بسم الله الرحمن الرحیم

Shiraz University

INTRODUCTION TO OPENCV

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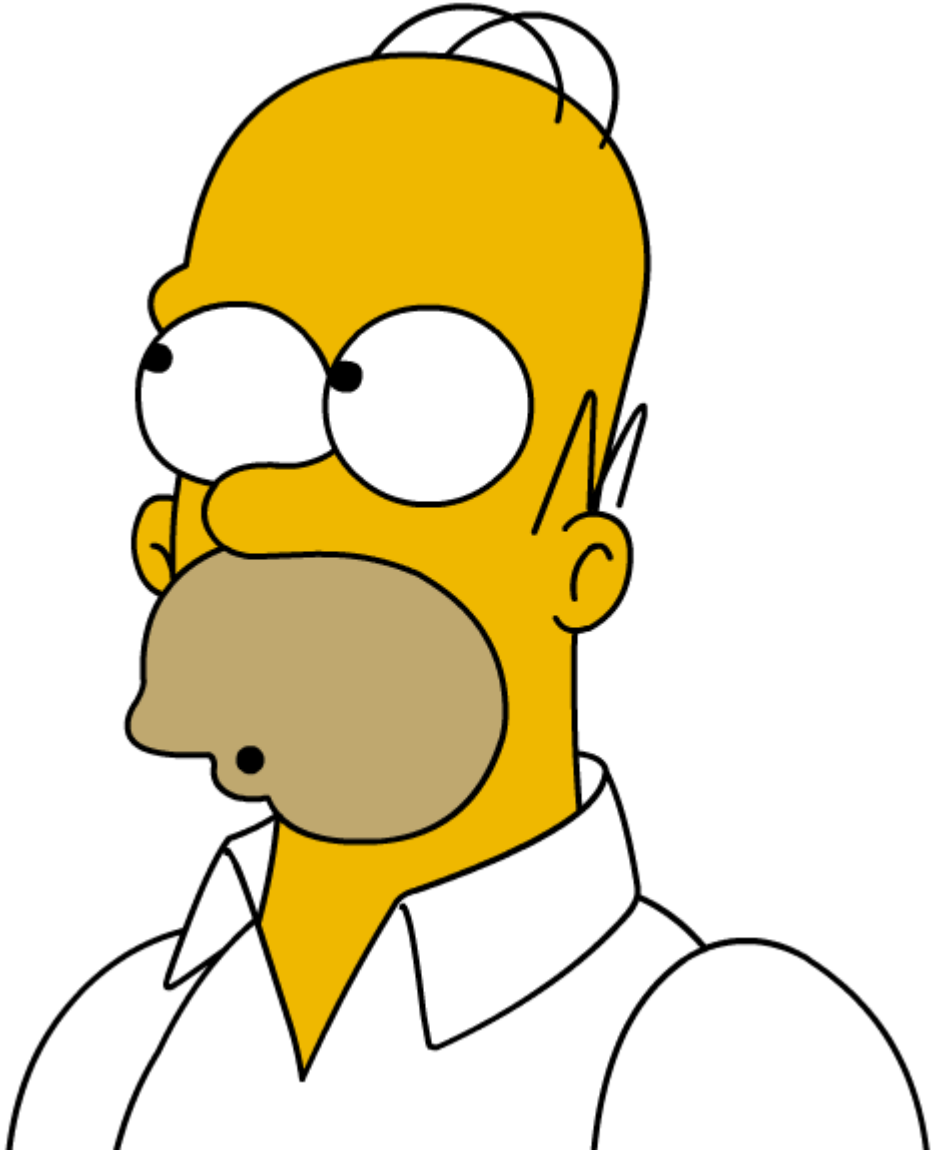
AGENDA

- Introduction to OpenCV
- Explaining Some Basics of Image processing
- Coding a simple object tracking in OpenCV

WHAT IS OPENCV ?!



