LAB 3 – OBJECTS TRACKING

1. VIDEO SEQUENCES READING AND PLAYING

Load a video sequence (fly.avi or STGEORGES.avi), read it and play it from Matlab or Python.

2. EXTRACT IMAGES FROM A VIDEO OR CREATE A VIDEO SEQUENCE

- Extract all the images from a video sequence and store them into 2D grayscale images
- Create two (.avi) video files from the given images (TAXI or PIETON)
- Play the obtained videos
- Try to play the videos using a modified frame rate (/2 or /3)


3. OBJECTS TRACKING ON PIETON VIDEO SEQUENCE

The aim of this section is to automatically segment the two persons on the images and follow their trajectories. Propose a solution to resolve this problem.



A pre-processing step can be required, and a minimal user-interaction can be allowed (for example to indicate the person to track).

1- As a result, show the trajectory of the tracked person on the final image of the sequence as illustrated on this image. Extracting the two trajectories is more complex because you must distinguish the two trajectories. Try to extract the two trajectories and explain the method used to match the points.

2- The object can be visualized on the original image with its superimposed contours (obtained after the segmentation) or using a box including it. Create a video showing the tracking using boxes.

4. CREATE SYNTHETIC IMAGES WITH MOVING OBJECTS

- Create a new sequence of *nb* synthetic images (*n X m X nb)* and simulate the movement of a given object (circle, square…). The idea is to apply some transformations on the object (translations, rotations…).

- Save the obtained sequence and play it