Clc; clear; close all;

% Load the image

Img = imread(‘input.jpg’); % Change filename if needed

grayImg = rgb2gray(img);

% Detect face using a Haar Cascade Detector

faceDetector = vision.CascadeObjectDetector();

bboxes = faceDetector(grayImg);

% Display detected face

Figure; imshow(img); hold on;

For I = 1:size(bboxes, 1)

Rectangle(‘Position’, bboxes(I, ☺, ‘EdgeColor’, ‘r’, ‘LineWidth’, 2);

End

Title(‘Detected Face’);

% Extract features using HOG

Features = [];

For I = 1:size(bboxes, 1)

faceRegion = imcrop(grayImg, bboxes(I, ☺);

faceResized = imresize(faceRegion, [64, 64]); % Resize for uniformity

hogFeature = extractHOGFeatures(faceResized);

features = [features; hogFeature];

end

% Load a pre-trained classifier

Load(‘trainedExpressionClassifier.mat’); % Ensure you have a trained model

% Predict facial expression

predictedLabel = predict(trainedClassifier, features);

% Display result

For I = 1:size(bboxes, 1)

Text(bboxes(I, 1), bboxes(I, 2) – 10, predictedLabel{i}, …

‘Color’, ‘yellow’, ‘FontSize’, 12, ‘FontWeight’, ‘bold’);

End

Hold off;