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* [Overview](http://docs.google.com/overview-summary.html)
* [Package](http://docs.google.com/package-summary.html)
* Class
* [Tree](http://docs.google.com/package-tree.html)
* [Index](http://docs.google.com/index-all.html)
* [Help](http://docs.google.com/help-doc.html)
* [Prev Class](http://docs.google.com/org/opencv/features2d/FastFeatureDetector.html)
* Next Class
* [Frames](http://docs.google.com/index.html?org/opencv/features2d/Feature2D.html)
* [No Frames](http://docs.google.com/Feature2D.html)
* [All Classes](http://docs.google.com/allclasses-noframe.html)
* Summary:
* Nested |
* Field |
* Constr |
* [Method](#3znysh7)
* Detail:
* Field |
* Constr |
* [Method](#3dy6vkm)

org.opencv.features2d

## Class Feature2D

* java.lang.Object
  + [org.opencv.core.Algorithm](http://docs.google.com/org/opencv/core/Algorithm.html)
    - org.opencv.features2d.Feature2D
* Direct Known Subclasses: [AffineFeature](http://docs.google.com/org/opencv/features2d/AffineFeature.html), [AgastFeatureDetector](http://docs.google.com/org/opencv/features2d/AgastFeatureDetector.html), [AKAZE](http://docs.google.com/org/opencv/features2d/AKAZE.html), [BRISK](http://docs.google.com/org/opencv/features2d/BRISK.html), [FastFeatureDetector](http://docs.google.com/org/opencv/features2d/FastFeatureDetector.html), [GFTTDetector](http://docs.google.com/org/opencv/features2d/GFTTDetector.html), [KAZE](http://docs.google.com/org/opencv/features2d/KAZE.html), [MSER](http://docs.google.com/org/opencv/features2d/MSER.html), [ORB](http://docs.google.com/org/opencv/features2d/ORB.html), [SIFT](http://docs.google.com/org/opencv/features2d/SIFT.html), [SimpleBlobDetector](http://docs.google.com/org/opencv/features2d/SimpleBlobDetector.html)  
    
  public class Feature2D  
  extends [Algorithm](http://docs.google.com/org/opencv/core/Algorithm.html)  
  Abstract base class for 2D image feature detectors and descriptor extractors

