JavaScript is disabled on your browser.

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org.opencv.video

## Class DualTVL1OpticalFlow

* java.lang.Object
  + [org.opencv.core.Algorithm](http://docs.google.com/org/opencv/core/Algorithm.html)
    - [org.opencv.video.DenseOpticalFlow](http://docs.google.com/org/opencv/video/DenseOpticalFlow.html)
      * org.opencv.video.DualTVL1OpticalFlow
* public class DualTVL1OpticalFlow  
  extends [DenseOpticalFlow](http://docs.google.com/org/opencv/video/DenseOpticalFlow.html)

"Dual TV L1" Optical Flow Algorithm. The class implements the "Dual TV L1" optical flow algorithm described in CITE: Zach2007 and CITE: Javier2012 . Here are important members of the class that control the algorithm, which you can set after constructing the class instance:

* + member double tau Time step of the numerical scheme.
  + member double lambda Weight parameter for the data term, attachment parameter. This is the most relevant parameter, which determines the smoothness of the output. The smaller this parameter is, the smoother the solutions we obtain. It depends on the range of motions of the images, so its value should be adapted to each image sequence.
  + member double theta Weight parameter for (u - v)\^2, tightness parameter. It serves as a link between the attachment and the regularization terms. In theory, it should have a small value in order to maintain both parts in correspondence. The method is stable for a large range of values of this parameter.
  + member int nscales Number of scales used to create the pyramid of images.
  + member int warps Number of warpings per scale. Represents the number of times that I1(x+u0) and grad( I1(x+u0) ) are computed per scale. This is a parameter that assures the stability of the method. It also affects the running time, so it is a compromise between speed and accuracy.
  + member double epsilon Stopping criterion threshold used in the numerical scheme, which is a trade-off between precision and running time. A small value will yield more accurate solutions at the expense of a slower convergence.
  + member int iterations Stopping criterion iterations number used in the numerical scheme.

C. Zach, T. Pock and H. Bischof, "A Duality Based Approach for Realtime TV-L1 Optical Flow". Javier Sanchez, Enric Meinhardt-Llopis and Gabriele Facciolo. "TV-L1 Optical Flow Estimation".

