

# Package ‘BERTopic’

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**Title** What the Package Does (One Line, Title Case)

**Version** 0.0.0.9000

**Description** What the package does (one paragraph).

**License** MIT + file LICENSE

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rlang,  
tibble,

**Suggests** Matrix,  
htmltools,  
testthat (>= 3.1.0),

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**LazyData** true

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---

as.data.frame.bertopic\_r  
*Coerce to data.frame*

---

## Description

Coerce to data.frame

## Usage

```
## S3 method for class 'bertopic_r'
as.data.frame(x, ...)
```

## Arguments

x	A "bertopic_r" model.
...	Unused.

## Value

A data.frame equal to [bertopic\\_topics\(\)](#).

---

bertopic\_as\_document\_topic\_matrix

*Coerce to a document-topic probability matrix*


---

### Description

Extract the document-topic probabilities as a matrix. If probabilities were not computed during fitting, returns NULL (with a warning).

### Usage

```
bertopic_as_document_topic_matrix(model, sparse = TRUE, prefix = TRUE)
```

### Arguments

model	A "bertopic_r" model.
sparse	Logical; if TRUE and Matrix is available, returns a sparse matrix.
prefix	Logical; if TRUE, prefix columns as "topic_".

### Value

A matrix or sparse Matrix of size n\_docs x n\_topics, or NULL.

---

bertopic\_available      *Is Python + BERTopic available?*


---

### Description

Is Python + BERTopic available?

### Usage

```
bertopic_available()
```

### Value

logical

---

bertopic_find_topics	<i>Find nearest topics for a query string</i>
----------------------	---

---

### Description

Use `BERTopic.find_topics()` to retrieve the closest topics for a query string. Augments topic IDs/scores with topic labels when available.

### Usage

```
bertopic_find_topics(model, query_text, top_n = 5L)
```

### Arguments

<code>model</code>	A "bertopic_r" model.
<code>query_text</code>	A length-1 character query.
<code>top_n</code>	Number of nearest topics to return.

### Value

A tibble with columns `topic`, `score`, and `label`.

---

bertopic_fit	<i>Fit BERTopic from R</i>
--------------	----------------------------

---

### Description

A high-level wrapper around Python 'BERTopic'. Python dependencies are checked at runtime.

### Usage

```
bertopic_fit(text, embeddings = NULL, ...)
```

### Arguments

<code>text</code>	Character vector of documents.
<code>embeddings</code>	Optional numeric matrix (n_docs x dim). If supplied, passed through to Python.
<code>...</code>	Additional arguments forwarded to <code>bertopic.BERTopic(...)</code> .

### Value

An S3 object of class "bertopic\_r" containing:

- `.py`: the underlying Python model (reticulate object)
- `topics`: integer vector of topic assignments
- `probs`: numeric matrix/data frame of topic probabilities (if available)

### Examples

```
## Not run:
if (reticulate::py_module_available("bertopic")) {
  m <- bertopic_fit(c("a doc", "another doc"))
  print(class(m))
}

## End(Not run)
```

---

bertopic\_get\_document\_info

*Document-level information*

---

### Description

Retrieve document-level information for the provided documents.

### Usage

```
bertopic_get_document_info(model, docs)
```

### Arguments

model	A "bertopic_r" model.
docs	Character vector of documents to query (required).

### Value

A tibble with document-level information.

---

bertopic\_get\_representative\_docs

*Representative documents for a topic*

---

### Description

Retrieve representative documents for a given topic using `BERTopic.get_representative_docs()`. Falls back across signature variants.

### Usage

```
bertopic_get_representative_docs(model, topic_id, top_n = 5L)
```

### Arguments

model	A "bertopic_r" model.
topic_id	Integer topic id.
top_n	Number of representative documents to return.

**Value**

A tibble with columns rank and document. If scores are available in the current BERTopic version, a score column is included.

---

bertopic\_has\_embedding\_model

*Does the model have a usable embedding model?*

---

**Description**

Does the model have a usable embedding model?

**Usage**

```
bertopic_has_embedding_model(model)
```

**Arguments**

model                      A "bertopic\_r" model.

**Value**

Logical; TRUE if embedding\_model is present and not None.

---

bertopic\_load                      *Load a BERTopic model*


---

**Description**

Load a BERTopic model from disk that was saved with [bertopic\\_save\(\)](#).

