Abstract

Computer Vision has a long history of successes in both accademia and industry. By processing an image, we can extract countless information concerning both what we are observing in a scene and where. The advent of deep learning and its wide diffusion in the last decade further booster the popularity of this broad topic, allowing to tackle tasks considered prohibitive not earlier than 10 years ago with astonishing results.

In this course, we will give an overview of a subset of the most popular tasks in computer vision benefiting from rapid progresses thanks to deep learning. Through the lectures, the attendees will be introduced to some specific tasks, their state-of-the-art solutions and open challenges yet to be faced.

Program

The course will survey recent advances in computer vision and deep learning, in particular focusing on a set of well-known tasks allowing to extract meaningful information from images.
The main topics covered by the course are:

- Semantic segmentation
- Depth estimation (from one, two or multiple images)
- Optical flow estimation

Exam

Students requiring to attend the exam will be asked to read a paper relevant to the topics of the course itself and to write a report about it, highlighting the strengths (and, possibly, limitations) of the work presented in the paper itself.
Students can either attend the exam online, during a dedicated time slot (see the schedule), or offline at their convenience and send it for evaluation thereafter.

Participation

Students willing to attend the course are encouraged to fill out the following form
https://docs.google.com/forms/d/e/1FAIpQLSfnZ9RCcQxRVkJ53nZGXTuld_V893xTJm5Jmml0TDskzY_1lQ/viewform?usp=sf_link

Schedule

The course will be held online via Microsoft Teams, scheduled as follows:

Part one:
- Monday, May 30 (10:00 – 13:00)
- Tuesday, May 31 (10:00 – 13:00)
- Wednesday, June 1 (10:00 – 13:00)

Part one:
- Monday, June 6 (10:00 – 13:00)
- Tuesday, June 7 (10:00 – 13:00)
- Thursday, June 9 (10:00 – 13:00)

Final Exam: Monday, June 13 (10:00 – 12:00)

The link to attend will be sent to students who filled the form.

Contacts

m.poggi[at]unibo.it, fabio.tosi5[at]unibo.it, pierluigi.zama[at]unibo.it