### Method SummaryMethods

| Modifier and Type | Method and Description |
| --- | --- |
| static [DualTVL1OpticalFlow](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html) | [**\_\_fromPtr\_\_**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#__fromPtr__(long))(long addr) |
| static [DualTVL1OpticalFlow](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html) | [**create**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#create())() Creates instance of cv::DualTVL1OpticalFlow |
| static [DualTVL1OpticalFlow](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html) | [**create**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#create(double))(double tau) Creates instance of cv::DualTVL1OpticalFlow |
| static [DualTVL1OpticalFlow](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html) | [**create**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#create(double,%20double))(double tau, double lambda) Creates instance of cv::DualTVL1OpticalFlow |
| static [DualTVL1OpticalFlow](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html) | [**create**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#create(double,%20double,%20double))(double tau, double lambda, double theta) Creates instance of cv::DualTVL1OpticalFlow |
| static [DualTVL1OpticalFlow](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html) | [**create**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#create(double,%20double,%20double,%20int))(double tau, double lambda, double theta, int nscales) Creates instance of cv::DualTVL1OpticalFlow |
| static [DualTVL1OpticalFlow](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html) | [**create**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#create(double,%20double,%20double,%20int,%20int))(double tau, double lambda, double theta, int nscales, int warps) Creates instance of cv::DualTVL1OpticalFlow |
| static [DualTVL1OpticalFlow](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html) | [**create**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#create(double,%20double,%20double,%20int,%20int,%20double))(double tau, double lambda, double theta, int nscales, int warps, double epsilon) Creates instance of cv::DualTVL1OpticalFlow |
| static [DualTVL1OpticalFlow](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html) | [**create**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#create(double,%20double,%20double,%20int,%20int,%20double,%20int))(double tau, double lambda, double theta, int nscales, int warps, double epsilon, int innnerIterations) Creates instance of cv::DualTVL1OpticalFlow |
| static [DualTVL1OpticalFlow](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html) | [**create**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#create(double,%20double,%20double,%20int,%20int,%20double,%20int,%20int))(double tau, double lambda, double theta, int nscales, int warps, double epsilon, int innnerIterations, int outerIterations) Creates instance of cv::DualTVL1OpticalFlow |
| static [DualTVL1OpticalFlow](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html) | [**create**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#create(double,%20double,%20double,%20int,%20int,%20double,%20int,%20int,%20double))(double tau, double lambda, double theta, int nscales, int warps, double epsilon, int innnerIterations, int outerIterations, double scaleStep) Creates instance of cv::DualTVL1OpticalFlow |
| static [DualTVL1OpticalFlow](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html) | [**create**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#create(double,%20double,%20double,%20int,%20int,%20double,%20int,%20int,%20double,%20double))(double tau, double lambda, double theta, int nscales, int warps, double epsilon, int innnerIterations, int outerIterations, double scaleStep, double gamma) Creates instance of cv::DualTVL1OpticalFlow |
| static [DualTVL1OpticalFlow](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html) | [**create**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#create(double,%20double,%20double,%20int,%20int,%20double,%20int,%20int,%20double,%20double,%20int))(double tau, double lambda, double theta, int nscales, int warps, double epsilon, int innnerIterations, int outerIterations, double scaleStep, double gamma, int medianFiltering) Creates instance of cv::DualTVL1OpticalFlow |
| static [DualTVL1OpticalFlow](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html) | [**create**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#create(double,%20double,%20double,%20int,%20int,%20double,%20int,%20int,%20double,%20double,%20int,%20boolean))(double tau, double lambda, double theta, int nscales, int warps, double epsilon, int innnerIterations, int outerIterations, double scaleStep, double gamma, int medianFiltering, boolean useInitialFlow) Creates instance of cv::DualTVL1OpticalFlow |
| double | [**getEpsilon**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#getEpsilon())() SEE: setEpsilon |
| double | [**getGamma**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#getGamma())() SEE: setGamma |
| int | [**getInnerIterations**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#getInnerIterations())() SEE: setInnerIterations |
| double | [**getLambda**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#getLambda())() SEE: setLambda |
| int | [**getMedianFiltering**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#getMedianFiltering())() SEE: setMedianFiltering |
| int | [**getOuterIterations**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#getOuterIterations())() SEE: setOuterIterations |
| int | [**getScalesNumber**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#getScalesNumber())() SEE: setScalesNumber |
| double | [**getScaleStep**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#getScaleStep())() SEE: setScaleStep |
| double | [**getTau**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#getTau())() SEE: setTau |
| double | [**getTheta**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#getTheta())() SEE: setTheta |
| boolean | [**getUseInitialFlow**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#getUseInitialFlow())() SEE: setUseInitialFlow |
| int | [**getWarpingsNumber**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#getWarpingsNumber())() SEE: setWarpingsNumber |
| void | [**setEpsilon**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#setEpsilon(double))(double val) getEpsilon SEE: getEpsilon |
| void | [**setGamma**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#setGamma(double))(double val) getGamma SEE: getGamma |
| void | [**setInnerIterations**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#setInnerIterations(int))(int val) getInnerIterations SEE: getInnerIterations |
| void | [**setLambda**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#setLambda(double))(double val) getLambda SEE: getLambda |
| void | [**setMedianFiltering**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#setMedianFiltering(int))(int val) getMedianFiltering SEE: getMedianFiltering |
| void | [**setOuterIterations**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#setOuterIterations(int))(int val) getOuterIterations SEE: getOuterIterations |
| void | [**setScalesNumber**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#setScalesNumber(int))(int val) getScalesNumber SEE: getScalesNumber |
| void | [**setScaleStep**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#setScaleStep(double))(double val) getScaleStep SEE: getScaleStep |
| void | [**setTau**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#setTau(double))(double val) getTau SEE: getTau |
| void | [**setTheta**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#setTheta(double))(double val) getTheta SEE: getTheta |
| void | [**setUseInitialFlow**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#setUseInitialFlow(boolean))(boolean val) getUseInitialFlow SEE: getUseInitialFlow |
| void | [**setWarpingsNumber**](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html#setWarpingsNumber(int))(int val) getWarpingsNumber SEE: getWarpingsNumber |