**Usage**

```
bertopic_load(path)
```

**Arguments**

path                      Path used in [bertopic\\_save\(\)](#) (file or directory).

**Value**

A "bertopic\_r" object with the loaded Python model.

---

bertopic_reduce_topics	<i>Reduce/merge topics</i>
------------------------	----------------------------

---

### Description

Wrapper over Python reduce\_topics, compatible with multiple signatures.

### Usage

```
bertopic_reduce_topics(
    model,
    nr_topics = "auto",
    representation_model = NULL,
    docs = NULL
)
```

### Arguments

model	A "bertopic_r" model.
nr_topics	Target number (integer) or "auto".
representation_model	Optional Python representation model.
docs	Optional character vector of training docs (used if required by backend).

### Value

The input model (invisibly).

---

bertopic_save	<i>Save a BERTopic model</i>
---------------	------------------------------

---

### Description

Save a fitted BERTopic model to disk. Depending on the serialization method, this may produce either a single file (e.g., \*.pkl / \*.pt / \*.safetensors) or a directory bundle. The function does not pre-create the target path; it only ensures the parent directory exists and lets BERTopic decide the layout.

### Usage

```
bertopic_save(
    model,
    path,
    serialization = c("pickle", "safetensors", "pt"),
    save_embedding_model = FALSE,
    overwrite = FALSE
)
```

**Arguments**

model	A "bertopic_r" model.
path	Destination path (file or directory, as required by BERTopic).
serialization	One of "pickle", "safetensors", or "pt". Default "pickle".
save_embedding_model	Logical; whether to include the embedding model. Default FALSE.
overwrite	Logical; if TRUE and the target exists, it will be replaced.

**Value**

Invisibly returns the normalized path.

---

bertopic_self_check	<i>Quick self-check for BERTopic R interface</i>
---------------------	--

---

**Description**

Runs a series of diagnostics:

- Is Python available and which executable is used?
- Is the 'bertopic' module importable and what's its version?
- Minimal round trip: fit -> topics -> transform -> save -> load

**Usage**

```
bertopic_self_check()
```

**Value**

A named list with fields:

- python\_ok (logical)
- python (character; path)
- py\_version (character)
- bertopic\_ok (logical)
- bertopic\_version (character)
- roundtrip\_ok (logical)
- details (character vector of messages)

---

bertopic\_session\_info *Summarize Python/BERTopic session info*

---

**Description**

Summarize Python/BERTopic session info

**Usage**

```
bertopic_session_info()
```

**Value**

A data.frame with key versions and paths

---

bertopic\_set\_embedding\_model  
*Replace or set the embedding model*

---

**Description**

Set a new embedding model on a fitted BERTopic instance. This enables transform() after loading when the embedding model was not saved.

**Usage**

```
bertopic_set_embedding_model(model, embedding_model)
```

**Arguments**

model            A "bertopic\_r" model.

embedding\_model        Either a character identifier (e.g., "all-MiniLM-L6-v2") or a Python embedding model object (e.g., a SentenceTransformer instance).

**Value**

The input model (invisibly).

---

bertopic_set_topic_labels	
	<i>Relabel topics</i>

---

**Description**

Set custom labels for topics. Accepts a named character vector or a data.frame with columns topic and label.

**Usage**

```
bertopic_set_topic_labels(model, labels)
```

**Arguments**

model	A "bertopic_r" model.
labels	A named character vector (names are topic ids) or a data.frame.

**Value**

The input model (invisibly).

---

bertopic_topics	<i>Get topic info as a tibble</i>
-----------------	-----------------------------------

---

**Description**

Get topic info as a tibble

**Usage**

```
bertopic_topics(model)
```

**Arguments**

model	A "bertopic_r" object returned by <a href="#">bertopic_fit()</a> .
-------	--

**Value**

A tibble with topic-level information from Python `get_topic_info()`.

---

```
bertopic_topics_over_time
```

*Compute topics over time*

---

**Description**

Wrapper for Python `BERTopic.topics_over_time()`. Returns a tibble and attaches the original Python dataframe in the `"_py"` attribute for use in visualization.

