

# Package ‘image.Otsu’

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**Type** Package

**Title** Otsu's Image Segmentation Method

**Description** An implementation of the Otsu's Image Segmentation Method described in the paper: “A C++ Implementation of Otsu's Image Segmentation Method”. The algorithm is explained at <doi:10.5201/ipol.2016.158>.

**Maintainer** Jan Wijffels <jwijffels@bnosac.be>

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**Version** 0.1

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

**Imports** Rcpp (>= 0.12.8)

**LinkingTo** Rcpp

**Suggests** magick

**RoxygenNote** 7.1.0

**NeedsCompilation** yes

**Author** Jan Wijffels [aut, cre, cph] (R wrapper),  
BNOSAC [cph] (R wrapper),  
Juan Pablo Balarini [ctb, cph] (Otsu C++ code),  
Sergio Nesmachnow [ctb, cph] (Otsu C++ code)

**Repository** CRAN

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`image_otsu`*Image segmentation using Otsu*

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**Description**

An implementation of the Otsu's image segmentation algorithm explained at <https://doi.org/10.5201/ipo1.2016.158>.

**Usage**

```
image_otsu(x, threshold = 0)
```

**Arguments**

<code>x</code>	an object of class <code>magick-image</code> or a greyscale matrix of image pixel values in the 0-255 range
<code>threshold</code>	integer value in range of 0-255. To override the threshold. Defaults to 0 indicating not to override the threshold.

**Value**

In case `x` is a matrix, a list with elements `x` (containing the thresholded image) and `threshold` is returned

In case `x` is a `magick-image`, the thresholded `magick-image` is returned alongside which also now has an attribute called `threshold` with the exact Otsu threshold value

**Examples**

```
library(magick)
path <- system.file(package="image.otsu", "extdata", "coins.jpeg")
x <- image_read(path)
x
img <- image_otsu(x)
img
attr(img, "threshold")
img <- image_otsu(x, threshold = 180)
img

img <- image_data(x, channels = "gray")
img <- as.integer(img, transpose = TRUE)
img <- img[, , 1]
img <- image_otsu(img)
str(img)
```

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