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org.opencv.ml

## Class SVMSGD

* java.lang.Object
  + [org.opencv.core.Algorithm](http://docs.google.com/org/opencv/core/Algorithm.html)
    - [org.opencv.ml.StatModel](http://docs.google.com/org/opencv/ml/StatModel.html)
      * org.opencv.ml.SVMSGD
* public class SVMSGD  
  extends [StatModel](http://docs.google.com/org/opencv/ml/StatModel.html)  
  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\ Stochastic Gradient Descent SVM Classifier \* \\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

### Field SummaryFields

| Modifier and Type | Field and Description |
| --- | --- |
| static int | [**ASGD**](http://docs.google.com/org/opencv/ml/SVMSGD.html#ASGD) |
| static int | [**HARD\_MARGIN**](http://docs.google.com/org/opencv/ml/SVMSGD.html#HARD_MARGIN) |
| static int | [**SGD**](http://docs.google.com/org/opencv/ml/SVMSGD.html#SGD) |
| static int | [**SOFT\_MARGIN**](http://docs.google.com/org/opencv/ml/SVMSGD.html#SOFT_MARGIN) |

### Fields inherited from class org.opencv.ml.[**StatModel**](http://docs.google.com/org/opencv/ml/StatModel.html)[COMPRESSED\_INPUT](http://docs.google.com/org/opencv/ml/StatModel.html#COMPRESSED_INPUT), [PREPROCESSED\_INPUT](http://docs.google.com/org/opencv/ml/StatModel.html#PREPROCESSED_INPUT), [RAW\_OUTPUT](http://docs.google.com/org/opencv/ml/StatModel.html#RAW_OUTPUT), [UPDATE\_MODEL](http://docs.google.com/org/opencv/ml/StatModel.html#UPDATE_MODEL)

### Method SummaryMethods

| Modifier and Type | Method and Description |
| --- | --- |
| static [SVMSGD](http://docs.google.com/org/opencv/ml/SVMSGD.html) | [**\_\_fromPtr\_\_**](http://docs.google.com/org/opencv/ml/SVMSGD.html#__fromPtr__(long))(long addr) |
| static [SVMSGD](http://docs.google.com/org/opencv/ml/SVMSGD.html) | [**create**](http://docs.google.com/org/opencv/ml/SVMSGD.html#create())() Creates empty model. |
| float | [**getInitialStepSize**](http://docs.google.com/org/opencv/ml/SVMSGD.html#getInitialStepSize())() SEE: setInitialStepSize |
| float | [**getMarginRegularization**](http://docs.google.com/org/opencv/ml/SVMSGD.html#getMarginRegularization())() SEE: setMarginRegularization |
| int | [**getMarginType**](http://docs.google.com/org/opencv/ml/SVMSGD.html#getMarginType())() SEE: setMarginType |
| float | [**getShift**](http://docs.google.com/org/opencv/ml/SVMSGD.html#getShift())() |
| float | [**getStepDecreasingPower**](http://docs.google.com/org/opencv/ml/SVMSGD.html#getStepDecreasingPower())() SEE: setStepDecreasingPower |
| int | [**getSvmsgdType**](http://docs.google.com/org/opencv/ml/SVMSGD.html#getSvmsgdType())() SEE: setSvmsgdType |
| [TermCriteria](http://docs.google.com/org/opencv/core/TermCriteria.html) | [**getTermCriteria**](http://docs.google.com/org/opencv/ml/SVMSGD.html#getTermCriteria())() SEE: setTermCriteria |
| [Mat](http://docs.google.com/org/opencv/core/Mat.html) | [**getWeights**](http://docs.google.com/org/opencv/ml/SVMSGD.html#getWeights())() |
| static [SVMSGD](http://docs.google.com/org/opencv/ml/SVMSGD.html) | [**load**](http://docs.google.com/org/opencv/ml/SVMSGD.html#load(java.lang.String))(java.lang.String filepath) Loads and creates a serialized SVMSGD from a file Use SVMSGD::save to serialize and store an SVMSGD to disk. |
| static [SVMSGD](http://docs.google.com/org/opencv/ml/SVMSGD.html) | [**load**](http://docs.google.com/org/opencv/ml/SVMSGD.html#load(java.lang.String,%20java.lang.String))(java.lang.String filepath, java.lang.String nodeName) Loads and creates a serialized SVMSGD from a file Use SVMSGD::save to serialize and store an SVMSGD to disk. |
| void | [**setInitialStepSize**](http://docs.google.com/org/opencv/ml/SVMSGD.html#setInitialStepSize(float))(float InitialStepSize) getInitialStepSize SEE: getInitialStepSize |
| void | [**setMarginRegularization**](http://docs.google.com/org/opencv/ml/SVMSGD.html#setMarginRegularization(float))(float marginRegularization) getMarginRegularization SEE: getMarginRegularization |
| void | [**setMarginType**](http://docs.google.com/org/opencv/ml/SVMSGD.html#setMarginType(int))(int marginType) getMarginType SEE: getMarginType |
| void | [**setOptimalParameters**](http://docs.google.com/org/opencv/ml/SVMSGD.html#setOptimalParameters())() Function sets optimal parameters values for chosen SVM SGD model. |
| void | [**setOptimalParameters**](http://docs.google.com/org/opencv/ml/SVMSGD.html#setOptimalParameters(int))(int svmsgdType) Function sets optimal parameters values for chosen SVM SGD model. |
| void | [**setOptimalParameters**](http://docs.google.com/org/opencv/ml/SVMSGD.html#setOptimalParameters(int,%20int))(int svmsgdType, int marginType) Function sets optimal parameters values for chosen SVM SGD model. |
| void | [**setStepDecreasingPower**](http://docs.google.com/org/opencv/ml/SVMSGD.html#setStepDecreasingPower(float))(float stepDecreasingPower) getStepDecreasingPower SEE: getStepDecreasingPower |
| void | [**setSvmsgdType**](http://docs.google.com/org/opencv/ml/SVMSGD.html#setSvmsgdType(int))(int svmsgdType) getSvmsgdType SEE: getSvmsgdType |
| void | [**setTermCriteria**](http://docs.google.com/org/opencv/ml/SVMSGD.html#setTermCriteria(org.opencv.core.TermCriteria))([TermCriteria](http://docs.google.com/org/opencv/core/TermCriteria.html) val) getTermCriteria SEE: getTermCriteria |

