
MATLAB2Py Image Analysis

Release 0.1

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Mar 11, 2022

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MATLAB2Py Image Analysis is a Python library to support some MATLAB functions for Image Analysis in Python. Function implementation is based on [MATLAB Image processing techniques for image analysis documentation](#).

Note: This project is still in progress.

IMAGE DISPLAY

imshow(*I*, *grayscale_filter=None*, *title=None*, *figsize=None*, *cmap='gray'*, *display_grid=False*, *gridcolor='w'*, *gridwidth=2*, *linestyle='-'*)

Display image

Parameters

- **I** – image
- **grayscale_filter** – grayscale image display range as [low, high]
- **title** – title of the figure
- **cmap** – cmap of display
- **display_grid** – set to *True* to draw a pixel grid on top of the image

Returns None

plot_images(*images*, *figsize=(10, 5)*, *cmap='gray'*, *display_grid=False*, *gridcolor='w'*, *gridwidth=2*, *linestyle='-'*)

Plot several images (max 10)

Parameters

- **images** – a list of images as [[<image>, <title>]]
- **figsize** – the size of final figure
- **cmap** – cmap of display
- **display_grid** – set to *True* to draw a pixel grid on top of the image

Returns None

IMAGE EXPLORATION

imhist(*I*, *n*: *int* = 20, *figsize*=(15, 5), *filename*: *str* = 'Image')

Return and display the histogram of image data

Parameters

- **I** – grayscale image
- **n** (*int*) – number of bins, defaults to 20
- **figsize** – figsize of figure
- **filename** (*str*) – name of given image, to insert in title

Returns histogram counts, and bin locations

IMAGE FILTERING

fspecial(*type*: *str*, *hsize*: *int* = 3, *sigma*: *float* = 1.0)

Return a predefined 2D filter

Parameters

- **type** (*str*) – type of filter (*gaussian*, *prewitt*, *sobel*)
- **hsize** (*int*, *optional*) – size of filter, defaults to 3
- **sigma** (*float*, *optional*) – standard deviation for Gaussian filter, defaults to 1.0

Returns a 2D filter

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