Package ‘fanyi’

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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 barriers caused by language.

It offers several helper functions to query gene information to help interpretation of interested genes (e.g., marker genes, differential expression genes), and provides utilities to translate 'ggplot' graphics. This package is not affiliated with any of the online translators.

The developers do not take responsibility for the invoice it incurs when using this package, especially 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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- `gene_summary`
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Description

Translate query sentences

Usage

```r
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 uses 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**

```r
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')
```

**Description**

Test whether there is an appkey setting for the specific source.

**Usage**

```r
fanyi_has_appkey(source)
```

**Arguments**

- `source`: one of the supported translate services

**Value**

logical value
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)

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

---

**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**

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

## End(Not run)
```
Description

set appid and key of translation engine

Usage

```r
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
set_translate_source

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")

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 corresponding organism of the input terms
translate_ggplot

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

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
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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