### Methods inherited from class org.opencv.ml.[**StatModel**](http://docs.google.com/org/opencv/ml/StatModel.html)[calcError](http://docs.google.com/org/opencv/ml/StatModel.html#calcError(org.opencv.ml.TrainData,%20boolean,%20org.opencv.core.Mat)), [empty](http://docs.google.com/org/opencv/ml/StatModel.html#empty()), [getVarCount](http://docs.google.com/org/opencv/ml/StatModel.html#getVarCount()), [isClassifier](http://docs.google.com/org/opencv/ml/StatModel.html#isClassifier()), [isTrained](http://docs.google.com/org/opencv/ml/StatModel.html#isTrained()), [predict](http://docs.google.com/org/opencv/ml/StatModel.html#predict(org.opencv.core.Mat)), [predict](http://docs.google.com/org/opencv/ml/StatModel.html#predict(org.opencv.core.Mat,%20org.opencv.core.Mat)), [predict](http://docs.google.com/org/opencv/ml/StatModel.html#predict(org.opencv.core.Mat,%20org.opencv.core.Mat,%20int)), [train](http://docs.google.com/org/opencv/ml/StatModel.html#train(org.opencv.core.Mat,%20int,%20org.opencv.core.Mat)), [train](http://docs.google.com/org/opencv/ml/StatModel.html#train(org.opencv.ml.TrainData)), [train](http://docs.google.com/org/opencv/ml/StatModel.html#train(org.opencv.ml.TrainData,%20int))

### 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()), [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

### Field Detail

#### ASGD public static final int ASGDSee Also:[Constant Field Values](http://docs.google.com/constant-values.html#org.opencv.ml.SVMSGD.ASGD)

#### HARD\_MARGIN public static final int HARD\_MARGINSee Also:[Constant Field Values](http://docs.google.com/constant-values.html#org.opencv.ml.SVMSGD.HARD_MARGIN)

#### SGD public static final int SGDSee Also:[Constant Field Values](http://docs.google.com/constant-values.html#org.opencv.ml.SVMSGD.SGD)