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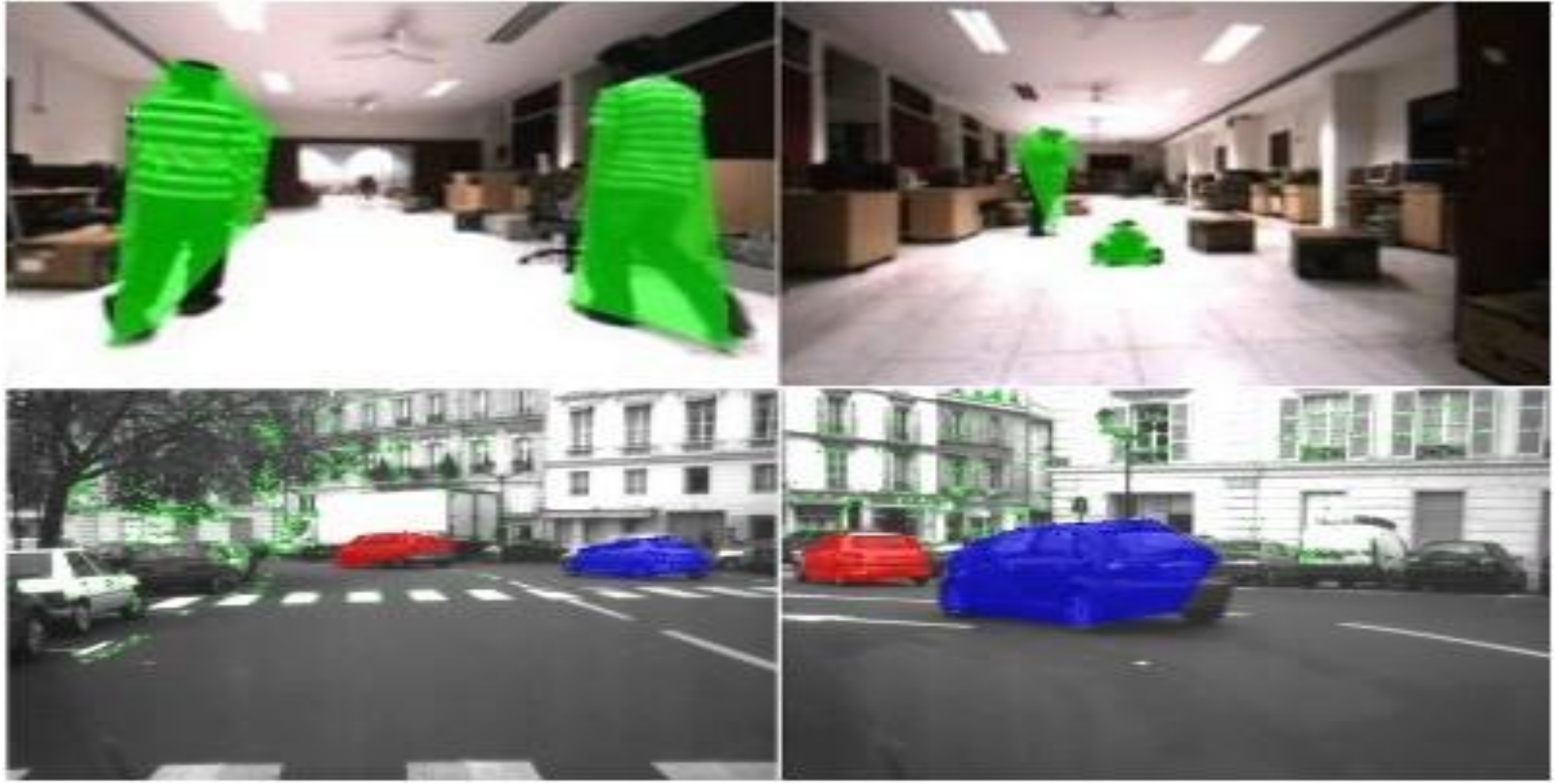
- OpenCV is an Image Processing library created by Intel and maintained by Willow Garage.
- Available for C, C++, Python, java and MATLAB.
- Newset Stable update is version v2.4.13.
- Over 500 functions
- Open Source and free
- Easy to use and install

FACE/OBJECT RECOGNITION



OBJECT TRACKING

FILTERING IMAGES (LAPLACE, SOBEL , ...)

