

Package ‘cfr’

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Title Generate Citation File Format (‘cff’) Metadata for R Packages

Version 0.2.2

Description The Citation File Format version 1.2.0

<[doi:10.5281/zenodo.5171937](https://doi.org/10.5281/zenodo.5171937)> is a human and machine readable file format which provides citation metadata for software. This package provides core utilities to generate and validate this metadata.

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URL <https://docs.ropensci.org/cffr/>, <https://github.com/ropensci/cffr>

BugReports <https://github.com/ropensci/cffr/issues>

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<code>cff</code>	<i>cff objects</i>
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Description

A class and utility methods for reading, creating and holding CFF information.

Usage

```
cff(path, ...)
```

```
as.cff(x)
```

Arguments

<code>path</code>	The path to a CITATION.cff file.
<code>...</code>	Named arguments to be used for creating a <code>cff</code> object. See Details .
<code>x</code>	a character string for the <code>as.cff</code> default method

Details

This object can be manipulated using `cff_create()`.

Note that this function reads CITATION.cff files. If you want to create cff objects from DESCRIPTION files use `cff_create()`.

If no additional `...` parameters are supplied (the default behavior), a minimal valid cff object is created. Valid parameters are those specified on `cff_schema_keys()`:

valid cff keys
 cff-version

message
type
license
title
version
doi
abstract
authors
preferred-citation
repository
repository-artifact
repository-code
url
date-released
contact
keywords
references
commit
identifiers
license-url

Value

A cfr object. Under the hood, a cfr object is a regular [list](#) object with a special [print\(\)](#) method.

See Also

Other core functions: [cfr_create\(\)](#), [cfr_validate\(\)](#), [cfr_write\(\)](#)

Examples

```
# Blank cfr
cfr()

# From file
cfr(system.file("examples/CITATION_basic.cfr",
  package = "cfr")
))

# Use custom params
test <- cfr(
  title = "Manipulating files",
  keywords = c("A", "new", "list", "of", "keywords"),
  authors = list(cfr_parse_person("New author"))
)
test

# Would fail
cfr_validate(test)
```

```

# Modify with cff_create
new <- cff_create(test, keys = list(
  "cff-version" = "1.2.0",
  message = "A blank file"
))
new

# Would pass
cff_validate(new)

# Convert a list to "cff" object
cffobj <- as.cff(list(
  "cff-version" = "1.2.0",
  title = "Manipulating files"
))

class(cffobj)

# Nice display thanks to yaml package
cffobj

```

 cff_create

 Create cff object

Description

Create a `cff` object from a given source for further manipulation. Similar to `cff_write()`, but returns a object rather than writing directly to a file. See **Examples**.

Usage

```

cff_create(
  x,
  keys = list(),
  cff_version = "1.2.0",
  gh_keywords = TRUE,
  dependencies = TRUE
)

```

Arguments

- `x` The source that would be used for generating the `cff` object. It could be:
- A missing value. That would retrieve the DESCRIPTION file on your in-development package.
 - An existing `cff` object,

	<ul style="list-style-type: none"> • The name of an installed package ("jsonlite"), or • Path to a DESCRIPTION file ("*/DESCRIPTION*").
keys	List of additional keys to add to the <code>cffi</code> object. See Details .
cffi_version	The Citation File Format schema version that the CITATION.cffi file adheres to for providing the citation metadata.
gh_keywords	Logical TRUE/FALSE. If the package is hosted on GitHub, would you like to add the repo topics as keywords?
dependencies	Logical TRUE/FALSE. Would you like to add the of your package to the reference key?

Details

It is possible to add additional keys not detected by `cffi_create()` using the `keys` argument. A list of valid keys can be retrieved with `cffi_schema_keys()`.

Please refer to [Guide to Citation File Format schema version 1.2.0](#). for additional details.

If `x` is a path to a DESCRIPTION file or `inst/CITATION`, is not present on your package, `cffi` would auto-generate a preferred-citation key using the information provided on that file. On

Value

A `cffi` list object.

See Also

[Guide to Citation File Format schema version 1.2.0](#).

