# Package: futility (via r-universe)

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**Title** Helpers for the 'GDAL' Application Utility Libraries

**Version** 0.0.0.9001

**Description** Helpful wrappers around the GDAL utilities, for now via the 'sf' package.

**License** MIT + file LICENSE

**Encoding** UTF-8

**Language** es

**Roxygen** list(markdown = TRUE)

**RoxygenNote** 7.2.3

**Imports** sf

**URL** https://github.com/hypertidy/futility

**BugReports** https://github.com/hypertidy/futility/issues

**Repository** https://hypertidy.r-universe.dev

**RemoteUrl** https://github.com/hypertidy/futility

**RemoteRef** HEAD

**RemoteSha** 448ff70fa8fa4309463e429bf502a25da0c4d5af

## Contents

gdal_grid *GDAL grid*

## Description

Runs the gdal_grid utility.

## Usage

```
gdal_grid(
  pts,
  dimension = c(256, 256),
  extent = NULL,
  algorithm = "linear",
  read = TRUE,
  options = NULL
)
```

## Arguments

| | |
|---|---|
| pts | points, columns of X, Y, Z |
| dimension | ncols, nrows |
| extent | xmin,xmax,ymin,ymax |
| algorithm | one of invdist, invdistnn, average, linear see Details |

## Details

Algorithms listed at https://gdal.org/programs/gdal_grid.html#interpolation-algorithmsuse

Pass in paramaters the algorithm name, e. g. 'invdist:power=2.0:smoothing=1.0' - see examples.

## Value

matrix of raster values, numeric

## Examples

```
n <- 500
rc <- cbind(sample(nrow(volcano), n, replace = TRUE), sample(ncol(volcano), n, replace = TRUE))
xyz <- cbind(rc, volcano[rc])
ex <- c(range(xyz[,1]), range(xyz[,2]))
v <- gdal_grid(xyz, extent = ex)

ximage::ximage(v, extent = ex, asp = 1)

v1 <- gdal_grid(xyz, extent = ex, algorithm = "invdist:power=2.0:smoothing=1.0 ")
```

vrtpoints *Write points xyz to CSV for GDAL.*

## Description

Obtain a filename that wraps a CSV file with the input points in it. This is suitable for use with gdal_grid the command line utility, but see gdal_grid() the function for a convenient wrapper.

## Usage

```
vrtpoints(pts, name = NULL)
```

## Arguments

| | |
|---|---|
| pts | data frame or matrix of points, X, Y, Z |
| name | optional, used as the layername in the GDAL source |

## Value

path to tempfile

## Examples

```
n <- 500
rc <- cbind(sample(nrow(volcano), n, replace = TRUE), sample(ncol(volcano), n, replace = TRUE))
xyz <- cbind(rc, volcano[rc])
plot(xyz[,2:1], col = palr::d_pal(xyz[,3]), pch = 19, cex = .3)
file <- vrtpoints(xyz)
sf::gdal_utils("grid", file, tf <- tempfile(fileext = ".tif"))
sf::read_sf(file)
sf::gdal_utils("info", tf)
```

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