LET'S DEFINE SOME BASICS

MONOCHROME / THRESHOLD

GRAYSCALE

BGR / RBG (RED, BLUE, GREEN)

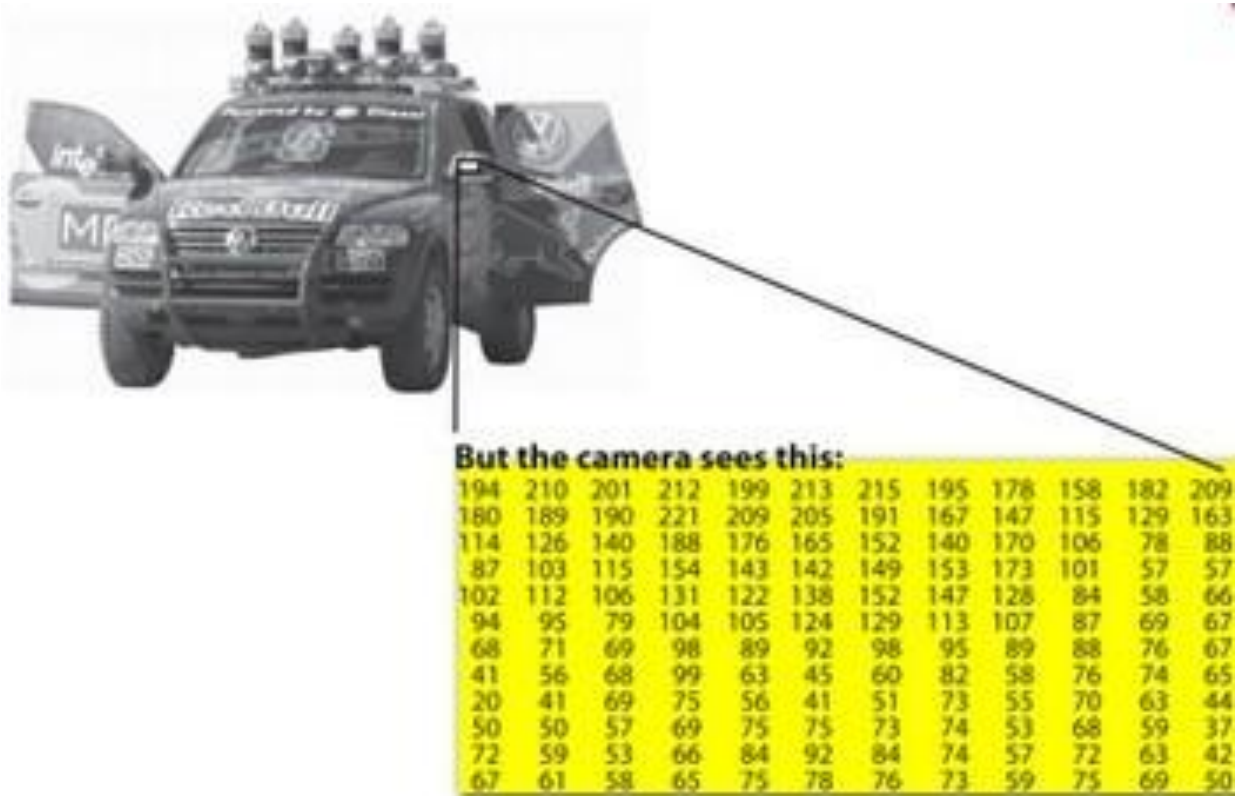
