

# Package ‘elbird’

April 19, 2022

**Title** Blazing Fast Morphological Analyzer Based on Kiwi(Korean Intelligent Word Identifier)

**Version** 0.2.3

**Description** This is the R wrapper package Kiwi(Korean Intelligent Word Identifier), a blazing fast speed morphological analyzer for Korean. It supports configuration of user dictionary and detection of unregistered nouns based on frequency.

**License** LGPL (>= 3)

**Encoding** UTF-8

**RoxygenNote** 7.1.2

**URL** <https://github.com/mrchypark/elbird/>

**BugReports** <https://github.com/mrchypark/elbird/issues>

**SystemRequirements** A valid Kiwi installation. Dynamic library is downloaded from <<https://github.com/bab2min/Kiwi/releases>> during the build step. See <<https://github.com/bab2min/Kiwi>> as well as for API documentation. A recent-enough compiler with C++11 support is required. git, curl and cmake required to build from source for kiwi.

**Depends** R (>= 3.5)

**Imports** dplyr, purrr, tibble, R6 (>= 2.4.0), vroom, matchr

**LinkingTo** cpp11

**Suggests** covr, testthat (>= 3.0.0)

**Config/testthat/edition** 3

**NeedsCompilation** yes

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**Repository** CRAN

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analyze	<i>Simple version of analyze function.</i>
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### Description

Simple version of analyze function.

### Usage

```
analyze(text, top_n = 3, match_option = Match$ALL, stopwords = FALSE)
```

### Arguments

text	target text.
top_n	integer: Number of result. Default is 3.
match_option	<b>Match</b> : use Match. Default is Match\$ALL
stopwords	stopwords option. Default is TRUE which is to use embaded stopwords dictionany. If FALSE, use not embaded stopwords dictionany. If char: path of dictionary txt file, use file. If <b>Stopwords</b> class, use it. If not valid value, work same as FALSE. Check <a href="#">analyze()</a> how to use stopwords param.

### Examples

```
## Not run:
analyze("Test text.")
analyze("Please use Korean.", top_n = 1)
analyze("Test text.", 1, Match$ALL_WITH_NORMALIZING)
analyze("Test text.", stopwords = FALSE)
analyze("Test text.", stopwords = TRUE)
analyze("Test text.", stopwords = "user_dict.txt")
analyze("Test text.", stopwords = Stopwords$new(TRUE))

## End(Not run)
```

---

get_model	<i>Get kiwi language model file.</i>
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### Description

Get kiwi language model file.

### Usage

```
get_model(size = "base", path = model_home(), clean = FALSE)
```

### Arguments

size	"small", "base", "large" model. default is "base". Also "all" available.
path	path for model files. default is <code>model_home()</code> .
clean	remove previous model files before get new.

### Source

<https://github.com/bab2min/Kiwi/releases>

### Examples

```
## Not run:  
get_model("small")  
  
## End(Not run)
```

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Kiwi	<i>Kiwi Class</i>
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### Description

Kiwi class is provide method for korean mophological analyze result.

### Methods

#### Public methods:

- `Kiwi$print()`
- `Kiwi$new()`
- `Kiwi$add_user_word()`
- `Kiwi$add_pre_analyzed_words()`
- `Kiwi$add_rules()`
- `Kiwi$load_user_dictionarys()`

- `Kiwi$extract_words()`
- `Kiwi$analyze()`
- `Kiwi$tokenize()`
- `Kiwi$split_into_sents()`
- `Kiwi$get_tidytext_func()`
- `Kiwi$clone()`

**Method** `print()`: print method for Kiwi objects

*Usage:*

```
Kiwi$print(x, ...)
```

*Arguments:*

x self

... ignored

**Method** `new()`: Create a kiwi instance.

*Usage:*

```
Kiwi$new(
  num_workers = 0,
  model_size = "base",
  integrate_allomorph = TRUE,
  load_default_dict = TRUE
)
```

*Arguments:*

`num_workers` int(optional): use multi-thread core number. default is 0 which means use all core.

`model_size` char(optional): kiwi model select. default is "base". "small", "large" is available.

`integrate_allomorph` bool(optional): default is TRUE.

`load_default_dict` bool(optional): use default dictionary. default is TRUE.

**Method** `add_user_word()`: add user word with pos and score

*Usage:*

```
Kiwi$add_user_word(word, tag, score, orig_word = "")
```

*Arguments:*

`word` char(required): target word to add.

`tag` Tags(required): tag information about word.

`score` num(required): score information about word.

`orig_word` char(optional): origin word.

**Method** `add_pre_analyzed_words()`: TODO

*Usage:*

```
Kiwi$add_pre_analyzed_words(form, analyzed, score)
```

*Arguments:*

form char(required): target word to add analyzed result.  
 analyzed data.frame(required): analyzed result expected.  
 score num(required): score information about pre analyzed result.

**Method** add\_rules(): TODO

*Usage:*

```
Kiwi$add_rules(tag, pattern, replacement, score)
```

*Arguments:*

tag Tags(required): target tag to add rules.  
 pattern char(required): regular expression.  
 replacement char(required): replace text.  
 score num(required): score information about rules.

