JavaScript is disabled on your browser.

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* [Next Class](http://docs.google.com/org/opencv/features2d/BFMatcher.html)
* [Frames](http://docs.google.com/index.html?org/opencv/features2d/AKAZE.html)
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org.opencv.features2d

## Class AKAZE

* java.lang.Object
  + [org.opencv.core.Algorithm](http://docs.google.com/org/opencv/core/Algorithm.html)
    - [org.opencv.features2d.Feature2D](http://docs.google.com/org/opencv/features2d/Feature2D.html)
      * org.opencv.features2d.AKAZE
* public class AKAZE  
  extends [Feature2D](http://docs.google.com/org/opencv/features2d/Feature2D.html)  
  Class implementing the AKAZE keypoint detector and descriptor extractor, described in CITE: ANB13. AKAZE descriptors can only be used with KAZE or AKAZE keypoints. This class is thread-safe. **Note:** When you need descriptors use Feature2D::detectAndCompute, which provides better performance. When using Feature2D::detect followed by Feature2D::compute scale space pyramid is computed twice. **Note:** AKAZE implements T-API. When image is passed as UMat some parts of the algorithm will use OpenCL. **Note:** [ANB13] Fast Explicit Diffusion for Accelerated Features in Nonlinear Scale Spaces. Pablo F. Alcantarilla, Jesús Nuevo and Adrien Bartoli. In British Machine Vision Conference (BMVC), Bristol, UK, September 2013.

### Field SummaryFields

| Modifier and Type | Field and Description |
| --- | --- |
| static int | [**DESCRIPTOR\_KAZE**](http://docs.google.com/org/opencv/features2d/AKAZE.html#DESCRIPTOR_KAZE) |
| static int | [**DESCRIPTOR\_KAZE\_UPRIGHT**](http://docs.google.com/org/opencv/features2d/AKAZE.html#DESCRIPTOR_KAZE_UPRIGHT) |
| static int | [**DESCRIPTOR\_MLDB**](http://docs.google.com/org/opencv/features2d/AKAZE.html#DESCRIPTOR_MLDB) |
| static int | [**DESCRIPTOR\_MLDB\_UPRIGHT**](http://docs.google.com/org/opencv/features2d/AKAZE.html#DESCRIPTOR_MLDB_UPRIGHT) |

