Lab 6

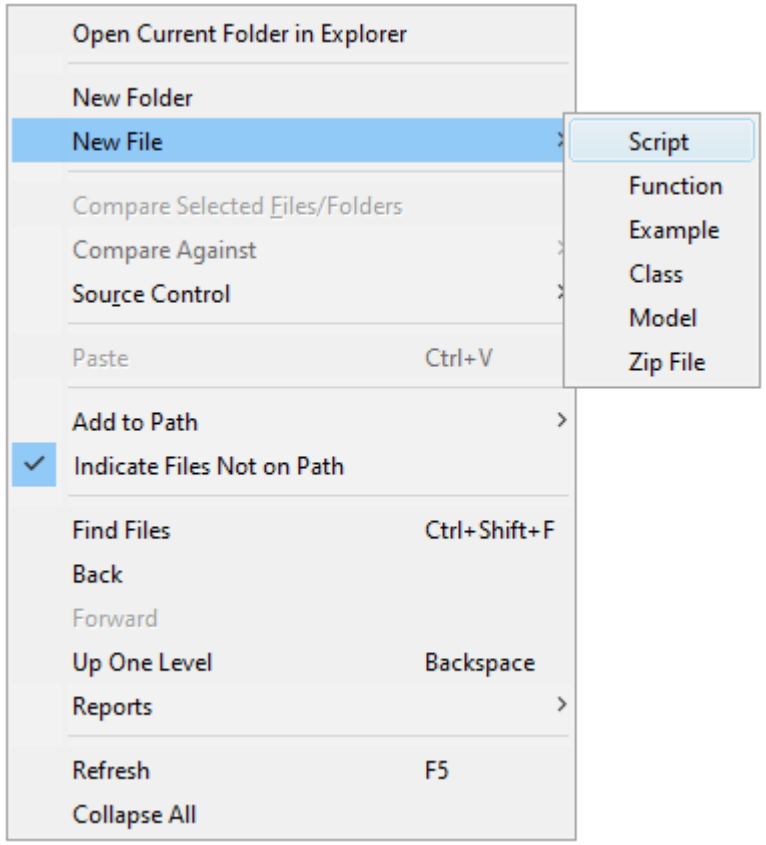
CPS592 – Visual Computing and Mixed Reality

Preparation

- Open MATLAB
- Create Lab6 folder
- Copy *deer.jpg* and *sign.jpg* to Lab6 folder

