Package 'actiread'

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Type Package

Title Baseline Package for Reading Actigraphy and Activity Data

Version 0.2.0

Description Provides baseline functions for reading actigraphy and activity data, relying on baseline functions from 'actibase'. Reads data from 'Axivity' 'CWA' <https://axivity.com/> , ActiGraph 'GT3X' <https://ametris.com/actigraph-wgt3x-bt>, 'SensorLog' <https://sensorlog.berndthomas.net/>, and 'SensorLogger' <https://www.tszheichoi.com/sensorlogger> zipped CSV files.

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Depends R (>= 2.10)

Suggests testthat, utils, covr, knitr, rmarkdown

Encoding UTF-8

VignetteBuilder knitr

Imports actibase, GGIRread, read.gt3x (>= 0.2.0), R.utils, magrittr, dplyr, lubridate, assertthat, cli, tibble, janitor, purrr, readr, methods

URL https://jhuwit.github.io/actiread/

BugReports https://github.com/jhuwit/actiread/issues

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Contents

acti_convert_sensorlogger_time 2
acti_example_gt3x 2
acti_read_cwa 3
acti_read_gt3x 4
acti_read_sensorlog 5
acti_rewrite_sensorlog_csv 6
acti_sensorlogger_location_colnames_mapping 7
tzoffset_to_tz 8

Index **9**

`acti_convert_sensorlogger_time` *Convert vectors ensuring no new NA*

Description

Convert vectors ensuring no new NA

Usage

```
acti_convert_sensorlogger_time(x)
```

Arguments

x	a vector

Value

A converted ‘vector‘ the same length as ‘x‘ or errors if there are introduced NAs.

`acti_example_gt3x` *Activity/Actigraphy Example Data*

Description

Activity/Actigraphy Example Data

Usage

```
acti_example_gt3x()

acti_example_cwa()

acti_example_sensorlog_file()

acti_example_sensorlogger_file()

acti_example_sensorlogger_location_file()
```

Value

A file path

Examples

```
library(actiread)
acti_example_gt3x()
acti_example_cwa()
acti_example_sensorlogger_file()
```

---

acti_read_cwa *Read CWA File*

Description

Read CWA File

Usage

```
acti_read_cwa(
  path,
  start = 0,
  end = Inf,
  tz = "UTC",
  ...,
  apply_tz = TRUE,
  verbose = TRUE
)
```

Arguments

path	Path to cwa file
start	where to start in the file, passed to GGIRread::readAxivity
end	where to end in the file, passed to GGIRread::readAxivity

tz	time zone for the data time, passed to desiredtz argument in GGIRread::readAxivity. If NULL or "", no time conversion is done.
...	additional arguments to pass to GGIRread::readAxivity()
apply_tz	turn the time column into a POSIXct and apply the timezone
verbose	print diagnostic messages, higher values = more verbosity.

Value

A tibble with attributes of a header, sample rate, and transformations

Examples

```
data = acti_read_cwa(acti_example_cwa())
data = acti_read_cwa(
  acti_example_cwa(),
  tz = NULL,
  apply_tz = FALSE,
  verbose = FALSE
)
```

---

acti_read_gt3x *Read GT3X file*

Description

Read GT3X file

Usage

```
acti_read_gt3x(
  path,
  asDataFrame = TRUE,
  imputeZeroes = TRUE,
  verbose = TRUE,
  ...,
  fill_zeroes = TRUE,
  apply_tz = FALSE,
  check_attributes = TRUE,
  tz = "GMT"
)

acti_info_gt3x(path, ...)
```

Arguments

path	Path to gt3x file
asDataFrame	convert to an activity_df, see as.data.frame.activity
imputeZeroes	Impute zeros in case there are missingness? Default is FALSE, in which case the time series will be incomplete in case there is missingness.
verbose	print diagnostic messages, higher values = more verbosity.
...	additional arguments to pass to read.gt3x::read.gt3x()
fill_zeroes	Rows with all zeros will be filled in with the last observation carried forward as is done with ActiLife. Recommended
apply_tz	Apply the timezone from the header TimeZone attribute, if available
check_attributes	Check that the attributes are included This is a sanity check, including checking that sample_rate is in the attributes.
tz	timezone to project the data into. The data read in via read.gt3x::read.gt3x() says the timezone is GMT, but the time values is in the native timezone. So this data is projected into the correct time zone and then forced into the timezone given by tz. Set to NULL to not apply this forcing.

