

Computer Vision (CV)

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- ▶ **PART 1: Contents**
- ▶ PART 2: Schedule
- ▶ PART 3: Repository

IMAGE PREPROCESSING

X					W		
0	0	0	0	0			
0	2	1	2	0	0.5	0.7	0.4
0	5	0	1	0	0.3	0.4	0.1
0	1	7	3	0	0.5	1	0.5
0	0	0	0	0			

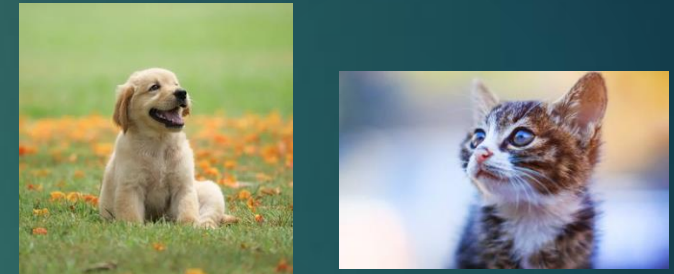
- Basic handling (math operations, reshape, logical masks)
- Filtering methods (Spatial, morphological, frequency)

IMAGE SEGMENTATION



Pixelclustering(unsupervised)
Pixel classification (supervised)
Deep Learning
(Encoder-Decoder)

IMAGE CLASSIFICATION



- Extraction of regional features
- Region-based features (Traditional ML)
- Deep Learning (CNNs)

Module 1: Introduction to image processing (4 hours)

Basic image handling and preprocessing. Spatial (convolutional) filters, morphological operations, filters in the frequency domain.

Module 2: Image segmentation (4 hours)

Unsupervised segmentation using clustering algorithms. Supervised methods using pixelwise classifiers.

Module 3: Image classification (4 hours)

Extraction of regional features. Texture analysis and entropy. Region-based supervised classifiers. PCA Eigenfaces.

Module 4: Introduction to deep learning (4 hours)

Convolutional neural networks for image classification. Segmentation using Convolutional Neural Networks.

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TIRANA

	Monday 12	Tuesday 13	Wednesday 14		
9-10h	Presentation Module 1		Module 3		
10-11h	Module 1		Module 3: Exercise 3		
11-12h	Module 1		Module 3		
12-13h	Module 1: Exercise 1		Module 3: Exercise 4		
13-14h					
14-15h		Module 2			
15-16h		Module 2			
16-17h		Module 2			
17-18h		Module 2: Exercise 2			

ONLINE

	Monday 19	Tuesday 20	Wednesday 21	Thursday 22	Friday 23
9-10h					
10-11h					
11-12h					
12-13h					
13-14h					
14-15h					
15-16h	Module 4	Module 4	Test		
16-17h	Module 4	Module 4	Test		
17-18h	Module 4	Module 4			

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Course materials



https://github.com/xtianu/Tirana_CV



► Pautes....

CAP!

Iniciativa, organització, creativitat, originalitat.....

Aquest laboratori ens ha de servir per aprendre i informar-nos de les diferents tècniques de segmentació existents.... I ens ajudarà per fer el
CHALLENGE FINAL