

# Package ‘rgeopat2’

October 14, 2022

**Title** Additional Functions for 'GeoPAT' 2

**Version** 0.3.9

**Description** Supports analysis of spatial data processed with the 'GeoPAT' 2 software <<http://sil.uc.edu/cms/index.php?id=geopat2>>. Available features include creation of a grid based on the 'GeoPAT' 2 grid header file and reading a 'GeoPAT' 2 text outputs.

**Depends** R (>= 3.3.0)

**Imports** readr, sf, stringr

**License** MIT + file LICENSE

**Encoding** UTF-8

**LazyData** true

**RoxygenNote** 7.0.2

**Suggests** covr, testthat

**URL** <https://github.com/Nowosad/rgeopat2>

**BugReports** <https://github.com/Nowosad/rgeopat2/issues>

**NeedsCompilation** no

**Author** Jakub Nowosad [aut, cre] (<<https://orcid.org/0000-0002-1057-3721>>),  
Space Informatics Lab [cph]

**Maintainer** Jakub Nowosad <nowosad.jakub@gmail.com>

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british_isles	<i>British Isles</i>
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**Description**

A dataset containing the British Isles outline map

**Usage**

```
british_isles
```

**Format**

An object of class sf (inherits from data.frame) with 1 rows and 1 columns.

**Source**

The rnatualearth package

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gpat_create_grid	<i>Grid polygon creator</i>
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**Description**

Creates a polygon of a GeoPAT 2 grid based on the grid header

**Usage**

```
gpat_create_grid(x, brick = FALSE)
```

**Arguments**

x	A filepath to the GeoPAT 2 grid header file
brick	TRUE/FALSE; should a new grid polygon have a brick topology

**Value**

sf

**Examples**

```
header_filepath = system.file("rawdata/Augusta2011_grid100.hdr", package="rgeopat2")
my_grid = gpat_create_grid(header_filepath)
my_grid_brick = gpat_create_grid(header_filepath, brick = TRUE)

plot(my_grid)
plot(my_grid_brick, add = TRUE, border = "red", lwd = 3)
```

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`gpat_header_parser`      *Parse a header of a GeoPAT 2 grid file*

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**Description**

Extracts basic information from a geoPAT 2 grid header file

**Usage**

`gpat_header_parser(x)`

**Arguments**

`x`                      A filepath to the GeoPAT 2 grid header file

**Value**

`data_frame`

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`gpat_read_distmtx`      *Read a GeoPAT distance matrix*

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**Description**

Read a GeoPAT distance matrix into R

**Usage**

`gpat_read_distmtx(x)`

**Arguments**

`x`                      A filepath to the geoPAT 2 distance matrix file

**Value**

`dist`

**Examples**

```
distmtx_filepath = system.file("rawdata/Augusta2011_matrix_grid.csv", package="rgeopat2")
my_distmtx = gpat_read_distmtx(distmtx_filepath)
```

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gpat_read_txt	<i>Read a GeoPAT 2 text output</i>
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## Description

Read a text output of the GeoPAT 2 functions into R

## Usage

```
gpat_read_txt(x, signature = NULL)
```

## Arguments

x	A filepath to the GeoPAT 2 text file
signature	A signature used to create the GeoPAT 2 text output (supported signatures: "lind", "linds", "ent", and "ts")

## Value

data.frame

## Examples

```
polygon_filepath = system.file("rawdata/Augusta2011_polygon.txt", package = "rgeopat2")
my_polygon = gpat_read_txt(polygon_filepath)

points_filepath = system.file("rawdata/Augusta2011_points.txt", package = "rgeopat2")
my_points = gpat_read_txt(points_filepath)

lind_filepath = system.file("rawdata/Augusta2011_lind.txt", package = "rgeopat2")
my_lind = gpat_read_txt(lind_filepath, signature = "lind")

linds_filepath = system.file("rawdata/Augusta2011_linds.txt", package = "rgeopat2")
my_linds = gpat_read_txt(linds_filepath, signature = "linds")

grid_filepath = system.file("rawdata/Augusta2011_grid100.txt", package = "rgeopat2")
my_grid = gpat_read_txt(grid_filepath)

gridlinds_filepath = system.file("rawdata/Augusta2011_grid_linds.txt", package = "rgeopat2")
my_grid = gpat_read_txt(gridlinds_filepath, signature = "linds")

gridts_filepath = system.file("rawdata/barent_ts_grd.txt", package = "rgeopat2")
my_gridts = gpat_read_txt(gridts_filepath, signature = "ts")
```

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gpat\_st\_make\_grid      *Grid polygon creator (without a header)*

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## Description

Creates a polygon of a GeoPAT grid based on a given parameters

## Usage

```
gpat_st_make_grid(x, n = c(10, 10), brick = FALSE)
```

## Arguments

x	An object of class sf or sfc
n	An integer of length 1 or 2, number of grid cells in x and y direction (columns, rows)
brick	TRUE/FALSE; should a new grid polygon have a brick topology

## Value

sf

## References

Based on the st\_make\_grid function from the sf package

## Examples

```
## Not run:
library(sf)
nc = st_read(system.file("shape/nc.shp", package="sf"))

my_grid = gpat_st_make_grid(nc)
my_grid$id = 1:100

grid_centroids = st_centroid(my_grid) %>%
  st_coordinates(grid_centroids) %>%
  as_data_frame() %>%
  mutate(id = 1:100)

ggplot() +
  geom_sf(data = my_grid) +
  geom_text(data = grid_centroids, aes(x = X, y = Y, label = id)) +
  theme_void()

## End(Not run)
```

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rgeopat2

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