### Methods inherited from class org.opencv.video.[**DenseOpticalFlow**](http://docs.google.com/org/opencv/video/DenseOpticalFlow.html)[calc](http://docs.google.com/org/opencv/video/DenseOpticalFlow.html#calc(org.opencv.core.Mat,%20org.opencv.core.Mat,%20org.opencv.core.Mat)), [collectGarbage](http://docs.google.com/org/opencv/video/DenseOpticalFlow.html#collectGarbage())

### 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()), [empty](http://docs.google.com/org/opencv/core/Algorithm.html#empty()), [getDefaultName](http://docs.google.com/org/opencv/core/Algorithm.html#getDefaultName()), [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 [DualTVL1OpticalFlow](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html) \_\_fromPtr\_\_(long addr)

#### create public static [DualTVL1OpticalFlow](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html) create() Creates instance of cv::DualTVL1OpticalFlowReturns:automatically generated

#### create public static [DualTVL1OpticalFlow](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html) create(double tau) Creates instance of cv::DualTVL1OpticalFlowParameters:tau - automatically generated Returns:automatically generated

#### create public static [DualTVL1OpticalFlow](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html) create(double tau, double lambda) Creates instance of cv::DualTVL1OpticalFlowParameters:tau - automatically generatedlambda - automatically generated Returns:automatically generated

#### create public static [DualTVL1OpticalFlow](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html) create(double tau, double lambda, double theta) Creates instance of cv::DualTVL1OpticalFlowParameters:tau - automatically generatedlambda - automatically generatedtheta - automatically generated Returns:automatically generated

#### create public static [DualTVL1OpticalFlow](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html) create(double tau, double lambda, double theta, int nscales) Creates instance of cv::DualTVL1OpticalFlowParameters:tau - automatically generatedlambda - automatically generatedtheta - automatically generatednscales - automatically generated Returns:automatically generated

#### create public static [DualTVL1OpticalFlow](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html) create(double tau, double lambda, double theta, int nscales, int warps) Creates instance of cv::DualTVL1OpticalFlowParameters:tau - automatically generatedlambda - automatically generatedtheta - automatically generatednscales - automatically generatedwarps - automatically generated Returns:automatically generated

#### create public static [DualTVL1OpticalFlow](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html) create(double tau, double lambda, double theta, int nscales, int warps, double epsilon) Creates instance of cv::DualTVL1OpticalFlowParameters:tau - automatically generatedlambda - automatically generatedtheta - automatically generatednscales - automatically generatedwarps - automatically generatedepsilon - automatically generated Returns:automatically generated

#### create public static [DualTVL1OpticalFlow](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html) create(double tau, double lambda, double theta, int nscales, int warps, double epsilon, int innnerIterations) Creates instance of cv::DualTVL1OpticalFlowParameters:tau - automatically generatedlambda - automatically generatedtheta - automatically generatednscales - automatically generatedwarps - automatically generatedepsilon - automatically generatedinnnerIterations - automatically generated Returns:automatically generated

#### create public static [DualTVL1OpticalFlow](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html) create(double tau, double lambda, double theta, int nscales, int warps, double epsilon, int innnerIterations, int outerIterations) Creates instance of cv::DualTVL1OpticalFlowParameters:tau - automatically generatedlambda - automatically generatedtheta - automatically generatednscales - automatically generatedwarps - automatically generatedepsilon - automatically generatedinnnerIterations - automatically generatedouterIterations - automatically generated Returns:automatically generated

#### create public static [DualTVL1OpticalFlow](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html) create(double tau, double lambda, double theta, int nscales, int warps, double epsilon, int innnerIterations, int outerIterations, double scaleStep) Creates instance of cv::DualTVL1OpticalFlowParameters:tau - automatically generatedlambda - automatically generatedtheta - automatically generatednscales - automatically generatedwarps - automatically generatedepsilon - automatically generatedinnnerIterations - automatically generatedouterIterations - automatically generatedscaleStep - automatically generated Returns:automatically generated

#### create public static [DualTVL1OpticalFlow](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html) create(double tau, double lambda, double theta, int nscales, int warps, double epsilon, int innnerIterations, int outerIterations, double scaleStep, double gamma) Creates instance of cv::DualTVL1OpticalFlowParameters:tau - automatically generatedlambda - automatically generatedtheta - automatically generatednscales - automatically generatedwarps - automatically generatedepsilon - automatically generatedinnnerIterations - automatically generatedouterIterations - automatically generatedscaleStep - automatically generatedgamma - automatically generated Returns:automatically generated

