q6

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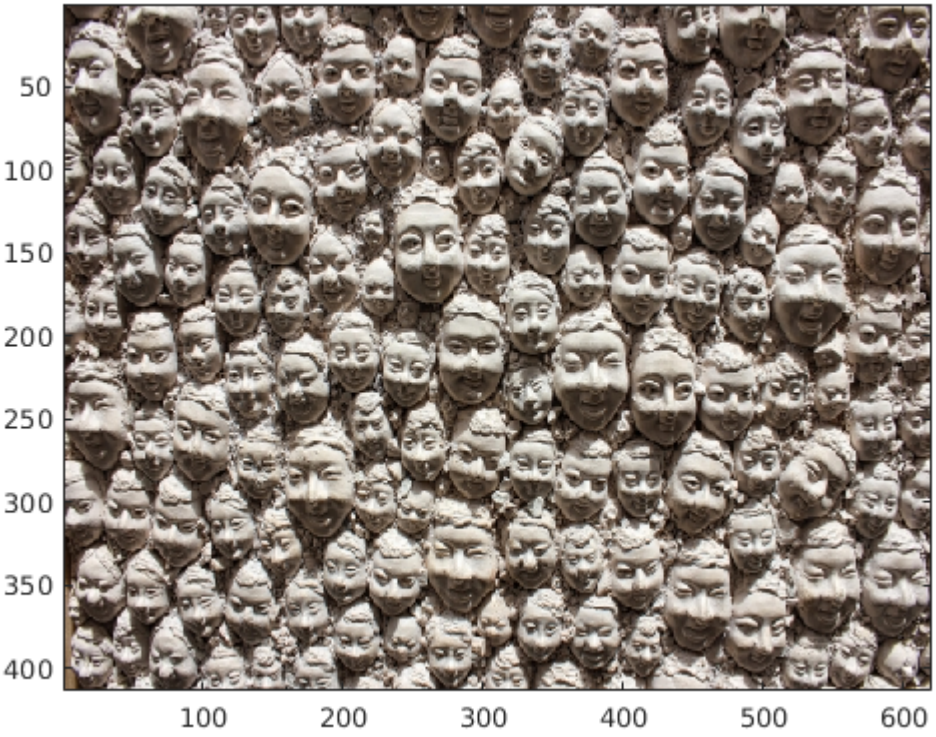
1 Sub Image Detection using Cross Correlation

In [2]:
```
img = imread('./Faces.jpg');
image(img)
img = rgb2gray(img);
```

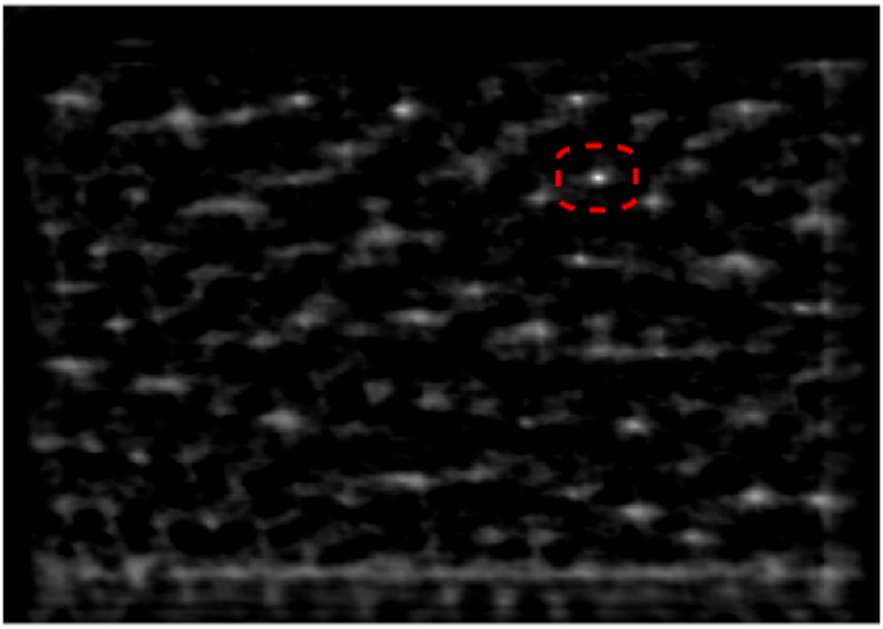


In [3]:
```
sub_img = imread('./F1.jpg');
image(sub_img)
sub_img = rgb2gray(sub_img);
```

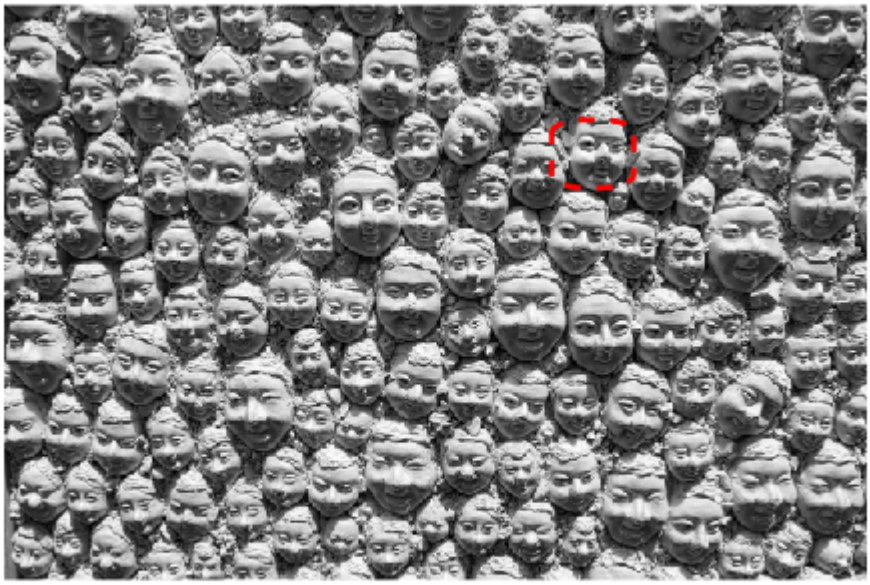

```
In [4]: new_img = normxcorr2(sub_img(:,:,1),img(:,:,1));

In [5]: [val,p] = max(new_img(:));
        x = floor(p/size(new_img,1))
        y = p - x*size(new_img,1)
```

```
x =

   453


y =

   132
```

```
In [6]: imshow(new_img);
        hold on;
        % Then, from the help:
        rectangle('Position',[x - size(sub_img,1)/2,y - size(sub_img,2)/2,size(sub_img,1),size(sub_img,
                  'Curvature',[0.8,0.4],...
                 'LineWidth',2,'LineStyle','--','EdgeColor','r')
```



In [8]:
```
imshow(img);
hold on;
% Then, from the help:
rectangle('Position',[x - size(sub_img,1),y - size(sub_img,2),size(sub_img,1),size(sub_img,2)],
          'Curvature',[0.8,0.4],...
         'LineWidth',2,'LineStyle','--','EdgeColor','r')
```



1.1 Report

- We can see various white spots in the final correlation image
- These dots represent the highly similiar sections with the corresponding sub_image
- Hence we can say we detected the subimage at these locations in the original image

In [ ]: