```matlab
% Load the image
img = imread('img.jpg');

% Convert to grayscale if the image is RGB
if size(img, 3) == 3
    img = rgb2gray(img); % Convert to grayscale
end

% Create a binary mask (replace 'your_condition' with your specific condition)
mask = img > 100; % Example: Pixels greater than 100 are considered part of the region of interest

% Apply low-pass filters
gaussian_filtered = imgaussfilt(img, 2); % Gaussian filter with sigma = 2
average_filtered = imfilter(img, ones(5) / 25); % Average filter with 5x5 kernel

% Apply high-pass filters
laplacian_filtered = imfilter(img, [-1 -1 -1; -1 8 -1; -1 -1 -1]); % Laplacian filter
prewitt_filtered = imfilter(img, [1 0 -1; 2 0 -2; 1 0 -1]); % Prewitt filter (x-direction)

% Display the results
figure();

imshow(img);
title('Original Image');
```

Original Image


```
imshow(mask);
title('Binary Mask');
```

Binary Mask


```
imshow(gaussian_filtered);
title('Gaussian Filtered');
```
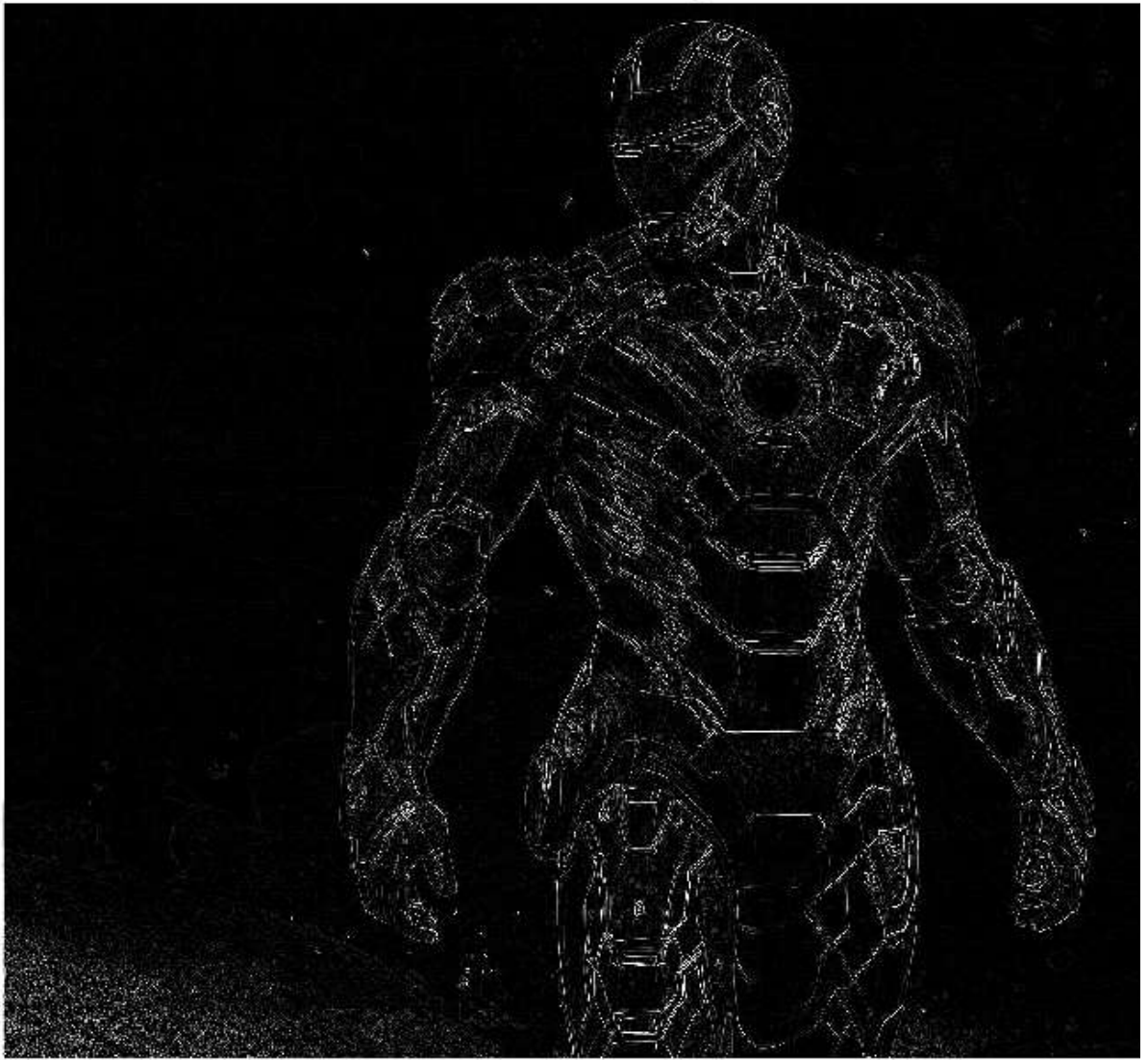
Gaussian Filtered


```
imshow(average_filtered);
title('Average Filtered');
```

Average Filtered


```
imshow(laplacian_filtered);
title('Laplacian Filtered');
```

Laplacian Filtered


```
imshow(prewitt_filtered);
title('Prewitt Filtered');
```

Prewitt Filtered