### Method SummaryMethods

| Modifier and Type | Method and Description |
| --- | --- |
| static [AKAZE](http://docs.google.com/org/opencv/features2d/AKAZE.html) | [**\_\_fromPtr\_\_**](http://docs.google.com/org/opencv/features2d/AKAZE.html#__fromPtr__(long))(long addr) |
| static [AKAZE](http://docs.google.com/org/opencv/features2d/AKAZE.html) | [**create**](http://docs.google.com/org/opencv/features2d/AKAZE.html#create())() The AKAZE constructor DESCRIPTOR\_KAZE\_UPRIGHT, DESCRIPTOR\_MLDB or DESCRIPTOR\_MLDB\_UPRIGHT. |
| static [AKAZE](http://docs.google.com/org/opencv/features2d/AKAZE.html) | [**create**](http://docs.google.com/org/opencv/features2d/AKAZE.html#create(int))(int descriptor\_type) The AKAZE constructor |
| static [AKAZE](http://docs.google.com/org/opencv/features2d/AKAZE.html) | [**create**](http://docs.google.com/org/opencv/features2d/AKAZE.html#create(int,%20int))(int descriptor\_type, int descriptor\_size) The AKAZE constructor |
| static [AKAZE](http://docs.google.com/org/opencv/features2d/AKAZE.html) | [**create**](http://docs.google.com/org/opencv/features2d/AKAZE.html#create(int,%20int,%20int))(int descriptor\_type, int descriptor\_size, int descriptor\_channels) The AKAZE constructor |
| static [AKAZE](http://docs.google.com/org/opencv/features2d/AKAZE.html) | [**create**](http://docs.google.com/org/opencv/features2d/AKAZE.html#create(int,%20int,%20int,%20float))(int descriptor\_type, int descriptor\_size, int descriptor\_channels, float threshold) The AKAZE constructor |
| static [AKAZE](http://docs.google.com/org/opencv/features2d/AKAZE.html) | [**create**](http://docs.google.com/org/opencv/features2d/AKAZE.html#create(int,%20int,%20int,%20float,%20int))(int descriptor\_type, int descriptor\_size, int descriptor\_channels, float threshold, int nOctaves) The AKAZE constructor |
| static [AKAZE](http://docs.google.com/org/opencv/features2d/AKAZE.html) | [**create**](http://docs.google.com/org/opencv/features2d/AKAZE.html#create(int,%20int,%20int,%20float,%20int,%20int))(int descriptor\_type, int descriptor\_size, int descriptor\_channels, float threshold, int nOctaves, int nOctaveLayers) The AKAZE constructor |
| static [AKAZE](http://docs.google.com/org/opencv/features2d/AKAZE.html) | [**create**](http://docs.google.com/org/opencv/features2d/AKAZE.html#create(int,%20int,%20int,%20float,%20int,%20int,%20int))(int descriptor\_type, int descriptor\_size, int descriptor\_channels, float threshold, int nOctaves, int nOctaveLayers, int diffusivity) The AKAZE constructor |
| java.lang.String | [**getDefaultName**](http://docs.google.com/org/opencv/features2d/AKAZE.html#getDefaultName())() Returns the algorithm string identifier. |
| int | [**getDescriptorChannels**](http://docs.google.com/org/opencv/features2d/AKAZE.html#getDescriptorChannels())() |
| int | [**getDescriptorSize**](http://docs.google.com/org/opencv/features2d/AKAZE.html#getDescriptorSize())() |
| int | [**getDescriptorType**](http://docs.google.com/org/opencv/features2d/AKAZE.html#getDescriptorType())() |
| int | [**getDiffusivity**](http://docs.google.com/org/opencv/features2d/AKAZE.html#getDiffusivity())() |
| int | [**getNOctaveLayers**](http://docs.google.com/org/opencv/features2d/AKAZE.html#getNOctaveLayers())() |
| int | [**getNOctaves**](http://docs.google.com/org/opencv/features2d/AKAZE.html#getNOctaves())() |
| double | [**getThreshold**](http://docs.google.com/org/opencv/features2d/AKAZE.html#getThreshold())() |
| void | [**setDescriptorChannels**](http://docs.google.com/org/opencv/features2d/AKAZE.html#setDescriptorChannels(int))(int dch) |
| void | [**setDescriptorSize**](http://docs.google.com/org/opencv/features2d/AKAZE.html#setDescriptorSize(int))(int dsize) |
| void | [**setDescriptorType**](http://docs.google.com/org/opencv/features2d/AKAZE.html#setDescriptorType(int))(int dtype) |
| void | [**setDiffusivity**](http://docs.google.com/org/opencv/features2d/AKAZE.html#setDiffusivity(int))(int diff) |
| void | [**setNOctaveLayers**](http://docs.google.com/org/opencv/features2d/AKAZE.html#setNOctaveLayers(int))(int octaveLayers) |
| void | [**setNOctaves**](http://docs.google.com/org/opencv/features2d/AKAZE.html#setNOctaves(int))(int octaves) |
| void | [**setThreshold**](http://docs.google.com/org/opencv/features2d/AKAZE.html#setThreshold(double))(double threshold) |

### Methods inherited from class org.opencv.features2d.[**Feature2D**](http://docs.google.com/org/opencv/features2d/Feature2D.html)[compute](http://docs.google.com/org/opencv/features2d/Feature2D.html#compute(java.util.List,%20java.util.List,%20java.util.List)), [compute](http://docs.google.com/org/opencv/features2d/Feature2D.html#compute(org.opencv.core.Mat,%20org.opencv.core.MatOfKeyPoint,%20org.opencv.core.Mat)), [defaultNorm](http://docs.google.com/org/opencv/features2d/Feature2D.html#defaultNorm()), [descriptorSize](http://docs.google.com/org/opencv/features2d/Feature2D.html#descriptorSize()), [descriptorType](http://docs.google.com/org/opencv/features2d/Feature2D.html#descriptorType()), [detect](http://docs.google.com/org/opencv/features2d/Feature2D.html#detect(java.util.List,%20java.util.List)), [detect](http://docs.google.com/org/opencv/features2d/Feature2D.html#detect(java.util.List,%20java.util.List,%20java.util.List)), [detect](http://docs.google.com/org/opencv/features2d/Feature2D.html#detect(org.opencv.core.Mat,%20org.opencv.core.MatOfKeyPoint)), [detect](http://docs.google.com/org/opencv/features2d/Feature2D.html#detect(org.opencv.core.Mat,%20org.opencv.core.MatOfKeyPoint,%20org.opencv.core.Mat)), [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)), [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)), [empty](http://docs.google.com/org/opencv/features2d/Feature2D.html#empty()), [read](http://docs.google.com/org/opencv/features2d/Feature2D.html#read(java.lang.String)), [write](http://docs.google.com/org/opencv/features2d/Feature2D.html#write(java.lang.String))