**Method** load\_user\_dictionary(): add user dictionary using text file.

*Usage:*

```
Kiwi$load_user_dictionary(user_dict_path)
```

*Arguments:*

user\_dict\_path char(required): path of user dictionary file.

**Method** extract\_words(): Extract Noun word candidate from texts.

*Usage:*

```
Kiwi$extract_words(
  input,
  min_cnt,
  max_word_len,
  min_score,
  pos_threshold,
  apply = FALSE
)
```

*Arguments:*

input char(required): target text data  
 min\_cnt int(required): minimum count of word in text.  
 max\_word\_len int(required): max word length.  
 min\_score num(required): minimum score.  
 pos\_threshold num(required): pos threshold.  
 apply bool(optional): apply extracted word as user word dict.

**Method** analyze(): Analyze text to token and tag results.

*Usage:*

```
Kiwi$analyze(text, top_n = 3, match_option = Match$ALL, stopwords = FALSE)
```

*Arguments:*

text char(required): target text.  
 top\_n int(optional): number of result. Default is 3.

`match_option` `match_option` **Match**: use Match. Default is Match\$ALL  
`stopwords` `stopwords` option. Default is FALSE which is use nothing. If TRUE, use embaded  
 stopwords dictionary. If `char`: path of dictionary txt file, use file. If **Stopwords** class, use  
 it. If not valid value, work same as FALSE.

*Returns*: list of result.

**Method** `tokenize()`: Analyze text to token and pos result just top 1.

*Usage*:

```
Kiwi$tokenize(
  text,
  match_option = Match$ALL,
  stopwords = FALSE,
  form = "tibble"
)
```

*Arguments*:

`text` `char`(required): target text.

`match_option` `match_option` **Match**: use Match. Default is Match\$ALL

`stopwords` `stopwords` option. Default is FALSE which is use nothing. If TRUE, use embaded  
 stopwords dictionary. If `char`: path of dictionary txt file, use file. If **Stopwords** class, use  
 it. If not valid value, work same as FALSE.

`form` `char`(optional): return form. default is "tibble". "list", "tidytext" is available.

**Method** `split_into_sents()`: Some text may not split sentence by sentence. `split_into_sents`  
 works split sentences to sentence by sentence.

*Usage*:

```
Kiwi$split_into_sents(text, match_option = Match$ALL, return_tokens = FALSE)
```

*Arguments*:

`text` `char`(required): target text.

`match_option` `match_option` **Match**: use Match. Default is Match\$ALL

`return_tokens` `bool`(optional): add tokenized resault.

**Method** `get_tidytext_func()`: set function to tidytext `unnest_tokens`.

*Usage*:

```
Kiwi$get_tidytext_func(match_option = Match$ALL, stopwords = FALSE)
```

*Arguments*:

`match_option` `match_option` **Match**: use Match. Default is Match\$ALL

`stopwords` `stopwords` option. Default is TRUE which is to use embaded stopwords dictionary.  
 If FALSE, use not embaded stopwords dictionary. If `char`: path of dictionary txt file, use  
 file. If **Stopwords** class, use it. If not valid value, work same as FALSE.

*Returns*: function

*Examples*:

```
\dontrun{
  kw <- Kiwi$new()
  tidytoken <- kw$get_tidytext_func()
  tidytoken("test")
}
```

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

*Usage:*

```
Kiwi$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

### Examples

```
## Not run:
kw <- Kiwi$new()
kw$analyze("test")
kw$tokenize("test")

## End(Not run)

## -----
## Method `Kiwi$get_tidytext_func`
## -----

## Not run:
kw <- Kiwi$new()
tidytoken <- kw$get_tidytext_func()
tidytoken("test")

## End(Not run)
```

---

Match

*Analyze Match Options.*

---

### Description

ALL option contains URL, EMAIL, HASHTAG, MENTION.

### Usage

Match

### Format

An object of class EnumGenerator of length 13.

**Examples**

```
## Not run:
  Match
  Match$ALL

## End(Not run)
```

---

model_exists	<i>Verifies if model files exists.</i>
--------------	--

---

**Description**

Verifies if model files exists.

**Usage**

```
model_exists(size = "all")
```

**Arguments**

size                    model size. default is "all" which is true that all three models must be present.

**Value**

logical model files exists or not.

**Examples**

```
## Not run:
  get_model("small")
  model_exists("small")

## End(Not run)
```

---

model_home	<i>A simple exported version of kiwi_model_path() Returns the kiwi model path.</i>
------------	--

---

**Description**

TODO explain ELBIRD\_MODEL\_HOME

**Usage**

```
model_home()
```



**Value**

character: file path

**Examples**

```
model_home()
```

---

model_works	<i>Verifies if models work fine.</i>
-------------	--------------------------------------

---

**Description**

Verifies if models work fine.

**Usage**

```
model_works(size = "all")
```

**Arguments**

size                    model size. default is "all" which is true that all three models must be present.

**Value**

logical model work or not.

**Examples**

```
## Not run:  
get_model("small")  
model_works("small")  
  
## End(Not run)
```

---

split_into_sents	<i>Split Sentences</i>
------------------	------------------------

---

**Description**

Some text may not split sentence by sentence. split\_into\_sents works split sentences to sentence by sentence.

**Usage**

```
split_into_sents(text, return_tokens = FALSE)
```

### Arguments

text            target text.  
return\_tokens   add tokenized result.

### Examples

```
## Not run:  
split_into_sents("text")  
split_into_sents("text", return_tokens = TRUE)  
  
## End(Not run)
```

---

Stopwords

*Stopwords Class*

---

### Description

Stopwords is for filter result.

### Methods

#### Public methods:

- [Stopwords\\$print\(\)](#)
- [Stopwords\\$new\(\)](#)
- [Stopwords\\$add\(\)](#)
- [Stopwords\\$add\\_from\\_dict\(\)](#)
- [Stopwords\\$remove\(\)](#)
- [Stopwords\\$save\\_dict\(\)](#)
- [Stopwords\\$get\(\)](#)
- [Stopwords\\$clone\(\)](#)

**Method** `print()`: print method for Stopwords objects

*Usage:*

```
Stopwords$print(x, ...)
```

*Arguments:*

x self

... ignored

**Method** `new()`: Create a stopwords object for filter stopwords on [analyze\(\)](#) and [tokenize\(\)](#) results.

*Usage:*

```
Stopwords$new(use_system_dict = TRUE)
```

*Arguments:*

`use_system_dict` `bool`(optional): use system stopwords dictionary or not. Default is TRUE.

**Method** `add()`: add stopword one at a time.

*Usage:*

```
Stopwords$add(form = NA, tag = Tags$nnp)
```

*Arguments:*

`form` `char`(optional): Form information. Default is NA.

`tag` `char`(optional): Tag information. Default is "NNP". Please check [Tags](#).

*Examples:*

```
\dontrun{
  sw <- Stopwords$new()
  sw$add("word", "NNG")
  sw$add("word", Tags$nng)
}
```

**Method** `add_from_dict()`: add stopword from text file. text file need to form "TEXT/TAG". TEXT can remove like "/NNP". TAG required like "FORM/NNP".

*Usage:*

```
Stopwords$add_from_dict(path, dict_name = "user")
```

*Arguments:*

`path` `char`(required): dictionary file path.

`dict_name` `char`(optional): default is "user"

**Method** `remove()`: remove stopword one at a time.

*Usage:*

```
Stopwords$remove(form = NULL, tag = NULL)
```

*Arguments:*

`form` `char`(optional): Form information. If form not set, remove tag in input.

`tag` `char`(required): Tag information. Please check [Tags](#).

**Method** `save_dict()`: save current stopwords list in text file.

*Usage:*

```
Stopwords$save_dict(path)
```

*Arguments:*

`path` `char`(required): file path to save stopwords list.

**Method** `get()`: return tibble of stopwords.

*Usage:*

```
Stopwords$get()
```

*Returns:* a [tibble](#) for stopwords options for [analyze\(\)](#) / [tokenize\(\)](#) function.

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

*Usage:*

```
Stopwords$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

**Examples**

```
## Not run:
  Stopwords$new()

## End(Not run)

## -----
## Method `Stopwords$add`
## -----

## Not run:
  sw <- Stopwords$new()
  sw$add("word", "NNG")
  sw$add("word", Tags$nng)

## End(Not run)
```

---

Tags

*Tag list*

---

**Description**

Tags contains tag list for elbird.

**Usage**

Tags

**Format**

An object of class EnumGenerator of length 47.

**Source**

<https://github.com/bab2min/Kiwi>

**Examples**

```
## Not run:
  Tags
  Tags$nnp

## End(Not run)
```

---

tokenize	<i>Simple version of tokenizer function.</i>
----------	--

---

### Description

Simple version of tokenizer function.

### Usage

```
tokenize(text, match_option = Match$ALL, stopwords = TRUE)
```

```
tokenize_tbl(text, match_option = Match$ALL, stopwords = TRUE)
```

```
tokenize_tidytext(text, match_option = Match$ALL, stopwords = TRUE)
```

```
tokenize_tidy(text, match_option = Match$ALL, stopwords = TRUE)
```

### Arguments

text	target text.
match_option	<b>Match:</b> use Match. Default is Match\$ALL
stopwords	stopwords option. Default is TRUE which is to use embaded stopwords dictionany. If FALSE, use not embaded stopwords dictionany. If char: path of dictionary txt file, use file. If <b>Stopwords</b> class, use it. If not valid value, work same as FALSE. Check <a href="#">analyze()</a> how to use stopwords param.

### Value

list type of result.

### Examples

```
## Not run:  
  tokenize("Test text.")  
  tokenize("Please use Korean.", Match$ALL_WITH_NORMALIZING)  
  
## End(Not run)
```

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