**Aim: Utilization of SIFT and HOG features for image analysis**

% Load an image

img = imread('one.jpeg'); % Replace 'example.jpg' with your image file

% Convert the image to grayscale if it's in color

if size(img, 3) == 3

img = rgb2gray(img);

end

% Initialize VLFeat

run('vlfeat-0.9.21/toolbox/vl\_setup');

% Extract SIFT features

[f, d] = vl\_sift(single(img));

% Visualize SIFT features on the image

figure;

imshow(img);

title('Original Image');

% Overlay keypoints on the original image

hold on;

plot(f(1, :), f(2, :), 'r\*');

hold off;

% Create a HOG feature extractor

hogExtractor = vision.HOGDescriptor;

% Extract HOG features

hogFeatures = extractHOGFeatures(img);

% Display HOG features

figure;

subplot(1, 2, 1);

imshow(img);

title('Original Image');

subplot(1, 2, 2);

plot(hogFeatures);

title('HOG Features');

% Perform further analysis using SIFT and HOG features as needed

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