

# atelier\_tp1

January 19, 2021

```
[11]: import cv2
import numpy as np
from matplotlib import pyplot as plt
from PIL import Image
```

```
[12]: def getPixel(img, center, x, y):
    value = 0
    try:
        if img[x][y] >= center:
            value = 1
    except:
        pass
    return value
```

```
[13]: def calculLBP(img, x, y):
    center = img[x][y]
    valueArray = []
    valueArray.append(getPixel(img, center, x-1, y+1))    # top_right
    valueArray.append(getPixel(img, center, x, y+1))      # right
    valueArray.append(getPixel(img, center, x+1, y+1))    # bottom_right
    valueArray.append(getPixel(img, center, x+1, y))      # bottom
    valueArray.append(getPixel(img, center, x+1, y-1))    # bottom_left
    valueArray.append(getPixel(img, center, x, y-1))      # left
    valueArray.append(getPixel(img, center, x-1, y-1))    # top_left
    valueArray.append(getPixel(img, center, x-1, y))      # top

    factorArray = [1, 2, 4, 8, 16, 32, 64, 128]
    val = 0
    for i in range(len(valueArray)):
        val += valueArray[i] * factorArray[i]
    return val
```

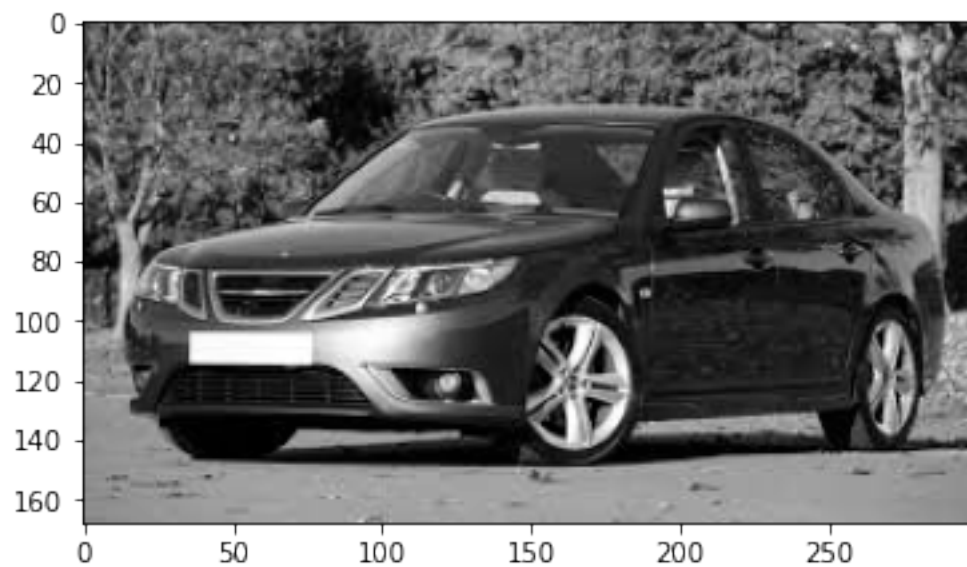
```
[14]: img = cv2.imread('car.jpg')
height, width, channel = img.shape
plt.imshow(img, cmap='gray')
```

```
[14]: <matplotlib.image.AxesImage at 0x2aeab00b520>
```



```
[15]: gray = cv2.cvtColor(img, cv2.COLOR_BGR2GRAY)
plt.imshow(gray, cmap='gray')
```

```
[15]: <matplotlib.image.AxesImage at 0x2aeab06b100>
```



```
[16]: lbp = np.zeros((height, width, 3), np.uint8)
for i in range(0, height):
    for j in range(0, width):
```

```
lbp[i, j] = calculLBP(gray, i, j)
```

```
[17]: result = Image.fromarray(lbp, 'RGB')  
plt.imshow(result, cmap='gray')
```

```
[17]: <matplotlib.image.AxesImage at 0x2aeab0c2c40>
```