#### create public static [DualTVL1OpticalFlow](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html) create(double tau, double lambda, double theta, int nscales, int warps, double epsilon, int innnerIterations, int outerIterations, double scaleStep, double gamma, int medianFiltering) Creates instance of cv::DualTVL1OpticalFlowParameters:tau - automatically generatedlambda - automatically generatedtheta - automatically generatednscales - automatically generatedwarps - automatically generatedepsilon - automatically generatedinnnerIterations - automatically generatedouterIterations - automatically generatedscaleStep - automatically generatedgamma - automatically generatedmedianFiltering - automatically generated Returns:automatically generated

#### create public static [DualTVL1OpticalFlow](http://docs.google.com/org/opencv/video/DualTVL1OpticalFlow.html) create(double tau, double lambda, double theta, int nscales, int warps, double epsilon, int innnerIterations, int outerIterations, double scaleStep, double gamma, int medianFiltering, boolean useInitialFlow) Creates instance of cv::DualTVL1OpticalFlowParameters:tau - automatically generatedlambda - automatically generatedtheta - automatically generatednscales - automatically generatedwarps - automatically generatedepsilon - automatically generatedinnnerIterations - automatically generatedouterIterations - automatically generatedscaleStep - automatically generatedgamma - automatically generatedmedianFiltering - automatically generateduseInitialFlow - automatically generated Returns:automatically generated

#### getEpsilon public double getEpsilon() SEE: setEpsilonReturns:automatically generated

#### getGamma public double getGamma() SEE: setGammaReturns:automatically generated

#### getInnerIterations public int getInnerIterations() SEE: setInnerIterationsReturns:automatically generated

#### getLambda public double getLambda() SEE: setLambdaReturns:automatically generated

#### getMedianFiltering public int getMedianFiltering() SEE: setMedianFilteringReturns:automatically generated

#### getOuterIterations public int getOuterIterations() SEE: setOuterIterationsReturns:automatically generated

#### getScalesNumber public int getScalesNumber() SEE: setScalesNumberReturns:automatically generated

#### getScaleStep public double getScaleStep() SEE: setScaleStepReturns:automatically generated

#### getTau public double getTau() SEE: setTauReturns:automatically generated

#### getTheta public double getTheta() SEE: setThetaReturns:automatically generated

#### getUseInitialFlow public boolean getUseInitialFlow() SEE: setUseInitialFlowReturns:automatically generated

#### getWarpingsNumber public int getWarpingsNumber() SEE: setWarpingsNumberReturns:automatically generated

#### setEpsilon public void setEpsilon(double val) getEpsilon SEE: getEpsilonParameters:val - automatically generated

#### setGamma public void setGamma(double val) getGamma SEE: getGammaParameters:val - automatically generated

#### setInnerIterations public void setInnerIterations(int val) getInnerIterations SEE: getInnerIterationsParameters:val - automatically generated

#### setLambda public void setLambda(double val) getLambda SEE: getLambdaParameters:val - automatically generated

#### setMedianFiltering public void setMedianFiltering(int val) getMedianFiltering SEE: getMedianFilteringParameters:val - automatically generated

#### setOuterIterations public void setOuterIterations(int val) getOuterIterations SEE: getOuterIterationsParameters:val - automatically generated

#### setScalesNumber public void setScalesNumber(int val) getScalesNumber SEE: getScalesNumberParameters:val - automatically generated

#### setScaleStep public void setScaleStep(double val) getScaleStep SEE: getScaleStepParameters:val - automatically generated

#### setTau public void setTau(double val) getTau SEE: getTauParameters:val - automatically generated

#### setTheta public void setTheta(double val) getTheta SEE: getThetaParameters:val - automatically generated

#### setUseInitialFlow public void setUseInitialFlow(boolean val) getUseInitialFlow SEE: getUseInitialFlowParameters:val - automatically generated

#### setWarpingsNumber public void setWarpingsNumber(int val) getWarpingsNumber SEE: getWarpingsNumberParameters:val - automatically generated

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