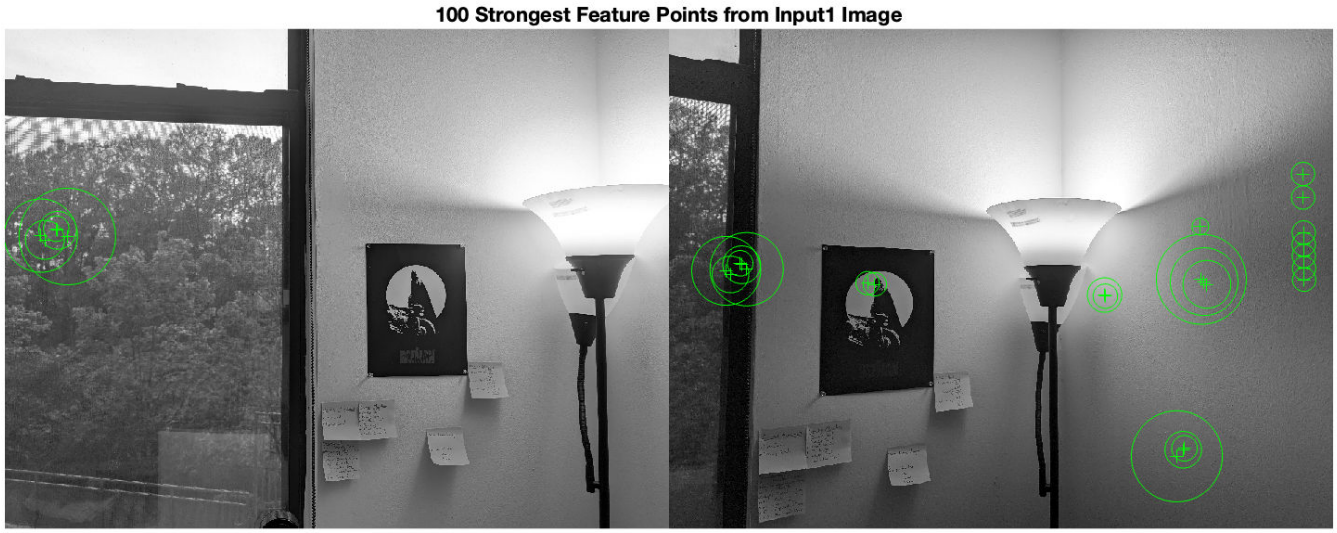
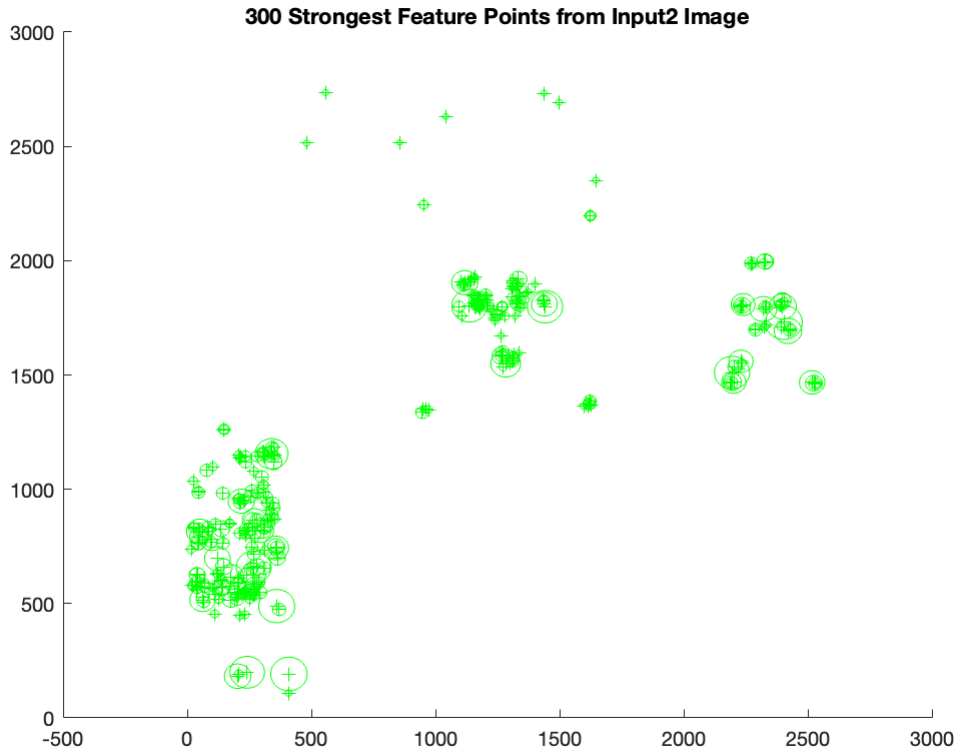
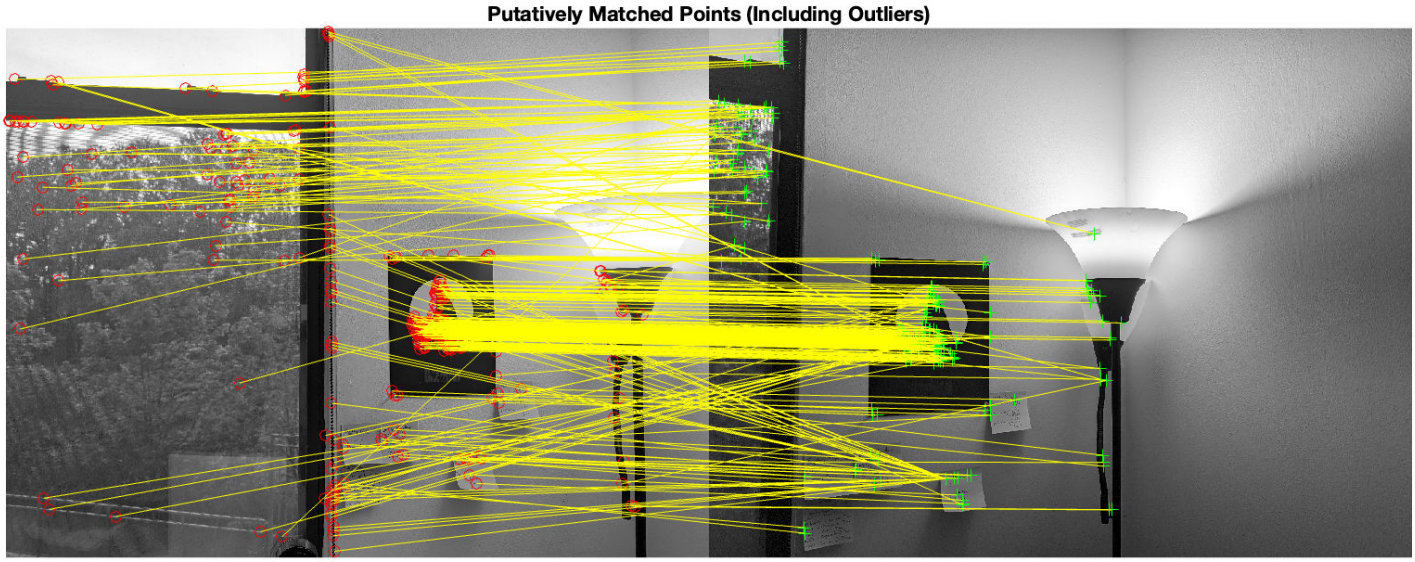
```
left = rgb2gray(imread('/Users/sathwikchowda/Desktop/Object detection/left.jpg'));
right = rgb2gray(imread('/Users/sathwikchowda/Desktop/Object detection/right.jpg'));
montage({left,right})


Input1_Points = detectSURFFeatures(left);
Input2_Points = detectSURFFeatures(right);
title('100 Strongest Feature Points from Input1 Image');
hold on;
plot(selectStrongest(Input1_Points, 100));
```



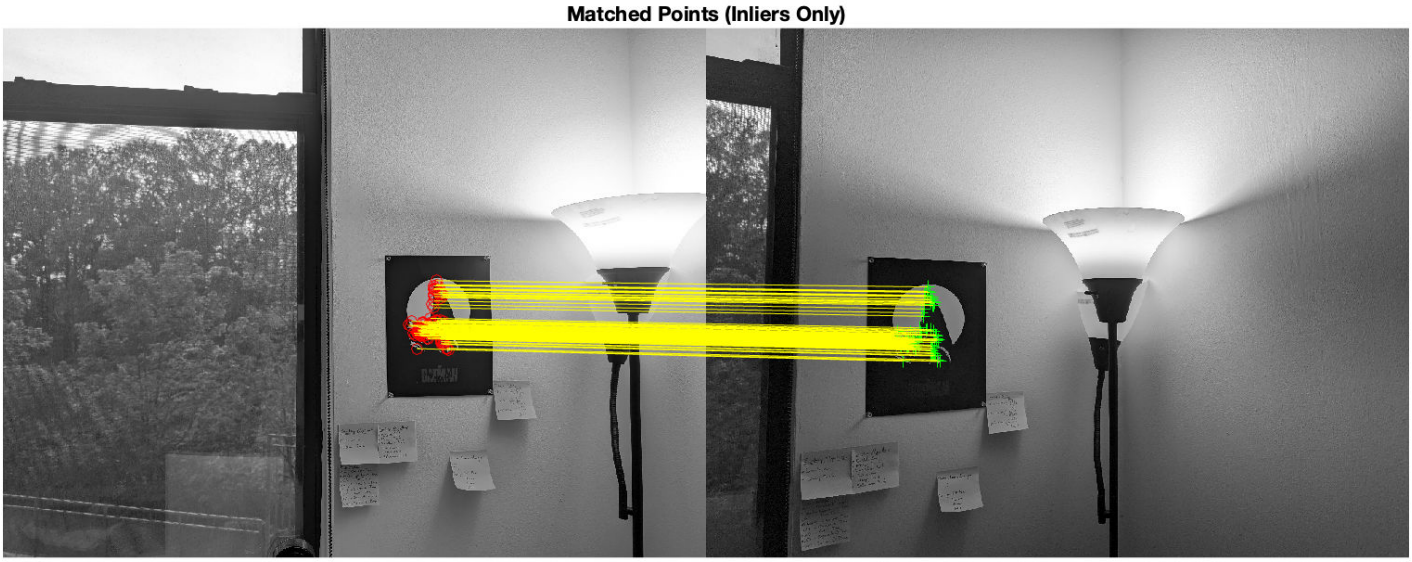

```
figure;
title('300 Strongest Feature Points from Input2 Image');
hold on;
plot(selectStrongest(Input2_Points, 300));
```




```
