**WEEK-3**

**AIM:**

Write a program for edge detection to extract edge based features from a sample

image.

**Description:**

Another very popular format of unstructured data is images. Sound and visual data in

the form of images,video, and audio are very popular sources of data which pose a lot

of challenge to data scientists in terms of processing, storage, feature extraction and

modeling.

Due to the unstructured

nature of data, it is not possible to directly use images for training models.

The scikit-image (skimage) library is an excellent framework consisting of several useful

interfaces and algorithms for image processing and feature extraction.

**Code:**

from google.colab import drive

drive.mount('/content/drive')

import skimage

import numpy as np

import pandas as pd

import matplotlib.pyplot as plt

from skimage import io

%matplotlib inline

cat = io.imread('/content/drive/MyDrive/Academics/5th sem/ml lab/cat.jpg')

dog = io.imread('/content/drive/MyDrive/Academics/5th sem/ml lab/dog.jpg')

df = pd.DataFrame(['Cat', 'Dog'], columns=['Image'])

from skimage.color import rgb2gray

cgs = rgb2gray(cat)

dgs = rgb2gray(dog)

from skimage.feature import canny

cat\_edges = canny(cgs, sigma=3)

dog\_edges = canny(dgs, sigma=3)

fig = plt.figure(figsize = (8,4))

ax1 = fig.add\_subplot(1,2, 1)

ax1.imshow(cat\_edges, cmap='binary')

ax2 = fig.add\_subplot(1,2, 2)

ax2.imshow(dog\_edges, cmap='binary')

**Output:**

<matplotlib.image.AxesImage at 0x7f545ac50d10>