Create script file for Lab 6

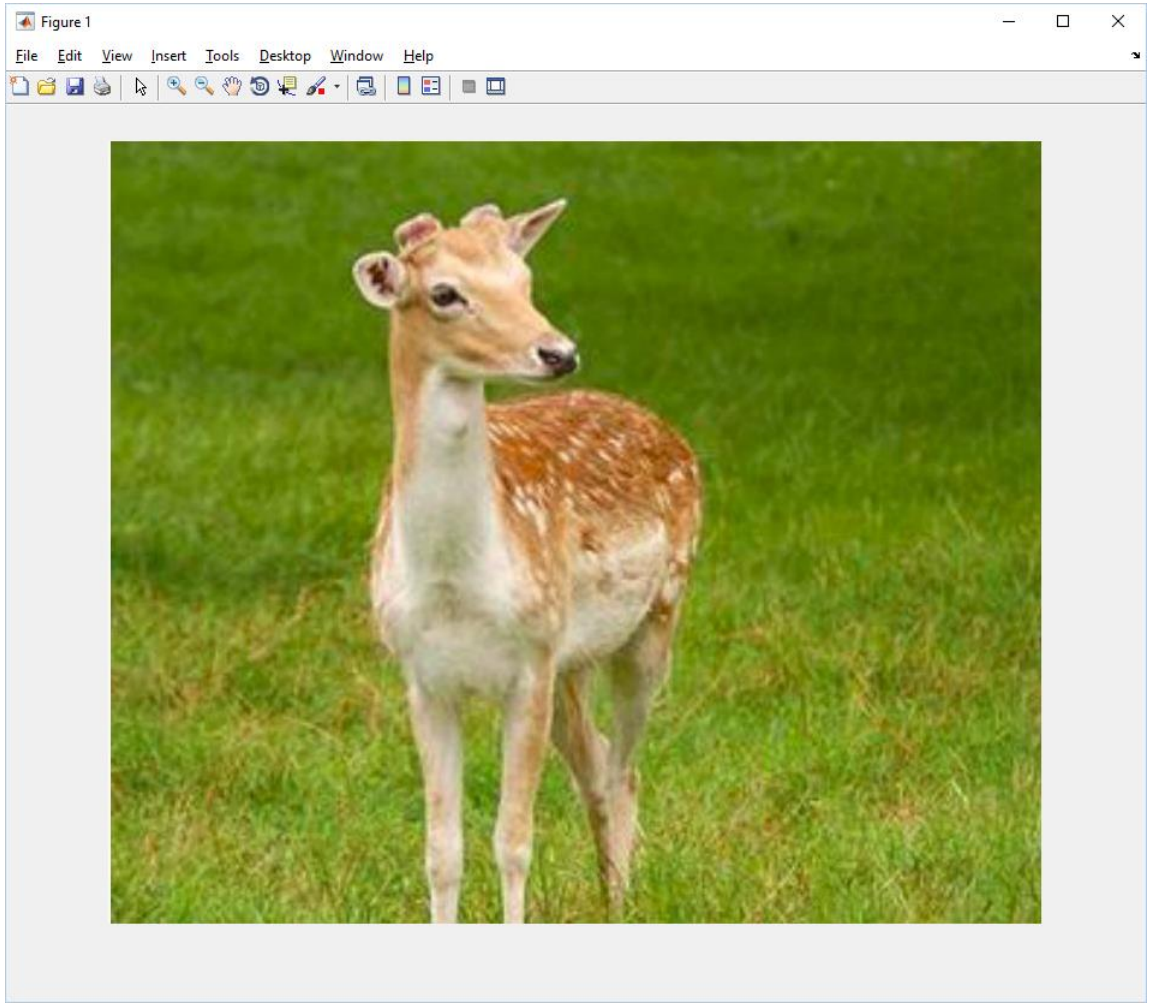
- Create Lab6.m script



Read the images

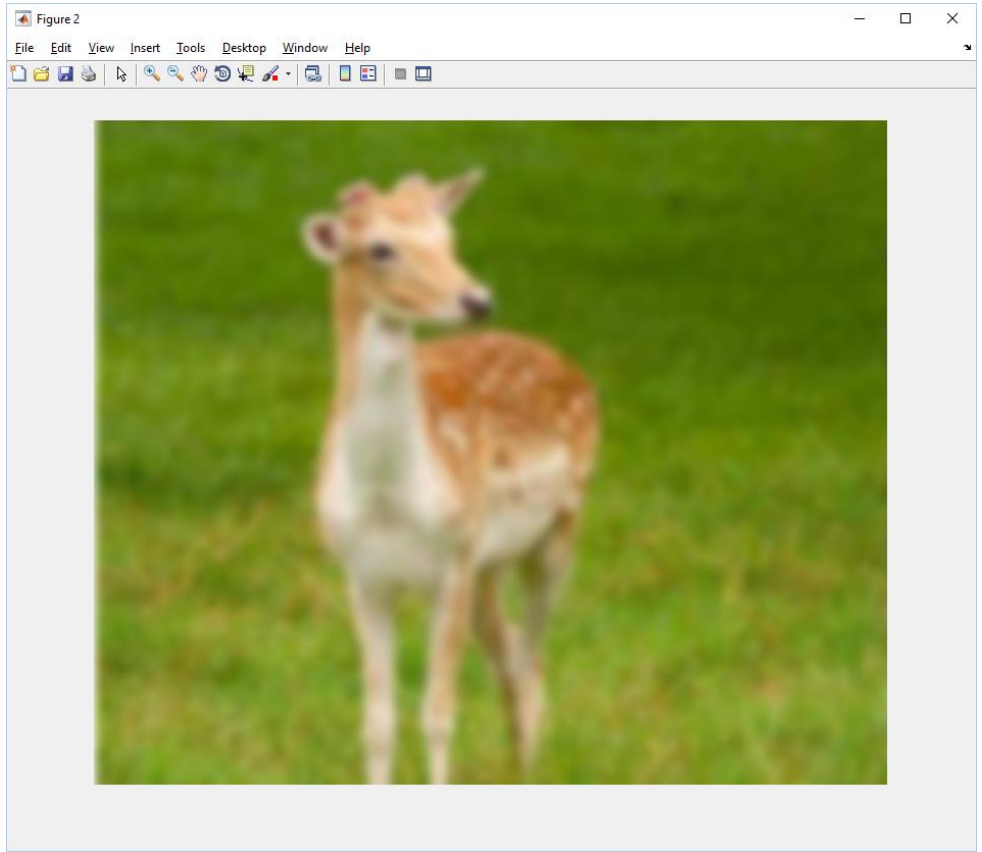
```
close all;
clear all;
clc;

img = imread(deer.jpg');
figure, imshow(img);
```