### Method SummaryMethods

| Modifier and Type | Method and Description |
| --- | --- |
| static [Feature2D](http://docs.google.com/org/opencv/features2d/Feature2D.html) | [**\_\_fromPtr\_\_**](http://docs.google.com/org/opencv/features2d/Feature2D.html#__fromPtr__(long))(long addr) |
| void | [**compute**](http://docs.google.com/org/opencv/features2d/Feature2D.html#compute(java.util.List,%20java.util.List,%20java.util.List))(java.util.List<[Mat](http://docs.google.com/org/opencv/core/Mat.html)> images, java.util.List<[MatOfKeyPoint](http://docs.google.com/org/opencv/core/MatOfKeyPoint.html)> keypoints, java.util.List<[Mat](http://docs.google.com/org/opencv/core/Mat.html)> descriptors) |
| void | [**compute**](http://docs.google.com/org/opencv/features2d/Feature2D.html#compute(org.opencv.core.Mat,%20org.opencv.core.MatOfKeyPoint,%20org.opencv.core.Mat))([Mat](http://docs.google.com/org/opencv/core/Mat.html) image, [MatOfKeyPoint](http://docs.google.com/org/opencv/core/MatOfKeyPoint.html) keypoints, [Mat](http://docs.google.com/org/opencv/core/Mat.html) descriptors) Computes the descriptors for a set of keypoints detected in an image (first variant) or image set (second variant). |
| int | [**defaultNorm**](http://docs.google.com/org/opencv/features2d/Feature2D.html#defaultNorm())() |
| int | [**descriptorSize**](http://docs.google.com/org/opencv/features2d/Feature2D.html#descriptorSize())() |
| int | [**descriptorType**](http://docs.google.com/org/opencv/features2d/Feature2D.html#descriptorType())() |
| void | [**detect**](http://docs.google.com/org/opencv/features2d/Feature2D.html#detect(java.util.List,%20java.util.List))(java.util.List<[Mat](http://docs.google.com/org/opencv/core/Mat.html)> images, java.util.List<[MatOfKeyPoint](http://docs.google.com/org/opencv/core/MatOfKeyPoint.html)> keypoints) |
| void | [**detect**](http://docs.google.com/org/opencv/features2d/Feature2D.html#detect(java.util.List,%20java.util.List,%20java.util.List))(java.util.List<[Mat](http://docs.google.com/org/opencv/core/Mat.html)> images, java.util.List<[MatOfKeyPoint](http://docs.google.com/org/opencv/core/MatOfKeyPoint.html)> keypoints, java.util.List<[Mat](http://docs.google.com/org/opencv/core/Mat.html)> masks) |
| void | [**detect**](http://docs.google.com/org/opencv/features2d/Feature2D.html#detect(org.opencv.core.Mat,%20org.opencv.core.MatOfKeyPoint))([Mat](http://docs.google.com/org/opencv/core/Mat.html) image, [MatOfKeyPoint](http://docs.google.com/org/opencv/core/MatOfKeyPoint.html) keypoints) Detects keypoints in an image (first variant) or image set (second variant). |
| void | [**detect**](http://docs.google.com/org/opencv/features2d/Feature2D.html#detect(org.opencv.core.Mat,%20org.opencv.core.MatOfKeyPoint,%20org.opencv.core.Mat))([Mat](http://docs.google.com/org/opencv/core/Mat.html) image, [MatOfKeyPoint](http://docs.google.com/org/opencv/core/MatOfKeyPoint.html) keypoints, [Mat](http://docs.google.com/org/opencv/core/Mat.html) mask) Detects keypoints in an image (first variant) or image set (second variant). |
| void | [**detectAndCompute**](http://docs.google.com/org/opencv/features2d/Feature2D.html#detectAndCompute(org.opencv.core.Mat,%20org.opencv.core.Mat,%20org.opencv.core.MatOfKeyPoint,%20org.opencv.core.Mat))([Mat](http://docs.google.com/org/opencv/core/Mat.html) image, [Mat](http://docs.google.com/org/opencv/core/Mat.html) mask, [MatOfKeyPoint](http://docs.google.com/org/opencv/core/MatOfKeyPoint.html) keypoints, [Mat](http://docs.google.com/org/opencv/core/Mat.html) descriptors) Detects keypoints and computes the descriptors |
| void | [**detectAndCompute**](http://docs.google.com/org/opencv/features2d/Feature2D.html#detectAndCompute(org.opencv.core.Mat,%20org.opencv.core.Mat,%20org.opencv.core.MatOfKeyPoint,%20org.opencv.core.Mat,%20boolean))([Mat](http://docs.google.com/org/opencv/core/Mat.html) image, [Mat](http://docs.google.com/org/opencv/core/Mat.html) mask, [MatOfKeyPoint](http://docs.google.com/org/opencv/core/MatOfKeyPoint.html) keypoints, [Mat](http://docs.google.com/org/opencv/core/Mat.html) descriptors, boolean useProvidedKeypoints) Detects keypoints and computes the descriptors |
| boolean | [**empty**](http://docs.google.com/org/opencv/features2d/Feature2D.html#empty())() Returns true if the Algorithm is empty (e.g. |
| java.lang.String | [**getDefaultName**](http://docs.google.com/org/opencv/features2d/Feature2D.html#getDefaultName())() Returns the algorithm string identifier. |
| void | [**read**](http://docs.google.com/org/opencv/features2d/Feature2D.html#read(java.lang.String))(java.lang.String fileName) |
| void | [**write**](http://docs.google.com/org/opencv/features2d/Feature2D.html#write(java.lang.String))(java.lang.String fileName) |

### Methods inherited from class org.opencv.core.[**Algorithm**](http://docs.google.com/org/opencv/core/Algorithm.html)[clear](http://docs.google.com/org/opencv/core/Algorithm.html#clear()), [getNativeObjAddr](http://docs.google.com/org/opencv/core/Algorithm.html#getNativeObjAddr()), [save](http://docs.google.com/org/opencv/core/Algorithm.html#save(java.lang.String))

### Methods inherited from class java.lang.Objectequals, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

### Method Detail

#### \_\_fromPtr\_\_ public static [Feature2D](http://docs.google.com/org/opencv/features2d/Feature2D.html) \_\_fromPtr\_\_(long addr)

#### compute public void compute(java.util.List<[Mat](http://docs.google.com/org/opencv/core/Mat.html)> images, java.util.List<[MatOfKeyPoint](http://docs.google.com/org/opencv/core/MatOfKeyPoint.html)> keypoints, java.util.List<[Mat](http://docs.google.com/org/opencv/core/Mat.html)> descriptors)Parameters:images - Image set.keypoints - Input collection of keypoints. Keypoints for which a descriptor cannot be computed are removed. Sometimes new keypoints can be added, for example: SIFT duplicates keypoint with several dominant orientations (for each orientation).descriptors - Computed descriptors. In the second variant of the method descriptors[i] are descriptors computed for a keypoints[i]. Row j is the keypoints (or keypoints[i]) is the descriptor for keypoint j-th keypoint.

#### compute public void compute([Mat](http://docs.google.com/org/opencv/core/Mat.html) image, [MatOfKeyPoint](http://docs.google.com/org/opencv/core/MatOfKeyPoint.html) keypoints, [Mat](http://docs.google.com/org/opencv/core/Mat.html) descriptors) Computes the descriptors for a set of keypoints detected in an image (first variant) or image set (second variant).Parameters:image - Image.keypoints - Input collection of keypoints. Keypoints for which a descriptor cannot be computed are removed. Sometimes new keypoints can be added, for example: SIFT duplicates keypoint with several dominant orientations (for each orientation).descriptors - Computed descriptors. In the second variant of the method descriptors[i] are descriptors computed for a keypoints[i]. Row j is the keypoints (or keypoints[i]) is the descriptor for keypoint j-th keypoint.

