Object (and human) Recognition

Presentation

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Màster Interuniversitari en Intel·ligència Artificial

Object and human recognition lectures

Object Recognition: subject summary

In this course we will analyze the paradigm of **automatic object recognition from a Computer Vision and Machine Learning points of view.** We will review **mainly recent challenges** in **object and human** recognition and analysis, mainly from a deep **learning perspective**, including **detection, segmentation, pose, and behavior**, among others.

The teaching will be distributed as follows:
T –1.5h theoretical topic exposition class. (Tuesday 12:45-14:15h)
P – 1h practical session. (Tuesday 14:30-15:30h)
Presentation – <10min paper presentation (once along the semester)

The rest of the course is devoted to autonomous lectures, programming, and studying.

Course agenda

Date	Theory title	Teacher	Practical session
18-02 - 2025	Presentation and CNN basics	Sergio	Introduction to practice 1, 2 and 3
25-02 - 2025	CNN and GNN architectures	Meysam	P1 Q&A
04-03 - 2025	Fairness and bias	Julio (INVITED SPEAKER)	-
11-03 - 2025	Object detection and segmentation	Meysam	P1 presentation
18-03 - 2025	Human behaviour understanding	Sergio	-
25-03 - 2025	Human pose estimation	Meysam	P2 Q&A
01-04 - 2025	Recurrent models and transformers	Meysam	P2 presentation
08-04 - 2025	Exams week		
15-04 - 2025	Easter holidays		
22-04 - 2025	Festiu (pont)		
29-04 - 2025	Presentation I	Sergio	-
06-05 - 2025	Presentation II	Sergio	-
13-05 - 2025	Generative models	Meysam	P3 Q&A
20-05 - 2025	Master's seminar week		
27-05 - 2025	Exam	Meysam	P3 presentation

Evaluation

The course will follow a continuous evaluation consisting in three practical reports (PR), one in-class presentation (P), and a final exam (E).

The final score (FS) will be computed
as follows:

$$FS = 0.5 * PR + 0.3 * P + 0.2 * E,$$

Where PR is the mean of the three practical reports.

A minimum score of 3 over 10 points is required for each part P, PR, and E in order to compute the final score FS.

Student presentations

- Papers for seminars:
  - Send an email:
  - sergio.escalera.guerrero@gmail.com before the deadline with a list of at least three priority ranked papers for presentation. Consider relevant conference and journal papers, such as CVPR, ICCV, ECCV, NeurIPS, ICLR, IJCV, TPAMI.
  - Deadline 24/3/2025

- You can (should) send the draft of your presentation for revision few days before your presentation, and the final version (mandatory) by the week of the presentation.

- You can contact me if you are interested in a research oriented computer vision & Deep learning master Project
  - Can be paid in collaboration with a company in Barcelona!
  - sergio.escalera.guerrero@gmail.com