**Image recognition circuit code**

% Initialize Arduino

a = arduino('COM5', 'Mega2560');

% Configure pin A0 as a digital output

configurePin(a, 'A0', 'DigitalOutput');

% Capture two images (replace with your image capture code)

image1 = imread('T1.jpg');

image2 = imread('T2.jpg');

% Convert images to grayscale

grayImage1 = rgb2gray(image1);

grayImage2 = rgb2gray(image2);

% Calculate the absolute difference between the images

diffImage = abs(double(grayImage1) - double(grayImage2));

% Threshold the difference image

threshold = 50; % Adjust this value as needed

binaryDiff = diffImage > threshold;

% Check if there is any difference

if any(binaryDiff(:))

% Send command to Arduino to turn on the LED

writeDigitalPin(a, 'A0', 1);

else

% Send command to Arduino to turn off the LED

writeDigitalPin(a, 'A0', 0);

end