### 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

### Field Detail

#### DESCRIPTOR\_KAZE public static final int DESCRIPTOR\_KAZESee Also:[Constant Field Values](http://docs.google.com/constant-values.html#org.opencv.features2d.AKAZE.DESCRIPTOR_KAZE)

#### DESCRIPTOR\_KAZE\_UPRIGHT public static final int DESCRIPTOR\_KAZE\_UPRIGHTSee Also:[Constant Field Values](http://docs.google.com/constant-values.html#org.opencv.features2d.AKAZE.DESCRIPTOR_KAZE_UPRIGHT)

#### DESCRIPTOR\_MLDB public static final int DESCRIPTOR\_MLDBSee Also:[Constant Field Values](http://docs.google.com/constant-values.html#org.opencv.features2d.AKAZE.DESCRIPTOR_MLDB)

#### DESCRIPTOR\_MLDB\_UPRIGHT public static final int DESCRIPTOR\_MLDB\_UPRIGHTSee Also:[Constant Field Values](http://docs.google.com/constant-values.html#org.opencv.features2d.AKAZE.DESCRIPTOR_MLDB_UPRIGHT)

### Method Detail

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

#### create public static [AKAZE](http://docs.google.com/org/opencv/features2d/AKAZE.html) create() The AKAZE constructor DESCRIPTOR\_KAZE\_UPRIGHT, DESCRIPTOR\_MLDB or DESCRIPTOR\_MLDB\_UPRIGHT. DIFF\_CHARBONNIERReturns:automatically generated

#### create public static [AKAZE](http://docs.google.com/org/opencv/features2d/AKAZE.html) create(int descriptor\_type) The AKAZE constructorParameters:descriptor\_type - Type of the extracted descriptor: DESCRIPTOR\_KAZE, DESCRIPTOR\_KAZE\_UPRIGHT, DESCRIPTOR\_MLDB or DESCRIPTOR\_MLDB\_UPRIGHT. DIFF\_CHARBONNIER Returns:automatically generated

#### create public static [AKAZE](http://docs.google.com/org/opencv/features2d/AKAZE.html) create(int descriptor\_type, int descriptor\_size) The AKAZE constructorParameters:descriptor\_type - Type of the extracted descriptor: DESCRIPTOR\_KAZE, DESCRIPTOR\_KAZE\_UPRIGHT, DESCRIPTOR\_MLDB or DESCRIPTOR\_MLDB\_UPRIGHT.descriptor\_size - Size of the descriptor in bits. 0 -> Full size DIFF\_CHARBONNIER Returns:automatically generated

#### create public static [AKAZE](http://docs.google.com/org/opencv/features2d/AKAZE.html) create(int descriptor\_type, int descriptor\_size, int descriptor\_channels) The AKAZE constructorParameters:descriptor\_type - Type of the extracted descriptor: DESCRIPTOR\_KAZE, DESCRIPTOR\_KAZE\_UPRIGHT, DESCRIPTOR\_MLDB or DESCRIPTOR\_MLDB\_UPRIGHT.descriptor\_size - Size of the descriptor in bits. 0 -> Full sizedescriptor\_channels - Number of channels in the descriptor (1, 2, 3) DIFF\_CHARBONNIER Returns:automatically generated