figure;



[Input1_Features, Input1_Points] = extractFeatures(left, Input1_Points);
[Input2_Features, Input2_Points] = extractFeatures(right, Input2_Points);


Input_Pairs= matchFeatures(Input1_Features, Input2_Features);
matched_Input1_Points = Input1_Points(Input_Pairs(:, 1), :);
matched_Input2_Points = Input2_Points(Input_Pairs(:, 2), :);
figure;


showMatchedFeatures(left, right , matched_Input1_Points, ...
    matched_Input2_Points, 'montage');

title('Putatively Matched Points (Including Outliers)');
```




```
[tform, inlierIdx] = ...
    estimateGeometricTransform2D(matched_Input1_Points, matched_Input2_Points, 'affine
inlier_Input1_Points   = matched_Input1_Points(inlierIdx, :);
inlier_Input2_Points = matched_Input2_Points(inlierIdx, :);
figure;

showMatchedFeatures(left, right, inlier_Input1_Points, ...
    inlier_Input2_Points, 'montage');
title('Matched Points (Inliers Only)');
```




```
Input_Polygon = [1, 1;...                               % top-left
        size(left, 2), 1;...                    % top-right
        size(left, 2), size(left, 1);... % bottom-right
        1, size(left, 1);...                    % bottom-left
        1, 1];
new_Input_Polygon = transformPointsForward(tform, Input_Polygon);
figure;
imshow(right);
hold on;

line(new_Input_Polygon(:, 1), new_Input_Polygon(:, 2), 'Color', 'y');
title('Detected Box');
```

Detected Box