`vignette("cffi", "cffi")`

Other core functions: `cffi_validate()`, `cffi_write()`, `cffi()`

Examples

```
# Installed package
cffi_create("jsonlite")

# Demo file
demo_file <- system.file("examples/DESCRIPTION_basic", package = "cffi")
cffi_create(demo_file)

# Add additional keys

newkeys <- list(
  message = "This overwrites fields",
  abstract = "New abstract",
  keywords = c("A", "new", "list", "of", "keywords"),
  authors = list(cffi_parse_person("New author"))
)

cffi_create(demo_file, keys = newkeys)
```

```

# Update a field on a list - i,e: authors, contacts, etc.
# We are adding a new contact here

old <- cff_create(demo_file)

new_contact <- append(
  old$contact,
  list(
    cff_parse_person(person(
      given = "I am",
      family = "New Contact"
    ))
  )
)

cff_create(demo_file, keys = list("contact" = new_contact))

```

cff_extract_to_bibtex *Create BibTeX entries from a package*

Description

Extract the information of a package to BibTeX. This is done by creating a `cff` object with `cff_create()` and extracting the corresponding entries with `cff_to_bibtex()`.

Usage

```
cff_extract_to_bibtex(x, what = "preferred")
```

Arguments

- | | |
|-------------------|--|
| <code>x</code> | <p>The source that would be used for generating the <code>cff</code> object. It could be:</p> <ul style="list-style-type: none"> • A missing value. That would retrieve the DESCRIPTION file on your in-development package. • An existing <code>cff</code> object, • The name of an installed package (<code>"jsonlite"</code>), or • Path to a DESCRIPTION file (<code>"*/DESCRIPTION*"</code>). |
| <code>what</code> | <p>Fields to extract. The value could be:</p> <ul style="list-style-type: none"> • <code>preferred</code>: This would create a single entry with the main citation info of the package. • <code>references</code>: Extract all the entries on references. • <code>all</code>: A combination of the previous two options. This would extract both the preferred citation info and the references. |

Value

A bibentry object or a list of bibentry objects. This could be parsed to BibTeX using [toBibtex\(\)](#)

See Also

Other bibtex: [cffi_to_bibtex\(\)](#), [encoded_utf_to_latex\(\)](#), [write_bib\(\)](#)

Examples

```
jsonvalidate <- cffi_extract_to_bibtex("jsonvalidate")  
  
jsonvalidate  
  
toBibtex(jsonvalidate)  
  
lite <- cffi_extract_to_bibtex("jsonlite", "references")  
  
lite  
  
toBibtex(lite)
```

cffi_gha_update

Install a cffi GitHub Action

Description

This function would install a GitHub Action on your repo. The action will update your CITATION.cff when any of these events occur:

- You publish a new release of the package.
- Your DESCRIPTION or inst/CITATION are modified.
- The action can be run also manually.

Usage

```
cffi_gha_update(path = ".", overwrite = FALSE)
```

Arguments

path	Project directory
overwrite	If already present, do you want to overwrite your action?

Details

Triggers on your action can be modified, see [Events that trigger workflows](#).

Value

Invisible, this function is called by its side effects.

See Also

Other git: [cff_git_hook](#)

Examples

```
## Not run:  
cff_gha_update()  
  
## End(Not run)
```

cff_git_hook

Use a git pre-commit hook [**Experimental**]

Description

Install a **pre-commit hook** that remembers you to update your CITATION.cff file.

Usage

```
cff_git_hook_install()  
  
cff_git_hook_remove()
```

Details

This function would install a pre-commit hook using `usethis::use_git_hook()`.

A pre-commit hook is a script that identifies simple issues before submission to code review. This pre-commit hook would warn you if any of the following conditions are met:

- You included in a commit your DESCRIPTION or inst/CITATION file, you are not including your CITATION.cff and the CITATION.cff file is "older" than any of your DESCRIPTION or inst/CITATION file, or
- You have updated your CITATION.cff but you are not including it on your commit.

Value

Invisible. This function is called for its side effects.

A word of caution

The pre-commit hook may prevent you to commit if you are not updating your CITATION.cff. However, the mechanism of detection is not perfect and would be triggered also even if you have tried to update your CITATION.cff file.

This is typically the case when you have updated your DESCRIPTION or inst/CITATION files but those changes doesn't make a change on your CITATION.cff file (i.e. you are including new dependencies).

In those cases, you can override the check running `git commit --no-verify` on the Terminal tab. If you are using RStudio you can run also this command from a R script by selecting that line and sending it to the Terminal using:

- `Ctrl+Alt+Enter` (Windows & Linux), or
- `Cmd+Option+Return` (Mac).

Removing the git pre-commit hook

You can remove the pre-commit hook by running `cffi_git_hook_remove()`.

See Also

[usethis::use_git_hook\(\)](#), [usethis::use_git\(\)](#)

Other git: [cffi_gha_update\(\)](#)

Examples

```
## Not run:  
cffi_git_hook_install()  
  
## End(Not run)
```

`cffi_parse_citation` *Parse a bibentry to cff*

Description

Parse a bibentry object to a valid format for a CITATION.cff file.

Usage

```
cffi_parse_citation(bib)
```

Arguments

`bib` A bibentry object, either created with [bibentry\(\)](#) (preferred) or [citEntry\(\)](#).

Details

This is a helper function designed to help on adding or replacing the auto-generated authors of the package. See **Examples**.

This function tries to adapt a bibentry object (generated with `bibentry()` or `citEntry()`) to the CFF standard.

Entry types considered:

- **Article, Book, Booklet, InBook, InCollection, InProceedings, Manual, MastersThesis, Misc, PhDThesis, Proceedings, TechReport, Unpublished.** See `bibentry()` for more information.

Note that **Conference** is not implemented in `bibentry()`, however is equivalent to **InProceedings** (Patashnik (1988)).

Fields considered:

- **address, author, booktitle, chapter, edition, editor, howpublished, institution, journal, key, month, note, number, organization, pages, publisher, school, series, title, type, year.**

annotate and **crossref** fields are ignored.

Value

A `cff` object ready to be used on `cff_create()`.

References

- Patashnik, Oren. "BIBTEXTING" February 1988. <https://osl.ugr.es/CTAN/biblio/bibtex/base/btxdoc.pdf>.
- Haines, R., & The Ruby Citation File Format Developers. (2021). *Ruby CFF Library (Version 0.9.0)* (Computer software). doi: [10.5281/zenodo.1184077](https://doi.org/10.5281/zenodo.1184077).

See Also

`cff_create()`, `vignette("cffr", "cffr")`, `bibentry()`

Other parsers: `cff_parse_person()`

Examples

```
bib <- citation("base")
bib

# To cff
bib_to_cff <- cff_parse_citation(bib)
bib_to_cff

# Create the object
new_cff <- cff()
```

```
full <- cffi_create(new_cffi, keys = list("preferred-citation" = bib_to_cffi))

full
# Validate
cffi_validate(full)

# Several citations

cffi_parse_citation(citation("rmarkdown"))
```

cffi_parse_person *Parse a person to cffi*

Description

Parse a person or string to a valid format for a CITATION.cffi file. This is a helper function designed to help on adding or replacing the auto-generated authors of the package.

Usage

```
cffi_parse_person(person)

cffi_parse_person_bibtex(person)
```

Arguments

person A person object created with `person()` or a character string. See **Details**.

Details

The person parameter of the function could be:

- For `cffi_parse_person()`: A person object or a character coercible to person. See `person()` for details.
- For `cffi_parse_person_bibtex()`: A string with the definition of an author or several authors, using the standard BibTeX notation. See Markey (2007) for a full explanation.

See **Examples** for more information.

Value

A cffi object ready to be used on `cffi_create()`.

References

- Patashnik, Oren. "BIBTEXTING" February 1988. <https://osl.ugr.es/CTAN/biblio/bibtex/base/btxdoc.pdf>.
- Markey, Nicolas. "Tame the BeaST." *The B to X of BibTeX, Version 1.4* (October 2007). https://osl.ugr.es/CTAN/info/bibtex/tamethebeast/ttb_en.pdf.

See Also

`cff_create()`, `vignette("cfr", "cfr")`, `utils::person()`

Other parsers: `cff_parse_citation()`

Examples

```
# Parse a person object

cff_parse_person(person(
  given = "First",
  family = "Author",
  role = c("aut", "cre"),
  email = "first.last@example.com",
  comment = c(
    ORCID = "0000-0001-8457-4658",
    affiliation = "An affiliation"
  )
))

# Parse a string

cff_parse_person("Julio Iglesias <fake@email.com>")

# Several persons
persons <- c(person("Clark", "Kent"), person("Lois", "Lane"))

cff_parse_person(persons)

# Or you can use BibTeX style if you prefer

x <- "Frank Sinatra and Dean Martin and Davis, Jr., Sammy and Joey Bishop"

cff_parse_person_bibtex(x)

cff_parse_person_bibtex("Herbert von Karajan")
```

cff_schema

Schema utils

Description

Helper functions with the valid values of different fields, according to the [Citation File Format schema version 1.2.0](#).

- `cff_schema_keys()` provides the valid high-level keys of the Citation File Format.
- `cff_schema_keys_license()` provides the valid [SPDX license identifier\(s\)](#) to be used on the CITATION.cff file.
- `cff_schema_definitions_person()` and `cff_schema_definitions_entity()` returns the valid fields to be included when defining a person or entity.

- `cff_schema_definitions_refs()` provides the valid keys to be used on the preferred-citation and references keys.

Usage

```
cff_schema_keys(sorted = FALSE)
cff_schema_keys_license()
cff_schema_definitions_person()
cff_schema_definitions_entity()
cff_schema_definitions_refs()
```

Arguments

`sorted` Logical TRUE/FALSE. Should the keys be arranged alphabetically?

Value

A vector of characters with the names of the valid keys to be used on a Citation File Format version 1.2.0

Source

[Guide to Citation File Format schema version 1.2.0.](#)

Examples

```
cff_schema_keys(sorted = TRUE)
# Valid Licenses keys
head(cff_schema_keys_license(), 20)
cff_schema_definitions_person()
cff_schema_definitions_entity()
cff_schema_definitions_refs()
```

cff_to_bibtex

Create a BibTeX entry from a CITATION file or a cff object

Description

Creates a bibentry object (`bibentry()`) from a cff object

Usage

```
cff_to_bibtex(x)
```

Arguments

- x
- The source that would be used for generating the `cff` object. It could be:
- An existing `cff` object,
 - A `CITATION.cff` file.

Value

A bibentry object that can be parsed to BibTeX format with `toBibtex()`

References

- Patashnik, Oren. "BIBTEXTING" February 1988. <https://osl.ugr.es/CTAN/biblio/bibtex/base/btxdoc.pdf>.
- Haines, R., & The Ruby Citation File Format Developers. (2021). *Ruby CFF Library (Version 0.9.0)* (Computer software). doi: [10.5281/zenodo.1184077](https://doi.org/10.5281/zenodo.1184077).

See Also

[cff_parse_citation\(\)](#), [bibentry\(\)](#), [toBibtex\(\)](#)

Other bibtex: [cff_extract_to_bibtex\(\)](#), [encoded_utf_to_latex\(\)](#), [write_bib\(\)](#)

Examples

```
# From a cff object
package <- cff_create("rmarkdown")

obj <- cff_to_bibtex(package)

obj

toBibtex(obj)
```

`cff_validate`

Validate a CITATION.cff file or a cff object

Description

Validate a `CITATION.cff` file or a `cff` object created with `cff_create()` using the corresponding validation `schema.json`.

Usage

```
cffi_validate(x = "CITATION.cffi", verbose = TRUE)
```

Arguments

x	This is expected to be either a <code>cffi</code> object created with <code>cffi_create()</code> or the path to a CITATION.cffi file to be validated.
verbose	Logical TRUE/FALSE. On TRUE the function would display informative messages.

Value

A message indicating the result of the validation and an invisible value TRUE/FALSE.

See Also

[Guide to Citation File Format schema version 1.2.0.](#)

Other core functions: `cffi_create()`, `cffi_write()`, `cffi()`

Examples

```
# Full .cffi example
cffi_validate(system.file("examples/CITATION_complete.cffi", package = "cffi"))

# Validate a cffi object
cffi <- cffi_create("jsonlite")
class(cffi)
cffi_validate(cffi)

## Not run:
# .cffi with errors
cffi_validate(system.file("examples/CITATION_error.cffi", package = "cffi"))
# If a CITATION file (note that is not .cffi) it throws an error
cffi_validate(system.file("CITATION", package = "cffi"))

## End(Not run)
```

cffi_write

Write a CITATION.cffi file

Description

This is the core function of the package and likely to be the only one you would need when developing a package.

This function writes out a CITATION.cffi file for a given package. This function is basically a wrapper around `cffi_create()` to both create the `cffi` object and writes it out to a YAML-formatted file in one command.

Usage

```

cff_write(
  x,
  outfile = "CITATION.cff",
  keys = list(),
  cff_version = "1.2.0",
  gh_keywords = TRUE,
  dependencies = TRUE,
  validate = TRUE,
  verbose = TRUE
)

```

Arguments

x	The source that would be used for generating the CITATION.cff file. It could be: <ul style="list-style-type: none"> • A missing value. That would retrieve the DESCRIPTION file on your in-development package. • A <code>cff</code> object, • The name of an installed package ("jsonlite"), or • Path to a DESCRIPTION file ("*/DESCRIPTION*").
outfile	The name and path of the CITATION.cff to be created.
keys	List of additional keys to add to the <code>cff</code> object. See <code>cff_create()</code> for details and examples.
cff_version	The Citation File Format schema version that the CITATION.cff file adheres to for providing the citation metadata.
gh_keywords	Logical TRUE/FALSE. If the package is hosted on GitHub, would you like to add the repo topics as keywords?
dependencies	Logical TRUE/FALSE. Would you like to add the of your package to the reference key?
validate	Logical TRUE/FALSE. Should the new file be validated using <code>cff_validate()</code> ?
verbose	Logical TRUE/FALSE. On TRUE the function would display informative messages.

Details

When creating and writing a CITATION.cff for the first time, the function adds "CITATION.cff" to ".Rbuildignore".

Value

A CITATION.cff file and an (invisible) `cff` object.

See Also

[Guide to Citation File Format schema version 1.2.0.](#)

Other core functions: `cff_create()`, `cff_validate()`, `cff()`

Examples

```
tmpfile <- tempfile(fileext = ".cff")
cff_obj <- cff_write("jsonlite", outfile = tmpfile)

cff_obj

# Force clean-up
file.remove(tmpfile)
```

cran_to_spdx

Mapping between License fields and SPDX

Description

A dataset containing the mapping between the License strings observed on CRAN packages and its (approximate) match on the [SPDX License List](#).

Usage

```
cran_to_spdx
```

Format

A data frame with 91 rows and 2 variables:

- LICENSE: A valid License string on CRAN.
- SPDX. A valid SPDX License Identifier.

Source

<https://spdx.org/licenses/>

See Also

Writing R Extensions, [Licensing section](#).

Examples

```
data("cran_to_spdx")

head(cran_to_spdx, 20)
```

`write_bib`*Create a .bib file*

Description

Creates a .bib file from a bibentry object(s)

Usage

```
write_bib(x, file = NULL, append = FALSE, verbose = TRUE, ascii = FALSE)
```

Arguments

<code>x</code>	A bibentry object created with: <ul style="list-style-type: none">• <code>cff_extract_to_bibtex()</code>, <code>cff_to_bibtex()</code>• <code>citation()</code> or <code>bibentry()</code>
<code>file</code>	Name of the file. If NULL it would display the lines to be written.
<code>append</code>	Whether to append the entries to an existing file or not.
<code>verbose</code>	Display informative messages
<code>ascii</code>	Whether to write the entries using ASCII characters only or not.

Details

For security reasons, if the file already exists the function would create a backup copy on the same directory.

See Also

`knitr::write_bib()` and the following packages:

- `bibtex` package.
- `RefManageR` package.
- `rbibutils`

Other bibtex: `cff_extract_to_bibtex()`, `cff_to_bibtex()`, `encoded_utf_to_latex()`

Examples

```
bib <- bibentry("Misc",
  title = "My title",
  author = "Fran Pérez"
)

write_bib(bib)

write_bib(bib, ascii = TRUE)
```

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