

Package ‘image.CannyEdges’

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Type Package

Title Implementation of the Canny Edge Detector for Images

Version 0.1.0

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Description An implementation of the Canny Edge Detector for detecting edges in images. The package provides an interface to the algorithm available at <<https://github.com/Neseb/canny>>.

License GPL-3

URL <https://github.com/bnosac/image>

Encoding UTF-8

Imports Rcpp (>= 0.12.9)

LinkingTo Rcpp

Suggests pixmap, magick

RoxygenNote 7.1.0

SystemRequirements libpng, fftw3

NeedsCompilation yes

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image.CannyEdges-package

Implementation of the Canny Edge Detector for Images

Description

Canny Edge Detector for Images. See https://en.wikipedia.org/wiki/Canny_edge_detector. Adapted from <https://github.com/Neseb/canny>.

See Also

[image_canny_edge_detector](#)

image_canny_edge_detector

Canny Edge Detector for Images

Description

Canny Edge Detector for Images. See https://en.wikipedia.org/wiki/Canny_edge_detector. Adapted from <https://github.com/Neseb/canny>.

Usage

```
image_canny_edge_detector(x, s = 2, low_thr = 3, high_thr = 10, accGrad = TRUE)
```

Arguments

x	a matrix of image pixel values in the 0-255 range.
s	sigma, the Gaussian filter variance. Defaults to 2.
low_thr	lower threshold value of the algorithm. Defaults to 3.
high_thr	upper threshold value of the algorithm. Defaults to 10
accGrad	logical indicating to trigger higher-order gradient

Value

a list with element edges which is a matrix with values 0 or 255 indicating in the same dimension of x. Next to that the list also contains the input parameters s, low_thr, high_thr and accGrad, the number of rows (nx) and columns of the image (ny) and the number of pixels which have value 255 (pixels_nonzero).

Examples

```
if(requireNamespace("pixmap") && requireNamespace("magick")){

  library(pixmap)
  imagelocation <- system.file("extdata", "chairs.pgm", package="image.CannyEdges")
  image <- read.pnm(file = imagelocation, cellres = 1)
  x <- image@grey * 255

  edges <- image_canny_edge_detector(x)
  edges
  plot(edges)

  ##
  ## image_canny_edge_detector expects a matrix as input
  ## if you have a jpg/png/... convert it to pgm first or take the r/g/b channel
  library(magick)
  x <- image_read(system.file("extdata", "atomium.jpg", package="image.CannyEdges"))
  x
  image <- image_data(x, channels = "Gray")
  image <- as.integer(image, transpose = TRUE)
  edges <- image_canny_edge_detector(image)
  plot(edges)

  f <- tempfile(fileext = ".pgm")
  library(magick)
  x <- image_read(system.file("extdata", "atomium.jpg", package="image.CannyEdges"))
  x <- image_convert(x, format = "pgm", depth = 8)
  image_write(x, path = f, format = "pgm")

  image <- read.pnm(f, cellres = 1)
  edges <- image_canny_edge_detector(image@grey * 255)
  plot(edges)

  file.remove(f)
}
```

plot.image_canny

Plot the result of the Canny Edge Detector

Description

Plot the result of [image_canny_edge_detector](#)

Usage

```
## S3 method for class 'image_canny'
plot(x, ...)
```

Arguments

`x` an object of class `image_canny` as returned by `image_canny_edge_detector`
`...` further arguments passed on to `plot`, except `type`, `xlab` and `ylab` which are set inside the function

Value

`invisible()`

Examples

```
library(pixmap)
imagelocation <- system.file("extdata", "chairs.pgm", package="image.CannyEdges")
image <- read.pnm(file = imagelocation, cellres = 1)
edges <- image_canny_edge_detector(image@grey * 255)
plot(edges)
```

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