Apply Gaussian filtering

```
gaussian_kernel = fspecial('gaussian', [25 25], 5);
img_gaussian = imfilter(img, gaussian_kernel, 'replicate');
figure, imshow(img_gaussian);
```



Convert the Gaussian result to Lab

```
lab = rgb2lab(img_gaussian);
```

Compute mean color of each channel

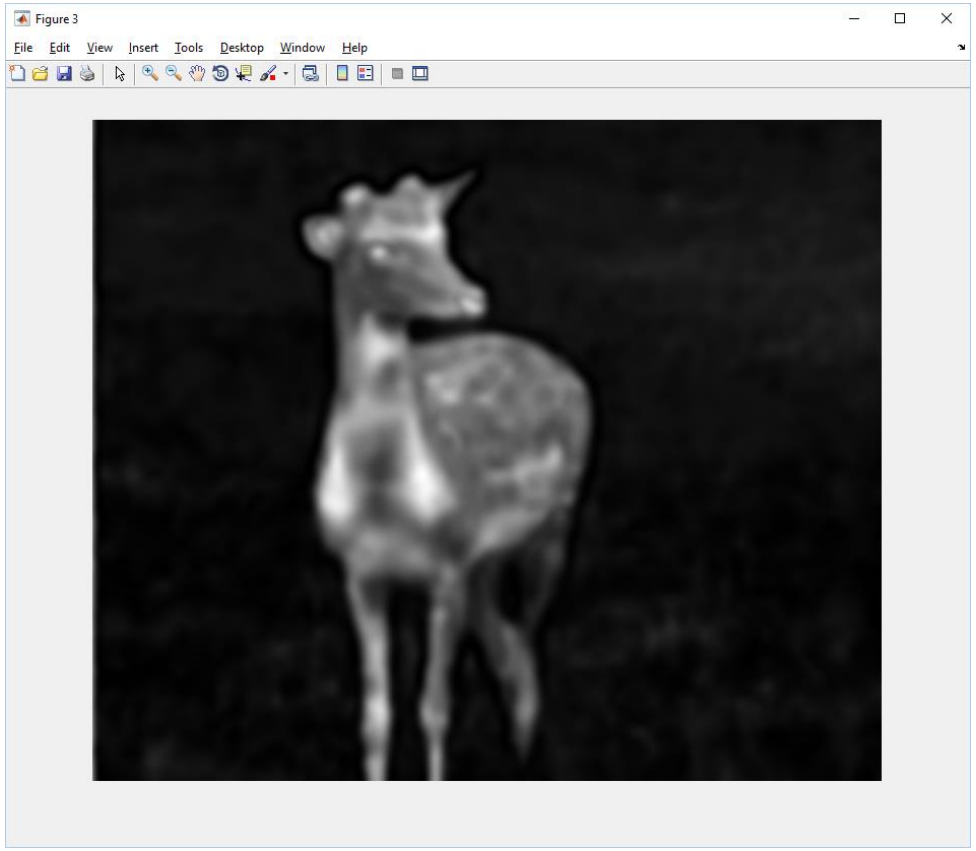
```
l = double(lab(:,:,1));
lm = mean(mean(l));

a = double(lab(:,:,2));
am = mean(mean(a));

b = double(lab(:,:,3));
bm = mean(mean(b));
```