**Usage**

```
bertopic_topics_over_time(
  model,
  docs,
  timestamps,
  nr_bins = NULL,
  datetime_format = NULL
)
```

**Arguments**

<code>model</code>	A "bertopic_r" model.
<code>docs</code>	Character vector of documents.
<code>timestamps</code>	A vector of timestamps (Date, POSIXt, or character).
<code>nr_bins</code>	Optional number of temporal bins.
<code>datetime_format</code>	Optional strftime-style format if timestamps are strings.

**Value**

A tibble with topics-over-time data; attribute `"_py"` stores the original Python dataframe.

---

```
bertopic_topic_terms
```

*Get top terms for a topic*

---

**Description**

Get top terms for a topic

**Usage**

```
bertopic_topic_terms(model, topic_id, top_n = 10L)
```

**Arguments**

<code>model</code>	A "bertopic_r" model
<code>topic_id</code>	Integer topic id
<code>top_n</code>	Number of top terms to return

**Value**

A tibble with columns term and weight

---

bertopic_transform	<i>Transform new documents with a fitted BERTopic model</i>
--------------------	---

---

**Description**

Transform new documents with a fitted BERTopic model

**Usage**

```
bertopic_transform(model, new_text, embeddings = NULL)
```

**Arguments**

model	A "bertopic_r" model from <a href="#">bertopic_fit()</a> .
new_text	Character vector of new documents.
embeddings	Optional numeric matrix for new documents.

**Value**

A list with topics and probs for the new documents.

---

bertopic_update_topics	<i>Update topic representations</i>
------------------------	-------------------------------------

---

**Description**

Call Python `BERTopic.update_topics()` to recompute topic representations.

**Usage**

```
bertopic_update_topics(model, text)
```

**Arguments**

model	A "bertopic_r" model.
text	Character vector of training documents used in fit.

**Value**

The input model (invisibly), updated in place on the Python side.

---

bertopic\_visualize\_barchart  
*Visualize a topic barchart*

---

### Description

Visualize a topic barchart

### Usage

```
bertopic_visualize_barchart(model, topic_id = NULL, file = NULL)
```

### Arguments

model	A "bertopic_r" model.
topic_id	Integer topic id. If NULL, a set of top topics is shown.
file	Optional HTML output path.

---

bertopic\_visualize\_documents  
*Visualize embedded documents*

---

### Description

Visualize embedded documents

### Usage

```
bertopic_visualize_documents(model, docs = NULL, file = NULL)
```

### Arguments

model	A "bertopic_r" model.
docs	Optional character vector of documents to visualize.
file	Optional HTML output path.

---

`bertopic_visualize_heatmap`*Visualize topic similarity heatmap*

---

**Description**

Visualize topic similarity heatmap

**Usage**

```
bertopic_visualize_heatmap(model, file = NULL)
```

**Arguments**

<code>model</code>	A "bertopic_r" model.
<code>file</code>	Optional HTML output path.

---

`bertopic_visualize_hierarchy`*Visualize hierarchical clustering of topics*

---

**Description**

Visualize hierarchical clustering of topics

**Usage**

```
bertopic_visualize_hierarchy(model, file = NULL)
```

**Arguments**

<code>model</code>	A "bertopic_r" model.
<code>file</code>	Optional HTML output path.

---

`bertopic_visualize_term_rank`*Visualize term rank evolution*

---

**Description**

Visualize term rank evolution

**Usage**

```
bertopic_visualize_term_rank(model, file = NULL)
```

**Arguments**

<code>model</code>	A "bertopic_r" model.
<code>file</code>	Optional HTML output path.

---

bertopic\_visualize\_topics  
*Visualize topic map*

---

### Description

Visualize topic map

### Usage

```
bertopic_visualize_topics(model, file = NULL)
```

### Arguments

model	A "bertopic_r" model.
file	Optional HTML output path. If NULL, returns htmltools::HTML.

---

bertopic\_visualize\_topics\_over\_time  
*Visualize topics over time*

---

### Description

Visualize topics over time

### Usage

```
bertopic_visualize_topics_over_time(  
  model,  
  topics_over_time,  
  top_n = 10L,  
  file = NULL  
)
```

### Arguments

model	A "bertopic_r" model.
topics_over_time	A tibble returned by <a href="#">bertopic_topics_over_time()</a> , or a Python dataframe compatible with <a href="#">visualize_topics_over_time()</a> .
top_n	Number of topics to display.
file	Optional HTML output path.