Value

A data.frame

Examples

```
library(actiread)
data = acti_read_gt3x(acti_example_gt3x())
data = acti_read_gt3x(
  acti_example_gt3x(),
  tz = NULL,
  apply_tz = FALSE,
  verbose = FALSE,
  fill_zeroes = FALSE
)
info = acti_info_gt3x(acti_example_gt3x())
```

---

acti_read_sensorlog *Read SensorLog Data*

Description

Read SensorLog Data

Usage

```
acti_read_sensorlog(file, verbose = FALSE, robust = FALSE)

acti_sensorlog_csv_spec()

acti_sensorlog_csv_colnames_mapping()
```

Arguments

file	A character vector of SensorLog files, usually from unzipping the file
verbose	print diagnostic messages. Either logical or integer, where higher values are higher levels of verbosity.
robust	if TRUE then acti_rewrite_sensorlog_csv is run on the data to try to fix any shifts with the data.

Value

A data.frame of data

Examples

```
library(actiread)
file = acti_example_sensorlog_file()
df = acti_read_sensorlog(file)
head(df)
```

---

acti_rewrite_sensorlog_csv

Rewrite a CSV that may have issues with export from SensorLog

---

Description

Rewrite a CSV that may have issues with export from SensorLog

Usage

```
acti_rewrite_sensorlog_csv(
  file,
  outfile = tempfile(fileext = ".csv"),
  verbose = FALSE
)
```

Arguments

file	Input CSV file
outfile	Output CSV file
verbose	Print Diagnostic messages

Value

A file path to the new CSV

Examples

```
sl_file = actiread::acti_example_sensorlog_file()
tfile = tempfile()
files = utils::unzip(sl_file, exdir = tfile)
result = actiread::acti_rewrite_sensorlog_csv(files)
```

---

acti_sensorlogger_location_colnames_mapping
Read SensorLogger Data

Description

Read SensorLogger Data

Usage

```
acti_sensorlogger_location_colnames_mapping()

acti_sensorlogger_location_spec()

acti_read_sensorlogger_location(file, ...)

acti_read_sensorlogger(file, verbose = FALSE, ...)

acti_read_sensorlogger_general(file, ..., verbose = FALSE)
```

Arguments

file	A character vector of SensorLogger files, usually from unzipping the file, or a zip file of SensorLogger files
...	additional arguments to pass to readr::read_csv(). If verbose = FALSE, then progress = FALSE and show_col_types = FALSE, unless otherwise overridden
verbose	print diagnostic messages. Either logical or integer, where higher values are higher levels of verbosity.

Value

A data.frame of data

`tzoffset_to_tz` *Transform timezone offset to timezone*

Description

Transform timezone offset to timezone

Usage

```
tzoffset_to_tz(x)
```

Arguments

x	A character vector

Value

A character vector

Examples

```
tzoffset_to_tz(c("+00:00", "-05:00", "+01:00"))
```

Index

acti_convert_sensorlogger_time, 2
acti_example_cwa *(*acti_example_gt3x*)*, 2
acti_example_gt3x, 2
acti_example_sensorlog_file
        *(*acti_example_gt3x*)*, 2
acti_example_sensorlogger_file
        *(*acti_example_gt3x*)*, 2
acti_example_sensorlogger_location_file
        *(*acti_example_gt3x*)*, 2
acti_info_gt3x *(*acti_read_gt3x*)*, 4
acti_read_cwa, 3
acti_read_gt3x, 4
acti_read_sensorlog, 5
acti_read_sensorlogger
        *(*acti_sensorlogger_location_colnames_mapping*)*,
        7
acti_read_sensorlogger_general
        *(*acti_sensorlogger_location_colnames_mapping*)*,
        7
acti_read_sensorlogger_location
        *(*acti_sensorlogger_location_colnames_mapping*)*,
        7
acti_rewrite_sensorlog_csv, *6*, 6
acti_sensorlog_csv_colnames_mapping
        *(*acti_read_sensorlog*)*, 5
acti_sensorlog_csv_spec
        *(*acti_read_sensorlog*)*, 5
acti_sensorlogger_location_colnames_mapping,
        7
acti_sensorlogger_location_spec
        *(*acti_sensorlogger_location_colnames_mapping*)*,
        7

GGIRread::readAxivity, *3*, *4*
GGIRread::readAxivity(), *4*

read.gt3x::read.gt3x(), *5*
readr::read_csv(), *7*

tzoffset_to_tz, 8