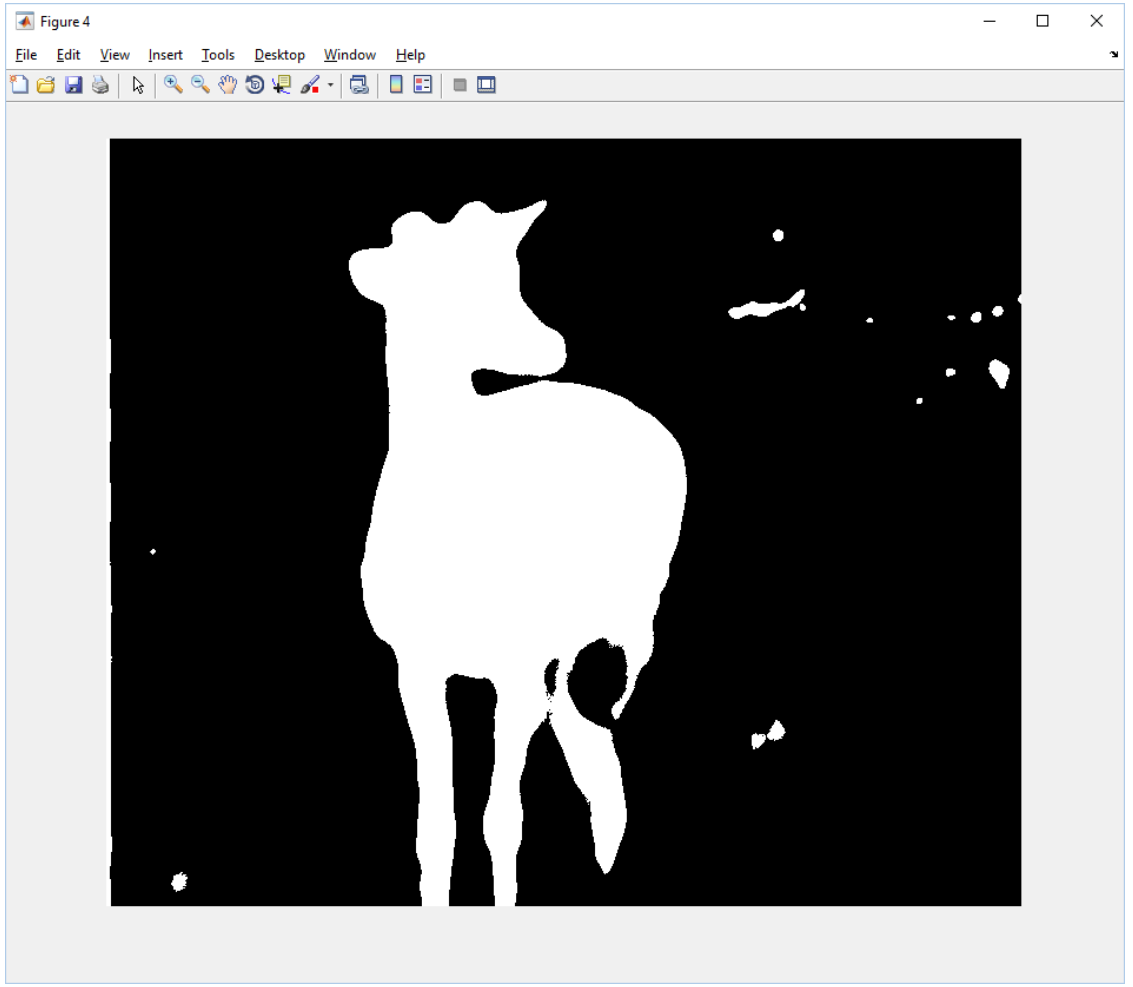
Compute saliency map

```
sm = (l-lm).^2 + (a-am).^2 + (b-bm).^2;
figure, imshow(sm,[]);
```



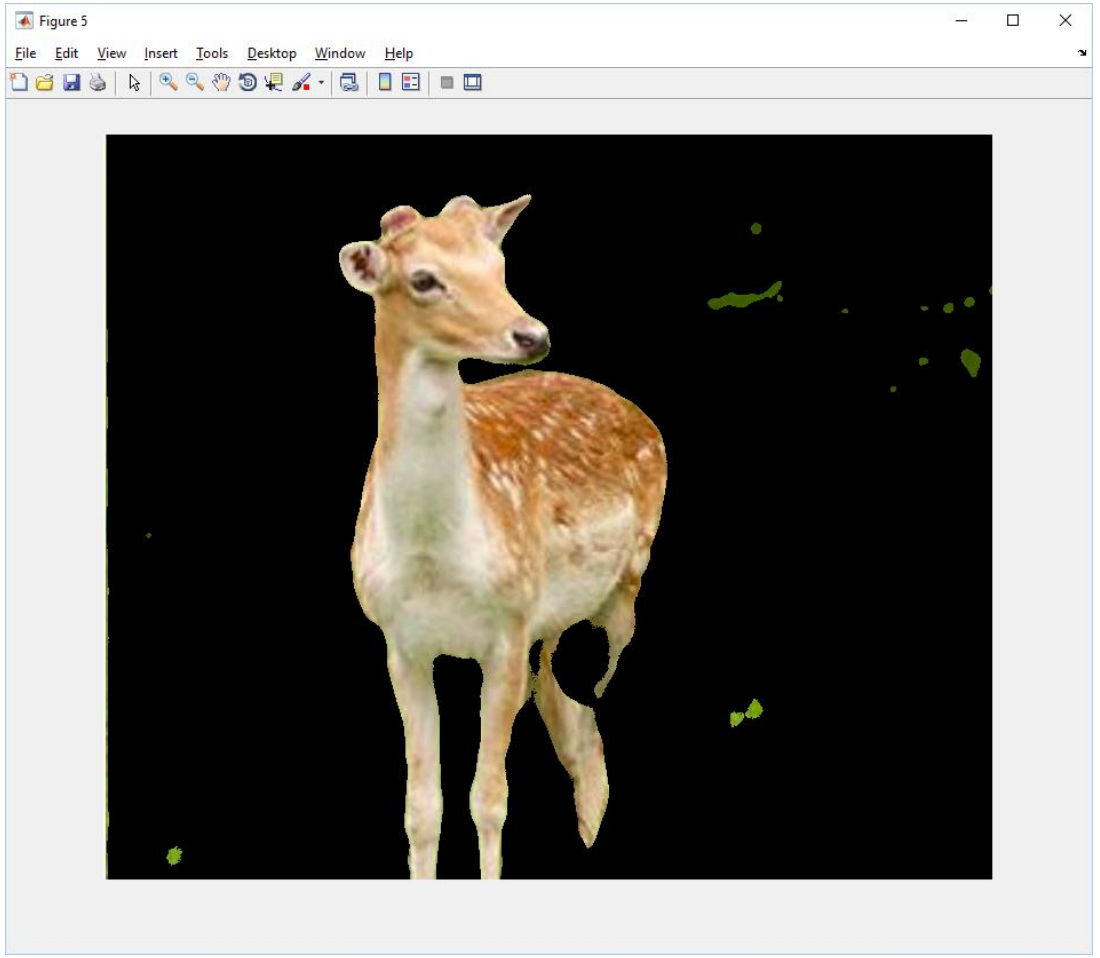
Compute binary map and display it

```
mean_value = mean(sm(:));
sm(sm < mean_value) = 0;
sm(sm >= mean_value) = 1;
figure, imshow(sm,[]);
```



