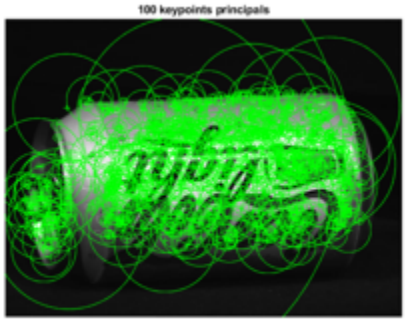
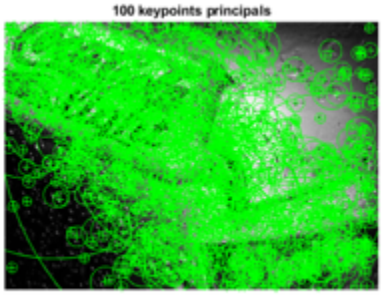
```
im = imread('rabbit.jpg');
corners = detectHarrisFeatures(im);

imshow(im);
hold on;
plot(corners);
```

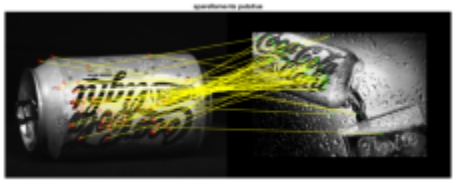
KeyPoints detection with SIFT

```
im_obj = imread('coke.jpg');
figure; imshow(im_obj); title('imatge objecte');
pause(0.5);
im_obj = rgb2gray(im_obj);

im_esc = rgb2gray(imread('anunci.jpg'));
figure; imshow(im_esc); title('imatge escena');
pause(0.5);

% 1- deteccio
kp_obj = detectSIFTFeatures(im_obj);
kp_esc = detectSIFTFeatures(im_esc);

figure; imshow(im_obj); title('100 keypoints principals');
hold on;
plot(selectStrongest(kp_obj,743));

figure; imshow(im_esc); title('100 keypoints principals');
hold on;
plot(selectStrongest(kp_esc,1535));

% 2- Descriptors
[feat_obj, kp_obj] = extractFeatures(im_obj, kp_obj);
[feat_esc, kp_esc] = extractFeatures(im_esc, kp_esc);

% 3- Aparellar
pairs = matchFeatures(feat_obj,feat_esc,'MatchThreshold',10);
```

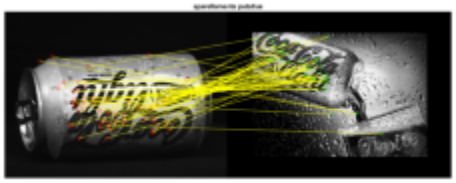
```
matched_kp_obj = kp_obj(pairs(:,1),:);
matched_kp_esc = kp_esc(pairs(:,2),:);

% 4- Matching
figure;
showMatchedFeatures(im_obj, im_esc, matched_kp_obj, matched_kp_esc,
'montage');
title('aparellaments putatius');
```

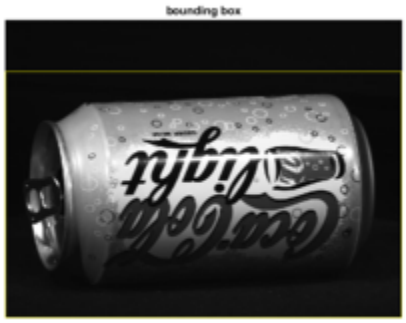


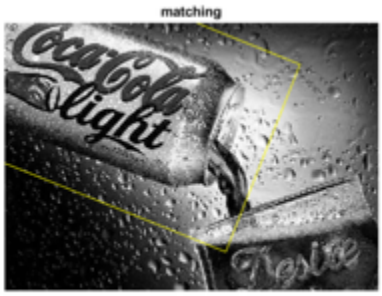




```
[tform, inliers] = estimateGeometricTransform2D(matched_kp_obj,
matched_kp_esc, 'affine');
inlier_kp_obj = matched_kp_obj(inliers,:);
inlier_kp_esc = matched_kp_esc(inliers,:);

[miday, midax] = size(im_obj);
box_obj = [1,100;midax,100;midax,miday;1,miday;1,100];
figure, imshow(im_obj);
hold on;
line(box_obj(:,1), box_obj(:,2), 'color', 'y');
title('bounding box');

box_esc = transformPointsForward(tform, box_obj);
figure, imshow(im_esc);
hold on;
line(box_esc(:,1), box_esc(:,2), 'color', 'y');
title('matching');
```







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