

## Data Collection and Preprocessing Phase

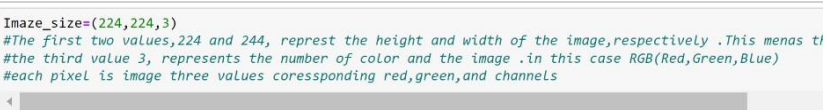
Date	16th June 2025
Team ID	SWTID1749740962
Project Title	Dog Breed Identification Using Transfer Learning
Maximum Marks	6 Marks

### Preprocessing Template

The images will be preprocessed by resizing, normalizing, augmenting, denoising, adjusting contrast, detecting edges, converting color space, cropping, batch normalizing, and whitening data. These steps will enhance data quality, promote model generalization, and improve convergence during neural network training, ensuring robust and efficient performance across various computer vision tasks.

Section	Description
Data Overview	Give an overview of the data, which you're going to use in your project.
Resizing	Resize images to a specified target size.
Normalization	Normalize pixel values to a specific range.
Data Augmentation	Apply augmentation techniques such as flipping, rotation, shifting, zooming, or shearing.
Denoising	Apply denoising filters to reduce noise in the images.
Edge Detection	Apply edge detection algorithms to highlight prominent edges in the images.

Color Space Conversion	Convert images from one color space to another.
Image Cropping	Crop images to focus on the regions containing objects of interest.
Batch Normalization	Apply batch normalization to the input of each layer in the neural network.
<b>Data Preprocessing Code Screenshots</b>	
Loading Data	<pre>In [1]: dataset_dir="/content/train" labels = pd.read_csv("/content/label.csv")</pre>
Resizing	<pre>: : from tensorflow.keras.preprocessing.image import ImageDataGenerator : train_datagen=ImageDataGenerator(rescale=1./255, shear_range=0.2, zoom_range=0.2, horizontal_flip=True)</pre>
Normalization	<pre>: : from tensorflow.keras.preprocessing.image import ImageDataGenerator : train_datagen=ImageDataGenerator(rescale=1./255, shear_range=0.2, zoom_range=0.2, horizontal_flip=True)</pre>
Data Augmentation	<pre>##### datagen = ImageDataGenerator() generator = datagen.flow_from_directory( "/content/subset/train", target_size=(224,224), batch_size=32, class_mode='categorical', shuffle=False )</pre>
Denoising	Give the code snippet as an image (copy and paste the picture in this block).
Edge Detection	Give the code snippet as an image (copy and paste the picture in this block).

Color Space Conversion	 <pre>Image_size=(224,224,3) #The first two values,224 and 244, repret the height and width of the image,respectively .This menas t/ #the third value 3, represents the number of color and the image .in this case RGB(Red,Green,Blue) #each pixel is image three values coressponding red,green,and channels</pre>
Image Cropping	Give the code snippet as an image (copy and paste the picture in this block).
Batch Normalization	Give the code snippet as an image (copy and paste the picture in this block).