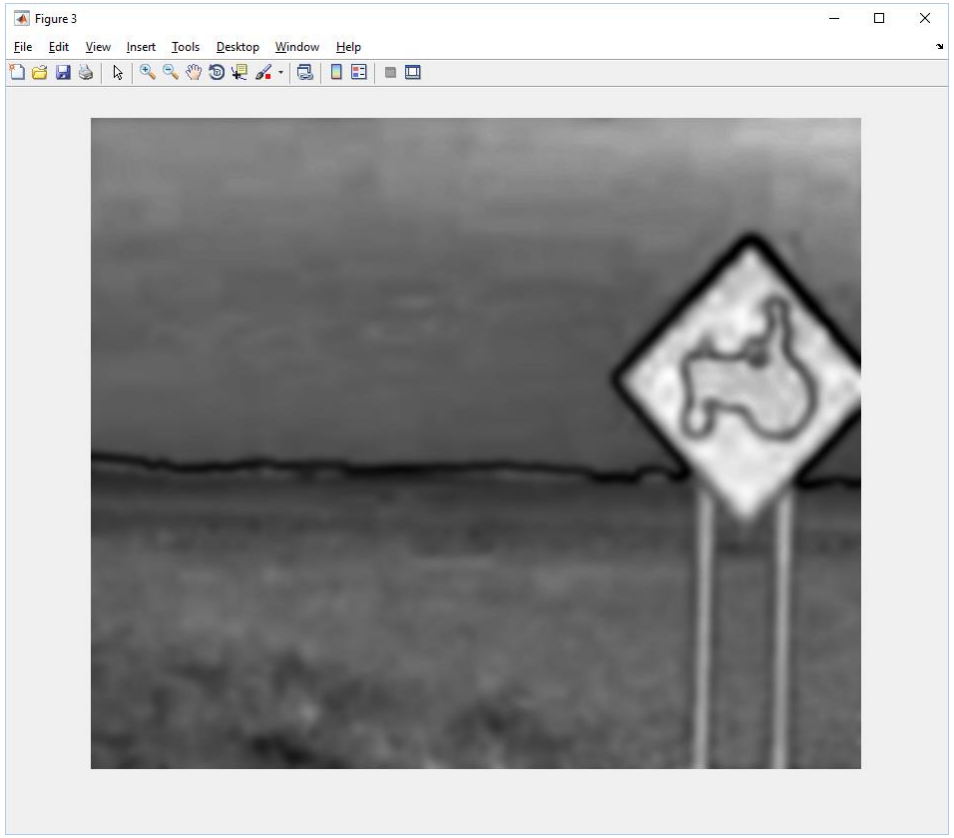
Extract the salient regions

```
for c = 1:3
    img(:,:,c) = img(:,:,c) .* uint8(sm);
end
figure, imshow(img);
```



Try the algorithm with different images

```
img = imread(sign.jpg');
```



Q&A