CHANNELS

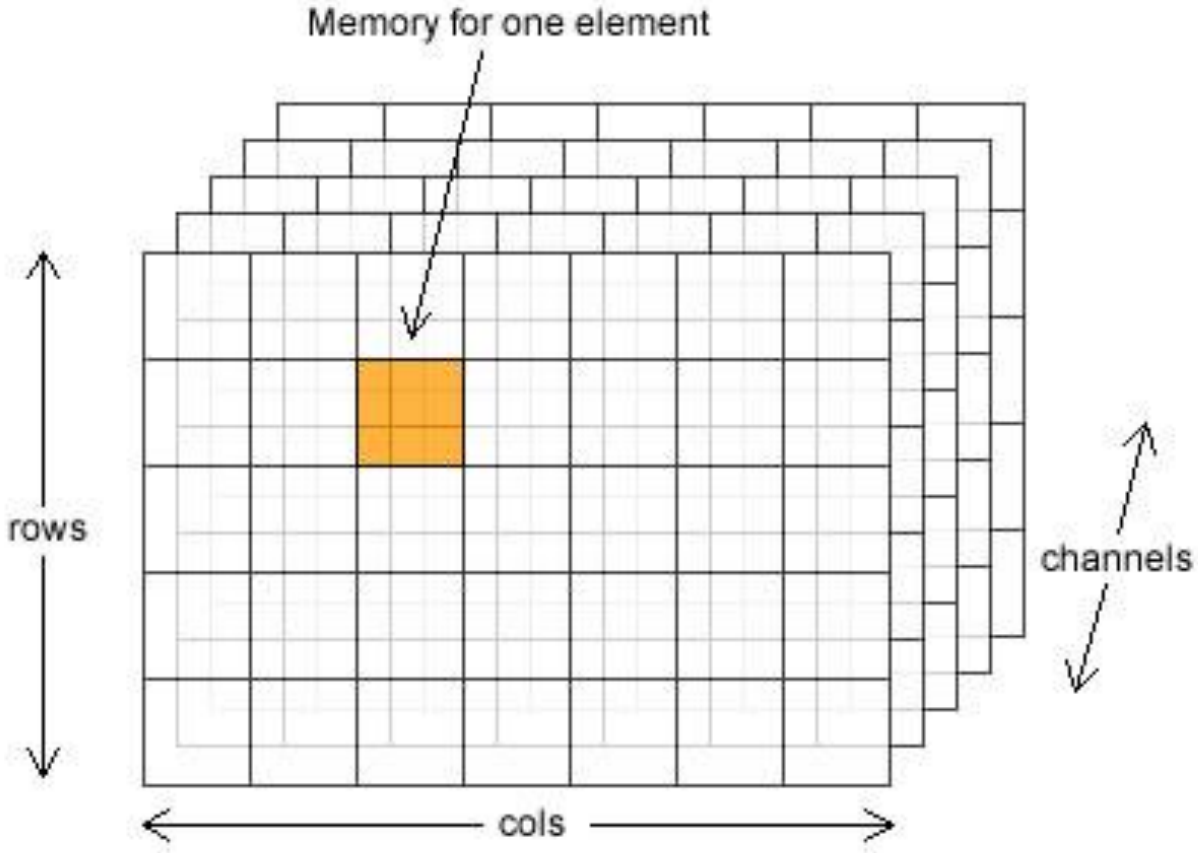
Red

green

blue

IMAGE CONTAINER(MATRIX)





