We can make the use of ImageDataGenerator class by passing the appropriate parameters and passing the required input to it. How many images will be generated depends on the size of the batch and the input data set that contains a specific number of inputs? For example, if the size of the batch is defined as 10 and we pass 1000 images in the input of outset of data then the number of images that will generate in each and every iteration of the training will be 10. The syntax that can be used for using ImageDataGenerator is as defined in its class of it.

keras ImageDataGenerator Class

The definition of the class of image data generator is as shown below containing all the arguments or parameters that helps to define the behavior and way of performing the process.

Tensorflow.keras.preprocessing.image.ImageDataGenerator(

Preprocessing function = None, rotation range = 0, validation split = 0.0, fill mode = ‘nearest’, data format = None, dtype = None, samplewise std normalization = False, zca whitening = False, cval = 0.0, zoom range = 0.0, vertical flip = false, horizontal flip = false, rescale = None, height shift range = 0.0, samplewise center = false, featurewise center = false, featurewise std normalization = false, shear range = 0.0, channel shift range = 0.0, brightness range = None)

By using this class of image data generator we can iterate the data in batches that is data if looped over.

Various parameters used in the class definition are as discussed below in the tabular format –

|  |  |
| --- | --- |
| Parameter | Description |
| Feauturewise center | It is a Boolean value used for setting the value of the input to 0 for the particular data set in a feature-wise manner. |
| Samplewise center | This is also a Boolean value for the specification of setting the value of the mean for each of the individual samples to 0. |
| Featurewise stad normalization | The boolean value is used to represent whether the input data is to be divided by using the std that is defined by the set of data in a feature wise manner. |
| Samplewise std normalization | It is a Boolean value for referring to std to divide each of the individual input values. |
| Zca epsilon | The default value of this argument when not specified is 1e-6 and is used for the representation of epsilon for ZCA whitening. |
| Zca whitening | Boolean value to represent whether to apply or not the ZCA whitening. |
| Rotation range | This is an integer value for defining the range of degrees in random rotations. |

There are two more methods namely random\_transform and standardize that are used for the application of random transformation on image and normalization and configuration to the input batches respectively.