

# Sobel Filter

In [23]:

```
import cv2
import matplotlib.pyplot as plt
import numpy as np
```

In [24]:

```
imgfile = '../db/jenny.jpg'
img= cv2.imread(imgfile, cv2.IMREAD_GRAYSCALE)
```

In [25]:

```
#Making image blurry so it has less noise
K =3
img = cv2.GaussianBlur(img, (K,K), cv2.BORDER_CONSTANT)
```

In [26]:

```
ddepth = cv2.CV_16S #16 bits com sinal.
grad_x = cv2.Sobel(img, ddepth, 1,0, ksize=3,scale =1, delta=0, borderType=cv2.BORDER_DEFAULT)
grad_y = cv2.Sobel(img, ddepth, 0,1, ksize=3,scale =1, delta=0, borderType=cv2.BORDER_DEFAULT)

abs_grad_x = cv2.convertScaleAbs(grad_x)
abs_grad_y = cv2.convertScaleAbs(grad_y)
grad = cv2.addWeighted(abs_grad_x, 0.5, abs_grad_y, 0.5, 0)
```

In [27]:

```
plt.figure(figsize = (8,4))
plt.subplot(121), plt.title('Original'), plt.imshow(img, cmap='gray')
plt.subplot(122), plt.title('Contours'), plt.imshow(grad, cmap='gray')
plt.show()
```