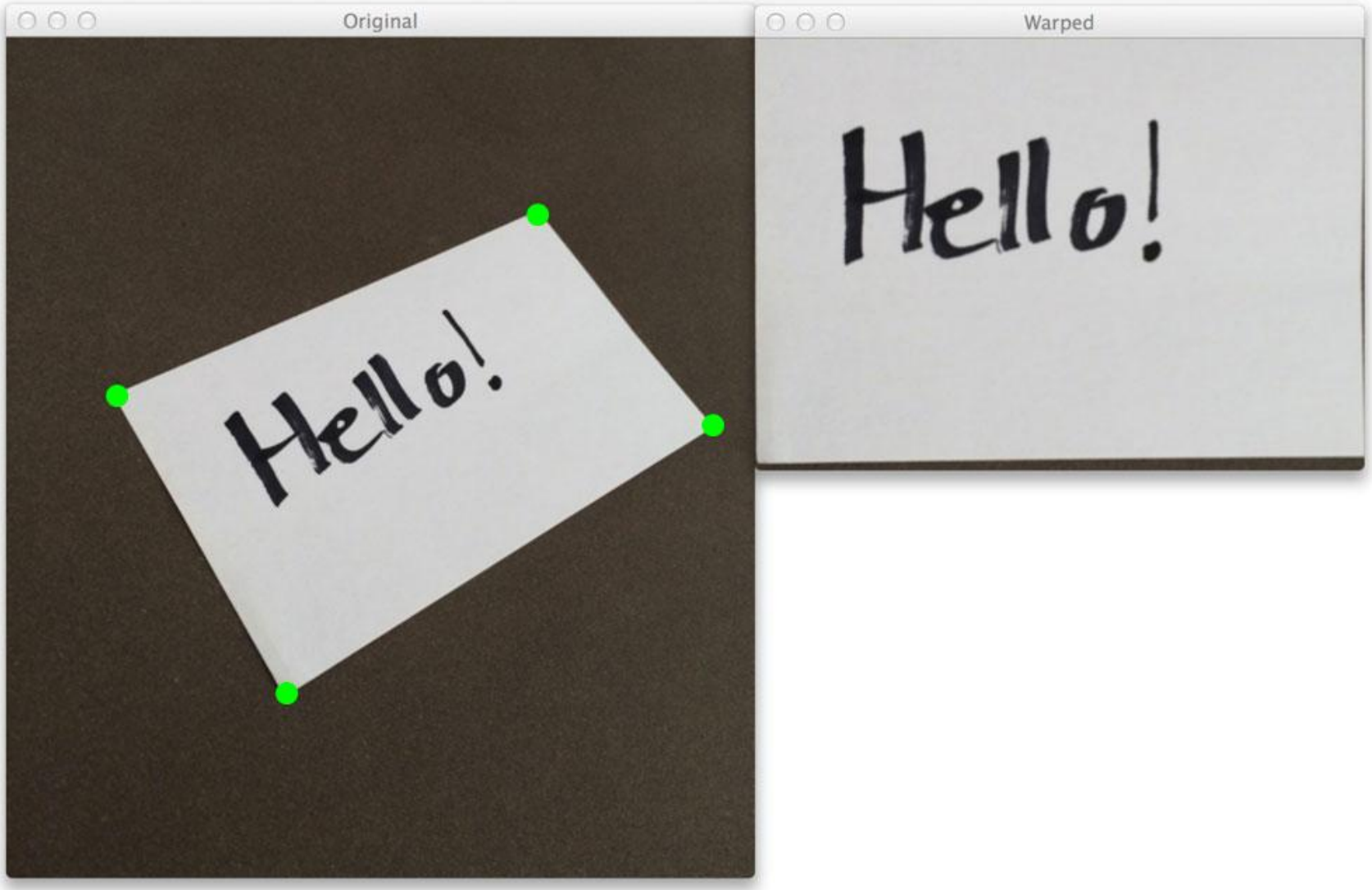
NUMPY ND ARRAYS

```
>>> import numpy as np
>>> ndArray = np.array( [[[0, 0]],
                         [[1, 1]],
                         [[2, 2]],
                         [[3, 3]]] )
```

```
>>> ndArray.shape
(4, 1, 2)
```

```
>>> ndArray[len(ndArray) - 1, 0]
array([3, 3])
```

PERSPECTIVE TRANSFORM



QUESTIONS AND ANSWERS

- You Are Asking

'Mohammad Siavashi'

✓ About

"Image Processing with OpenCV"