Package 'aRxiv'

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```
Title Interface to the arXiv API
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      a repository of electronic preprints for
      computer science, mathematics, physics, quantitative biology,
      quantitative finance, and statistics.
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arxiv_cats

arXiv subject classifications

Description

arXiv subject classifications: their abbreviations and corresponding descriptions.

Usage

Index

```
data(arxiv_cats)
```

Format

A data frame with five columns: the abbreviations of the subject classifications (category), the field of study, subfield of study (within Physics; NA otherwise), a short description, and a longer description.

Source

```
https://arxiv.org/category_taxonomy
```

Examples

arxiv_cats

arxiv_count

Count number of results for a given search

Description

Count the number of results for a given search. Useful to check before attempting to pull down a very large number of records.

Usage

```
arxiv_count(query = NULL, id_list = NULL)
```

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Arguments

query Search pattern as a string; a vector of such strings is also allowed, in which case

the elements are combined with AND.

id_list arXiv doc IDs, as comma-delimited string or a vector of such strings

Value

Number of results (integer). An attribute "search_info" contains information about the search parameters and the time at which it was performed.

See Also

```
arxiv_search(), query_terms(), arxiv_cats()
```

Examples

```
# count papers in category stat.AP (applied statistics)
arxiv_count(query = "cat:stat.AP")

# count papers by Peter Hall in any stat category
arxiv_count(query = 'au:"Peter Hall" AND cat:stat*')

# count papers for a range of dates
# here, everything in 2013
arxiv_count("submittedDate:[2013 TO 2014]")
```

arxiv_open

Open abstract for results of arXiv search

Description

Open, in web browser, the abstract pages for each of set of arXiv search results.

Usage

```
arxiv_open(search_results, limit = 20)
```

Arguments

```
search\_results \ \ Data \ frame \ of \ search \ results, \ as \ returned \ from \ {\tt arxiv\_search()}.
```

limit Maximum number of abstracts to open in one call.

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Details

There is a delay between calls to utils::browseURL(), with the amount taken from the R option "aRxiv_delay" (in seconds); if missing, the default is 3 sec.

Value

(Invisibly) Vector of character strings with URLs of abstracts opened.

See Also

```
arxiv_search()
```

Examples

```
z <- arxiv_search('au:"Peter Hall" AND ti:deconvolution')
arxiv_open(z)</pre>
```

arxiv_search

The main search function for aRxiv

Description

Allows for progammatic searching of the arXiv pre-print repository.

Usage

```
arxiv_search(
  query = NULL,
  id_list = NULL,
  start = 0,
  limit = 10,
  sort_by = c("submitted", "updated", "relevance"),
  ascending = TRUE,
  batchsize = 100,
  force = FALSE,
  output_format = c("data.frame", "list"),
  sep = "|"
)
```

Arguments

query	Search pattern as a string; a vector of such strings also allowed, in which case the elements are combined with AND.
id_list	arXiv doc IDs, as comma-delimited string or a vector of such strings
start	An offset for the start of search
limit	Maximum number of records to return.

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sort_by How to sort the results (ignored if id_list is provided)

ascending If TRUE, sort in ascending order; else descending (ignored if id_list is pro-

vided)

batchsize Maximum number of records to request at one time force If TRUE, force search request even if it seems extreme output_format Indicates whether output should be a data frame or a list.

sep String to use to separate multiple authors, affiliations, DOI links, and categories,

in the case that output_format="data.frame".

Value

If output_format="data.frame", the result is a data frame with each row being a manuscript and columns being the various fields.

If output_format="list", the result is a list parsed from the XML output of the search, closer to the raw output from arXiv.

The data frame format has the following columns.

[,1]	id	arXiv ID
[,2]	submitted	date first submitted
[,3]	updated	date last updated
[,4]	title	manuscript title
[,5]	summary	abstract
[,6]	authors	author names
[,7]	affiliations	author affiliations
[,8]	link_abstract	hyperlink to abstract
[,9]	link_pdf	hyperlink to pdf
[,10]	link_doi	hyperlink to DOI
[,11]	comment	authors' comment
[,12]	journal_ref	journal reference
[,13]	doi	published DOI
[,14]	primary_category	primary category
[.15]	categories	all categories

The contents are all strings; missing values are empty strings ("").

The columns authors, affiliations, link_doi, and categories may have multiple entries separated by sep (by default, "|").

The result includes an attribute "search_info" that includes information about the details of the search parameters, including the time at which it was completed. Another attribute "total_results" is the total number of records that match the query.

See Also

```
arxiv_count(), arxiv_open(), query_terms(), arxiv_cats()
```

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Examples

```
# search for author Peter Hall with deconvolution in title
z <- arxiv_search(query = 'au:"Peter Hall" AND ti:deconvolution', limit=2)
attr(z, "total_results") # total no. records matching query
z$title

# search for a set of documents by arxiv identifiers
z <- arxiv_search(id_list = c("0710.3491v1", "0804.0713v1", "1003.0315v1"))
# can also use a comma-separated string
z <- arxiv_search(id_list = "0710.3491v1,0804.0713v1,1003.0315v1"))
# Journal references, if available
z$journal_ref

# search for a range of dates (in this case, one day)
z <- arxiv_search("submittedDate:[199701010000 TO 199701012400]", limit=2)</pre>
```

can_arxiv_connect

Check for connection to arXiv API

Description

Check for connection to arXiv API

Usage

```
can_arxiv_connect(max_time = 5)
```

Arguments

max_time

Maximum wait time in seconds

Value

Returns TRUE if connection is established and FALSE otherwise.

Examples

```
can_arxiv_connect(2)
```

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query_terms

arXiv query field terms

Description

Possible terms that correspond to different fields in arXiv searches.

Usage

```
data(query_terms)
```

Format

A data frame with two columns: the term and corresponding description.

Author(s)

Karl W Broman

Source

```
https://arxiv.org/help/api/user-manual.html
```

Examples

query_terms

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