Package ‘wactor’

October 12, 2022

Title Word Factor Vectors
Version 0.0.1
Description A user-friendly factor-like interface for converting strings of text into numeric vectors and rectangular data structures.
Encoding UTF-8
LazyData true
Imports xgboost, tokenizers, text2vec, R6, utils, tibble, ggplot2, stats, Matrix
URL https://github.com/mkearney/wactor
BugReports https://github.com/mkearney/wactor/issues
RoxygenNote 7.0.2
License MIT + file LICENSE
Suggests testthat (>= 2.1.0), covr
NeedsCompilation no
Author Michael W. Kearney [aut, cre] (<https://orcid.org/0000-0002-0730-4694>), Lingshu Hu [ctb] (<https://orcid.org/0000-0003-0304-882X>)
Maintainer Michael W. Kearney <kearneymw@missouri.edu>
Repository CRAN
Date/Publication 2019-12-18 15:30:02 UTC

R topics documented:

as_wactor .................................................. 2
dtm .......................................................... 2
split_test_train ............................................. 3
tfidf ....................................................... 4
wactor ..................................................... 5
Wactr ..................................................... 6
xgb_mat .................................................... 7

Index 8
as_wactor  

**Description**

Convert data into object of type 'wactor'

**Usage**

```r
as_wactor(.x, ...) 
```

**Arguments**

- `.x`  
  Input text vector
- `...`  
  Other args passed to Wactr$new(...)

**Value**

An object of type wactor

---

dtm  

**Description**

Converts character vector into document term matrix (dtm)

**Usage**

```r
dtm(object, .x = NULL) 
```

**Arguments**

- `object`  
  Input object containing dictionary (column), e.g., wactor
- `.x`  
  Text from which the document term matrix will be created

**Value**

A c-style matrix
Examples

```r
## create wactor
w <- wactor(letters)

## use wactor to create dtm of same vector
dtm(w, letters)

## using the initial data is the default; so you don't actually have to
## respecify it
dtm(w)

## use wactor to create dtm on new vector
dtm(w, c("a", "e", "i", "o", "u"))

## apply directly to character vector
dtm(letters)
```

Description

Randomly partition input into a list of train and test data sets

Usage

`split_test_train(.data, .p = 0.8, ...)`

Arguments

- `.data` Input data. If atomic (numeric, integer, character, etc.), the input is first converted to a data frame with a column name of "x."
- `.p` Proportion of data that should be used for the train data set output. The default value is 0.80, meaning the train output will include roughly 80 pct. of the input cases while the test output will include roughly 20 oct..
- `...` Optional. The response (outcome) variable. Uses tidy evaluation (quotes are not necessary). This is only relevant if the identified variable is categorical—i.e., character, factor, logical—in which case it is used to ensure a uniform distribution for the train output data set. If a value is supplied, uniformity in response level observations is prioritized over the `.p` (train proportion) value.

Value

A list with train and test tibbles (data.frames)
**Examples**

```r
## example data frame
d <- data.frame(
  x = rnorm(100),
  y = rnorm(100),
  z = c(rep("a", 80), rep("b", 20))
)

## split using defaults
split_test_train(d)

## split 0.60/0.40
split_test_train(d, 0.60)

## split with equal response level obs
split_test_train(d, 0.80, label = z)

## apply to atomic data
split_test_train(letters)
```

---

**tfidf**

*Term frequency inverse document frequency*

**Description**

Converts character vector into a term frequency inverse document frequency (TFIDF) matrix

**Usage**

```r
tfidf(object, .x = NULL)
```

**Arguments**

- `object` Input object containing dictionary (column), e.g., wactor
- `.x` Text from which the tfidf matrix will be created

**Value**

A c-style matrix

**Examples**

```r
## create wactor
w <- wactor(letters)

## use wactor to create tfidf of same vector
```
tfidf(w, letters)

## using the initial data is the default; so you don't actually have to
## respecify it
    tfidf(w)

## use wactor to create tfidf on new vector
    tfidf(w, c("a", "e", "i", "o", "u"))

## apply directly to character vector
    tfidf(letters)

---

<table>
<thead>
<tr>
<th>wactor</th>
<th>Create wactor</th>
</tr>
</thead>
</table>

**Description**

Create an object of type 'wactor'

**Usage**

    wactor(.x, ...)

**Arguments**

- `.x` Input text vector
- `...` Other args passed to Wacter$new(...)

**Value**

An object of type wactor

**Examples**

    ## create
    w <- wactor(c("a", "a", "a", "b", "b", "c"))

    ## summarize
    summary(w)

    ## plot
    plot(w)

    ## predict
    predict(w)

    ## use on NEW data
    dtm(w, letters[1:5])
## dtm() is the same as predict()
predict(w, letters[1:5])

## works if you specify 'newdata' too
predict(w, newdata = letters[1:5])

---

**Wactr**

A *wactor object*

---

**Description**

A factor-like class for word vectors

**Methods**

**Public methods:**

- `Wactr$new()`
- `Wactr$clone()`

**Method new():**

*Usage:*

```r
Wactr$new(
  text = character(),
  tokenizer = NULL,
  max_words = 1000,
  doc_prop_max = 1,
  doc_prop_min = 0
)
```

*Arguments:*

- `max_words` Maximum number of words in vocabulary
- `doc_prop_max` Maximum proportion of docs for terms in dictionary
- `doc_prop_min` Minimum proportion of docs for terms in dictionary.

**Method clone():** The objects of this class are cloneable with this method.

*Usage:*

```r
Wactr$clone(deep = FALSE)
```

*Arguments:*

- `deep` Whether to make a deep clone.
**Description**

Simple wrapper for creating a xgboost matrix

**Usage**

```
xgb_mat(x, ..., y = NULL, split = NULL)
```

**Arguments**

- `x`: Input data
- `...`: Other data to cbind
- `y`: Label vector
- `split`: Optional number between 0-1 indicating the desired split between train and test

**Value**

A xgb.Dmatrix

**Examples**

```
xgb_mat(data.frame(x = rnorm(20), y = rnorm(20)))
```
Index

as_wactor, 2

dtm, 2

split_test_train, 3

tfidf, 4

wactor, 5

Wactr, 6

xgb_mat, 7