#### SOFT\_MARGIN public static final int SOFT\_MARGINSee Also:[Constant Field Values](http://docs.google.com/constant-values.html#org.opencv.ml.SVMSGD.SOFT_MARGIN)

### Method Detail

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

#### create public static [SVMSGD](http://docs.google.com/org/opencv/ml/SVMSGD.html) create() Creates empty model. Use StatModel::train to train the model. Since %SVMSGD has several parameters, you may want to find the best parameters for your problem or use setOptimalParameters() to set some default parameters.Returns:automatically generated

#### getInitialStepSize public float getInitialStepSize() SEE: setInitialStepSizeReturns:automatically generated

#### getMarginRegularization public float getMarginRegularization() SEE: setMarginRegularizationReturns:automatically generated

#### getMarginType public int getMarginType() SEE: setMarginTypeReturns:automatically generated

#### getShift public float getShift()Returns:the shift of the trained model (decision function f(x) = weights \* x + shift).

#### getStepDecreasingPower public float getStepDecreasingPower() SEE: setStepDecreasingPowerReturns:automatically generated

#### getSvmsgdType public int getSvmsgdType() SEE: setSvmsgdTypeReturns:automatically generated

#### getTermCriteria public [TermCriteria](http://docs.google.com/org/opencv/core/TermCriteria.html) getTermCriteria() SEE: setTermCriteriaReturns:automatically generated

#### getWeights public [Mat](http://docs.google.com/org/opencv/core/Mat.html) getWeights()Returns:the weights of the trained model (decision function f(x) = weights \* x + shift).

#### load public static [SVMSGD](http://docs.google.com/org/opencv/ml/SVMSGD.html) load(java.lang.String filepath) Loads and creates a serialized SVMSGD from a file Use SVMSGD::save to serialize and store an SVMSGD to disk. Load the SVMSGD from this file again, by calling this function with the path to the file. Optionally specify the node for the file containing the classifierParameters:filepath - path to serialized SVMSGD Returns:automatically generated

#### load public static [SVMSGD](http://docs.google.com/org/opencv/ml/SVMSGD.html) load(java.lang.String filepath, java.lang.String nodeName) Loads and creates a serialized SVMSGD from a file Use SVMSGD::save to serialize and store an SVMSGD to disk. Load the SVMSGD from this file again, by calling this function with the path to the file. Optionally specify the node for the file containing the classifierParameters:filepath - path to serialized SVMSGDnodeName - name of node containing the classifier Returns:automatically generated

#### setInitialStepSize public void setInitialStepSize(float InitialStepSize) getInitialStepSize SEE: getInitialStepSizeParameters:InitialStepSize - automatically generated

#### setMarginRegularization public void setMarginRegularization(float marginRegularization) getMarginRegularization SEE: getMarginRegularizationParameters:marginRegularization - automatically generated

#### setMarginType public void setMarginType(int marginType) getMarginType SEE: getMarginTypeParameters:marginType - automatically generated

#### setOptimalParameters public void setOptimalParameters() Function sets optimal parameters values for chosen SVM SGD model.

#### setOptimalParameters public void setOptimalParameters(int svmsgdType) Function sets optimal parameters values for chosen SVM SGD model.Parameters:svmsgdType - is the type of SVMSGD classifier.

#### setOptimalParameters public void setOptimalParameters(int svmsgdType, int marginType) Function sets optimal parameters values for chosen SVM SGD model.Parameters:svmsgdType - is the type of SVMSGD classifier.marginType - is the type of margin constraint.

#### setStepDecreasingPower public void setStepDecreasingPower(float stepDecreasingPower) getStepDecreasingPower SEE: getStepDecreasingPowerParameters:stepDecreasingPower - automatically generated

#### setSvmsgdType public void setSvmsgdType(int svmsgdType) getSvmsgdType SEE: getSvmsgdTypeParameters:svmsgdType - automatically generated

#### setTermCriteria public void setTermCriteria([TermCriteria](http://docs.google.com/org/opencv/core/TermCriteria.html) val) getTermCriteria SEE: getTermCriteriaParameters:val - automatically generated

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* [Next Class](http://docs.google.com/org/opencv/ml/TrainData.html)
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