---

coef.bertopic_r	<i>Coefficients (top terms) for BERTopic</i>
-----------------	--

---

**Description**

Coefficients (top terms) for BERTopic

**Usage**

```
## S3 method for class 'bertopic_r'
coef(object, top_n = 10L, ...)
```

**Arguments**

object	A "bertopic_r" model.
top_n	Number of terms per topic.
...	Unused.

**Value**

A data.frame with columns topic, term, weight.

---

fortify.bertopic_r	<i>Fortify method for ggplot2</i>
--------------------	-----------------------------------

---

**Description**

Fortify method for ggplot2

**Usage**

```
fortify.bertopic_r(model, data, ...)
```

**Arguments**

model	A "bertopic_r" model.
data	Ignored.
...	Unused.

**Value**

A data.frame of document-topic assignments.

---

install_py_deps	<i>Install Python dependencies for BERTopic (user-invoked)</i>
-----------------	--

---

**Description**

This function is never called automatically during installation or load. It creates (or reuses) a virtualenv and installs required Python packages.

**Usage**

```
install_py_deps(env = get_py_env(), python = "python3")
```

**Arguments**

env	Name of the virtualenv to create/use. Defaults to option <code>BERTopic.env</code> .
python	Path to a Python executable (e.g., "python3").

**Value**

Invisibly returns TRUE if installation finishes without error.

---

predict.bertopic_r	<i>Predict method for BERTopic models</i>
--------------------	---

---

**Description**

Predict method for BERTopic models

**Usage**

```
## S3 method for class 'bertopic_r'
predict(
  object,
  newdata,
  type = c("both", "class", "prob"),
  embeddings = NULL,
  ...
)
```

**Arguments**

object	A "bertopic_r" model.
newdata	Character vector of new documents.
type	One of "class", "prob", or "both".
embeddings	Optional numeric matrix of embeddings.
...	Reserved for future arguments.

**Value**

Depending on type, an integer vector, a matrix/data frame, or a list.

---

<code>print.bertopic_r</code>	<i>Print method for bertopic_r</i>
-------------------------------	------------------------------------

---

**Description**

Print method for bertopic\_r

**Usage**

```
## S3 method for class 'bertopic_r'
print(x, ...)
```

**Arguments**

<code>x</code>	A "bertopic_r" object.
<code>...</code>	Unused.

---

<code>set_bertopic_seed</code>	<i>Set random seed for R and Python backends</i>
--------------------------------	--

---

**Description**

Set random seed for R and Python backends

**Usage**

```
set_bertopic_seed(seed)
```

**Arguments**

<code>seed</code>	Integer seed
-------------------	--------------

---

<code>sms_spam</code>	<i>SMS Spam Collection (UCI) - subset for examples</i>
-----------------------	--

---

**Description**

A cleaned subset of the UCI SMS Spam Collection, suitable for quick examples and tests in this package. Each row is an SMS message labeled as "ham" or "spam".

**Usage**

```
sms_spam
```

**Format**

A data frame with two columns:

**label** Character, either "ham" or "spam".

**text** Character, the SMS message content (UTF-8).

**Note**

This dataset is included for educational/demo purposes. If you use it in publications, please cite the original authors and the UCI repository page.

**Source**

UCI Machine Learning Repository: SMS Spam Collection. Dataset page: <https://archive.ics.uci.edu/dataset/228/sms+spam+collection> Original citation: Almeida, T.A., Hidalgo, J.M.G., & Yamakami, A. (2011). Contributions to the Study of SMS Spam Filtering: New Collection and Results.

**Examples**

```
data(sms_spam)
head(sms_spam)
```

---

summary.bertopic_r	<i>Summary for BERTopic models</i>
--------------------	------------------------------------

---

**Description**

Summary for BERTopic models

**Usage**

```
## S3 method for class 'bertopic_r'
summary(object, ...)
```

**Arguments**

object	A "bertopic_r" model.
...	Unused.

**Value**

Invisibly returns a named list of summary fields.

---

use_bertopic_virtualenv	<i>Use a virtualenv for BERTopic (session-scoped)</i>
-------------------------	---

---

**Description**

Use a virtualenv for BERTopic (session-scoped)

**Usage**

```
use_bertopic_virtualenv(env = getOption("BERTopic.env", "r-bertopic"))
```

**Arguments**

env	Virtualenv name. Defaults to option BERTopic.env
-----	--

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