
baidu_translate(x, from = "en", to = "zh")

bing_translate(x, from = "en", to = "zh")

caiyun_translate(x, from = "auto", to = "zh")

chatglm_translate(x, from = "en", to = "zh")

tencent_translate(x, from = "en", to = "zh")

en2cn(x)

cn2en(x)

translate(x, from = "en", to = "zh")

volcengine_translate(x, from = "en", to = "zh")

youdao_translate(x, from = "en", to = "zh")
```

Arguments

x	query sentences
from	source language, i.e., the language to be translated
to	target language, i.e., the language to be translated into

Details

This function use online translator API (one of Baidu, bing, youdao, volcengine, caiyun, tencent and LLM-powered chatglm) to translate query sentences

Value

the translated sentences

Author(s)

Guangchuang Yu

Examples

```
baidu_translate('hello world')

library(fanyi)
## set your appid and key once in your R session
#
# set_translate_option(appid = 'your_appid', key = 'your_key', source = 'which_translation_service')
#
# translate('hello world', from = 'en', to = 'zh')
```

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fanyi_has_appkey   *fanyi_has_appkey*

Description

test whether there has an appkey setting for the specific source

Usage

```
fanyi_has_appkey(source)
```

Arguments

source   one of the supported translate services

Value

logical value

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gene_summary   *gene_summary*

Description

query gene information from NCBI

Usage

```
gene_summary(entrez)
```

Arguments

entrez   entrez gene IDs

Details

This function query gene information (including gene name, description and summary) from NCBI
Gene database

Value

A data frame containing the information

Author(s)

Guangchuang Yu

Examples

```
## Not run:
gene_summary('1236')

## End(Not run)
```

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get_translate_text   *get_translate_text*

Description

access translated text from online translator response

Usage

```
get_translate_text(response)
```

Arguments

response   return from the online translator

Value

translated text

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name2sci   *name2sci*

Description

convert species common name to scientific name

Usage

```
name2sci(x)
```

Arguments

x   common names

Details

The function query species common name via the NCBI Taxonomy database and return corresponding scientific name

Value

corresponding scientific names

Examples

```
## Not run:
name2sci("tiger")

## End(Not run)
```

---

set_translate_option   *set_translate_option*

Description

set appid and key of translation engine

Usage

```
set_translate_option(
  appid,
  key,
  source = "baidu",
  region = "southeastasia",
  user_dict = NULL,
  user_model = "glm-4"
)
```

Arguments

appid	appid, "bing translate" will not use this input.
key	app key
source	translation engine
region	this is for bing use only, translation engine location, depends on your Azure service setting
user_dict	user defined dictionary ID, only used for 'source = "youdao"'
user_model	selected model used in for 'source = "chatglm"', one of turbo, pro, standard and lite

Details

This function allows users to use their own appid and key

Value

No return value, called for side effects

Author(s)

Guangchuang Yu

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set_translate_source   *set source of online translator service*

Description

This function allows users to set the default source for `translate()` function

Usage

```
set_translate_source(source)
```

Arguments

source   translation engine

Value

No return value, called for side effects

Author(s)

Guangchuang Yu

Examples

```
set_translate_source("baidu")
```

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symbol2entrez   *search_gene*

Description

search genes and return corresponding entrez ids

Usage

```
symbol2entrez(x, organism = "Homo sapiens")

search_gene(x, organism = "Homo sapiens")
```

Arguments

x   terms to search

organism   correpsonding organism of the input terms

Details

This function query genes (e.g., symbols) from NCBI Gene database and return corresponding entrez gene IDs

Value

A data frame with TERM and ENTREZ columns

Author(s)

Guangchuang Yu

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translate_ggplot   *translate_ggplot*

Description

Translate axis label of a ggplot

Usage

```
translate_ggplot(plot, axis = "xy", from = "en", to = "zh")
```

Arguments

plot	a ggplot object to be translated
axis	one of 'x', 'y' or 'xy' to select axis labels to be translated
from	source language, i.e., the language to be translated
to	target language, i.e., the language to be translated into

Details

This function use the `translate()` function to translate axis labels of a ggplot

Value

a translated ggplot object

Author(s)

Guangchuang Yu

ydict   *ydict*

Description

check English word in Youdao dictionary

Usage

```
ydict(word, web = FALSE)
```

Arguments

word	word to check
web	whether open youdao dict in web browser

Value

interpretation from youdao dictionary

Examples

```
## Not run:
ydict('panda')
ydict(tiger) # unquoted word is supported

# if using a word stored in a variable
#
x <- 'panda'
ydict(!!rlang::sym(x))


## End(Not run)
```

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