

# **light\\_detect Documentation**

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Python Module Index	5
Index	7



Contents:

Command line tool to find lights in an image

`run.main ( )`

Detect the lights in an image.

`run.parse_args ( )`

Parse the arguments.

**Returns:**

`argparse.Namespace`: The command line arguments.

Contains object detection classes.

`class light_detect.detectors.LightDetector ( image_path=None, image=None, blur_length=5, threshold=210 )`

Object capable of finding light sources in an image.

**property gaussian\_blur\_length**

int: The edge length of the gaussian blur kernel.

**property light\_centers**

list(tuple(int, int)): Contains the center of each light.

**property light\_circles**

Decorate the property method with the ability to automatically set the corresponding instance variable of the class.

**property light\_contours**

Decorate the property method with the ability to automatically set the corresponding instance variable of the class.

`show_lights ( colour=0, 0, 255, thickness=3 )`

Display the lights.

**Keyword Args:**

**colour (tuple(uint8)):**

The BGR colour to mark the lights with.

**thickness (int):**

The line thickness to use in marking the lights.

**property threshold**

np.uint8: The value to threshold the image on.

**class** light\_detect.detectors.**ObjectDetector** ( *image\_path=None, image=None* )

Base class for object detectors.

**property gray\_scale\_img**

np.array((:,:), np.uint8): The grayscale version of the original image.

**static show\_image** ( *image, window\_title='Image'* )

Display an image.

**Args:**

image (np.array((:,:,...), np.uint8)): The image to show.

**Keyword Args:**

window\_title (str): The title to display on the window.

**show\_working\_image** ( )

Display the current working image.

Useful object representation.

**class** light\_detect.objects.**Circle** ( *center, radius* )

Represent a circle.

**classmethod as\_integers** ( *center, radius* )

Initialize the circle using rounded, integer values.

**Args:**

**center (tuple(float, float)):**

The center position of the circle.

**radius (float):** The radius of the circle.

**Returns:**

instance: The class instance intialized with integers.

**property center**

tuple: The center position of the circle.

**property radius**

float or int: The radius of the circle.

Utility Functions.

light\_detect.utils.**autoset\_property** ( *property\_method* )

Wraps a class property to automatically set the corresponding instance variable if it evaluates False. This requires the instance variable name be an underscore followed by the property method name, and a corresponding setter method be implemented and named `_set` followed by the instance variable name. This allows automatic caching of potentially slow to set variables.

**Args:**

**property\_method (method):**

The class property that is to be decorated.

- [Index](#)
- [Module Index](#)

- *Search Page*





**l**

light\_detect

    light\_detect.detectors, ??

    light\_detect.objects, ??

    light\_detect.utils, ??

**r**

run, ??



## A

as\_integers() (light\_detect.objects.Circle class method), 2  
 autoset\_property() (in module light\_detect.utils), 2

## C

center() (light\_detect.objects.Circle property), 2  
 Circle (class in light\_detect.objects), 2

## G

gaussian\_blur\_length() (light\_detect.detectors.LightDetector property), 1  
 gray\_scale\_img() (light\_detect.detectors.ObjectDetector property), 2

## L

light\_centers() (light\_detect.detectors.LightDetector property), 1  
 light\_circles() (light\_detect.detectors.LightDetector property), 1  
 light\_contours() (light\_detect.detectors.LightDetector property), 1  
 light\_detect.detectors  
   module, 1  
 light\_detect.objects  
   module, 2  
 light\_detect.utils  
   module, 2  
 LightDetector (class in light\_detect.detectors), 1

## M

main() (in module run), 1  
 module  
   light\_detect.detectors, 1  
   light\_detect.objects, 2

light\_detect.utils, 2  
 run, 1

## O

ObjectDetector (class in light\_detect.detectors), 2

## P

parse\_args() (in module run), 1

## R

radius() (light\_detect.objects.Circle property), 2  
 run  
   module, 1

## S

show\_image() (light\_detect.detectors.ObjectDetector static method), 2  
 show\_lights() (light\_detect.detectors.LightDetector method), 1  
 show\_working\_image() (light\_detect.detectors.ObjectDetector method), 2

## T

threshold() (light\_detect.detectors.LightDetector property), 2