#### defaultNorm public int defaultNorm()

#### descriptorSize public int descriptorSize()

#### descriptorType public int descriptorType()

#### detect public void detect(java.util.List<[Mat](http://docs.google.com/org/opencv/core/Mat.html)> images, java.util.List<[MatOfKeyPoint](http://docs.google.com/org/opencv/core/MatOfKeyPoint.html)> keypoints)Parameters:images - Image set.keypoints - The detected keypoints. In the second variant of the method keypoints[i] is a set of keypoints detected in images[i] . masks[i] is a mask for images[i].

#### detect public void detect(java.util.List<[Mat](http://docs.google.com/org/opencv/core/Mat.html)> images, java.util.List<[MatOfKeyPoint](http://docs.google.com/org/opencv/core/MatOfKeyPoint.html)> keypoints, java.util.List<[Mat](http://docs.google.com/org/opencv/core/Mat.html)> masks)Parameters:images - Image set.keypoints - The detected keypoints. In the second variant of the method keypoints[i] is a set of keypoints detected in images[i] .masks - Masks for each input image specifying where to look for keypoints (optional). masks[i] is a mask for images[i].

#### detect public void detect([Mat](http://docs.google.com/org/opencv/core/Mat.html) image, [MatOfKeyPoint](http://docs.google.com/org/opencv/core/MatOfKeyPoint.html) keypoints) Detects keypoints in an image (first variant) or image set (second variant).Parameters:image - Image.keypoints - The detected keypoints. In the second variant of the method keypoints[i] is a set of keypoints detected in images[i] . matrix with non-zero values in the region of interest.

#### detect public void detect([Mat](http://docs.google.com/org/opencv/core/Mat.html) image, [MatOfKeyPoint](http://docs.google.com/org/opencv/core/MatOfKeyPoint.html) keypoints, [Mat](http://docs.google.com/org/opencv/core/Mat.html) mask) Detects keypoints in an image (first variant) or image set (second variant).Parameters:image - Image.keypoints - The detected keypoints. In the second variant of the method keypoints[i] is a set of keypoints detected in images[i] .mask - Mask specifying where to look for keypoints (optional). It must be a 8-bit integer matrix with non-zero values in the region of interest.

#### detectAndCompute public void detectAndCompute([Mat](http://docs.google.com/org/opencv/core/Mat.html) image, [Mat](http://docs.google.com/org/opencv/core/Mat.html) mask, [MatOfKeyPoint](http://docs.google.com/org/opencv/core/MatOfKeyPoint.html) keypoints, [Mat](http://docs.google.com/org/opencv/core/Mat.html) descriptors) Detects keypoints and computes the descriptorsParameters:image - automatically generatedmask - automatically generatedkeypoints - automatically generateddescriptors - automatically generated

#### detectAndCompute public void detectAndCompute([Mat](http://docs.google.com/org/opencv/core/Mat.html) image, [Mat](http://docs.google.com/org/opencv/core/Mat.html) mask, [MatOfKeyPoint](http://docs.google.com/org/opencv/core/MatOfKeyPoint.html) keypoints, [Mat](http://docs.google.com/org/opencv/core/Mat.html) descriptors, boolean useProvidedKeypoints) Detects keypoints and computes the descriptorsParameters:image - automatically generatedmask - automatically generatedkeypoints - automatically generateddescriptors - automatically generateduseProvidedKeypoints - automatically generated

#### empty public boolean empty() **Description copied from class:**[**Algorithm**](http://docs.google.com/org/opencv/core/Algorithm.html#empty()) Returns true if the Algorithm is empty (e.g. in the very beginning or after unsuccessful read**Overrides:** [empty](http://docs.google.com/org/opencv/core/Algorithm.html#empty()) in class [Algorithm](http://docs.google.com/org/opencv/core/Algorithm.html) Returns:automatically generated

#### getDefaultName public java.lang.String getDefaultName() **Description copied from class:**[**Algorithm**](http://docs.google.com/org/opencv/core/Algorithm.html#getDefaultName()) Returns the algorithm string identifier. This string is used as top level xml/yml node tag when the object is saved to a file or string.**Overrides:** [getDefaultName](http://docs.google.com/org/opencv/core/Algorithm.html#getDefaultName()) in class [Algorithm](http://docs.google.com/org/opencv/core/Algorithm.html) Returns:automatically generated

#### read public void read(java.lang.String fileName)

#### write public void write(java.lang.String fileName)

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* [No Frames](http://docs.google.com/Feature2D.html)
* [All Classes](http://docs.google.com/allclasses-noframe.html)
* Summary:
* Nested |
* Field |
* Constr |
* [Method](#3znysh7)
* Detail:
* Field |
* Constr |
* [Method](#3dy6vkm)

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