#### create public static [AKAZE](http://docs.google.com/org/opencv/features2d/AKAZE.html) create(int descriptor\_type, int descriptor\_size, int descriptor\_channels, float threshold) The AKAZE constructorParameters:descriptor\_type - Type of the extracted descriptor: DESCRIPTOR\_KAZE, DESCRIPTOR\_KAZE\_UPRIGHT, DESCRIPTOR\_MLDB or DESCRIPTOR\_MLDB\_UPRIGHT.descriptor\_size - Size of the descriptor in bits. 0 -> Full sizedescriptor\_channels - Number of channels in the descriptor (1, 2, 3)threshold - Detector response threshold to accept point DIFF\_CHARBONNIER Returns:automatically generated

#### create public static [AKAZE](http://docs.google.com/org/opencv/features2d/AKAZE.html) create(int descriptor\_type, int descriptor\_size, int descriptor\_channels, float threshold, int nOctaves) The AKAZE constructorParameters:descriptor\_type - Type of the extracted descriptor: DESCRIPTOR\_KAZE, DESCRIPTOR\_KAZE\_UPRIGHT, DESCRIPTOR\_MLDB or DESCRIPTOR\_MLDB\_UPRIGHT.descriptor\_size - Size of the descriptor in bits. 0 -> Full sizedescriptor\_channels - Number of channels in the descriptor (1, 2, 3)threshold - Detector response threshold to accept pointnOctaves - Maximum octave evolution of the image DIFF\_CHARBONNIER Returns:automatically generated

#### create public static [AKAZE](http://docs.google.com/org/opencv/features2d/AKAZE.html) create(int descriptor\_type, int descriptor\_size, int descriptor\_channels, float threshold, int nOctaves, int nOctaveLayers) The AKAZE constructorParameters:descriptor\_type - Type of the extracted descriptor: DESCRIPTOR\_KAZE, DESCRIPTOR\_KAZE\_UPRIGHT, DESCRIPTOR\_MLDB or DESCRIPTOR\_MLDB\_UPRIGHT.descriptor\_size - Size of the descriptor in bits. 0 -> Full sizedescriptor\_channels - Number of channels in the descriptor (1, 2, 3)threshold - Detector response threshold to accept pointnOctaves - Maximum octave evolution of the imagenOctaveLayers - Default number of sublevels per scale level DIFF\_CHARBONNIER Returns:automatically generated

#### create public static [AKAZE](http://docs.google.com/org/opencv/features2d/AKAZE.html) create(int descriptor\_type, int descriptor\_size, int descriptor\_channels, float threshold, int nOctaves, int nOctaveLayers, int diffusivity) The AKAZE constructorParameters:descriptor\_type - Type of the extracted descriptor: DESCRIPTOR\_KAZE, DESCRIPTOR\_KAZE\_UPRIGHT, DESCRIPTOR\_MLDB or DESCRIPTOR\_MLDB\_UPRIGHT.descriptor\_size - Size of the descriptor in bits. 0 -> Full sizedescriptor\_channels - Number of channels in the descriptor (1, 2, 3)threshold - Detector response threshold to accept pointnOctaves - Maximum octave evolution of the imagenOctaveLayers - Default number of sublevels per scale leveldiffusivity - Diffusivity type. DIFF\_PM\_G1, DIFF\_PM\_G2, DIFF\_WEICKERT or DIFF\_CHARBONNIER 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/features2d/Feature2D.html#getDefaultName()) in class [Feature2D](http://docs.google.com/org/opencv/features2d/Feature2D.html) Returns:automatically generated

#### getDescriptorChannels public int getDescriptorChannels()

#### getDescriptorSize public int getDescriptorSize()

#### getDescriptorType public int getDescriptorType()

#### getDiffusivity public int getDiffusivity()

#### getNOctaveLayers public int getNOctaveLayers()

#### getNOctaves public int getNOctaves()

#### getThreshold public double getThreshold()

#### setDescriptorChannels public void setDescriptorChannels(int dch)

#### setDescriptorSize public void setDescriptorSize(int dsize)

#### setDescriptorType public void setDescriptorType(int dtype)

#### setDiffusivity public void setDiffusivity(int diff)

#### setNOctaveLayers public void setNOctaveLayers(int octaveLayers)

#### setNOctaves public void setNOctaves(int octaves)

#### setThreshold public void setThreshold(double threshold)

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