

Image Processing and Computer Vision - Lab1



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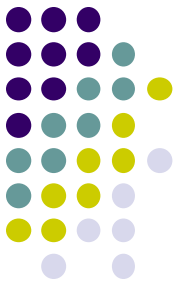
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About me...



- PhD Student
 - in the **GRAINS** (GRAphic and INtelligent System) group (<https://grains.polito.it/>), DAUIN
 - I work on XR technologies for socially engaged virtual environments
- Contact
 - via e-mail: roberta.macaluso@polito.it



The Plan

- Some numbers:
 - 13 laboratories of 1h:30min each
- Almost all labs are 2-weeks long
 - i.e., 3 hours for each topic (mostly)
- We are going to use...
 - digital cameras (including webcams), papers, GIMP, OpenCV, Python, ...



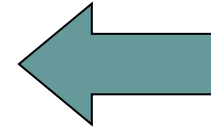
Laboratories' Goal

- Labs are preparatory for
 - the exam
 - your course projects ("tesine")
- You are not required to deliver any report about the laboratories
- Labs are not mandatory
 - but I **really** appreciate your presence, here! Thanks!
- I will give you a brief introduction at the beginning of each topic/lab



Topics Plan

1. Intro to Image Processing
 - today (12/03) and next week (19/03)
2. CCD, CMOS, and Optical Systems
3. Intro to OpenCV
4. Fourier Transform
5. Image Segmentation
6. Car Lane Detection
7. Face Detection and Tracking
8. Neural Network Introduction





Intro to Image Processing

- Today and next week
 - 3 hours
- Text of the exercises/tasks
 - on the Teaching Portal
- You need a photo camera and GIMP
 - or a similar software (e.g., Photoshop)
- Goal
 - experiment with basic image processing tools and concepts (brightness, contrast, histogram, etc.)



Intro to Image Processing

- Today: you should be able to complete the first 2-3 exercises
- Hints, insights, links, etc. are in the text of the exercises
 - I am here for you...
 - ... please ask if you need any help or clarification

Advices



- Use different types of images



High/Low
Resolution
(pixels and bit depth)

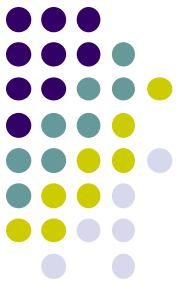


Single/Multi
Subject



Grayscale/RGB
Images

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