Exercise 06 for MA-INF 2201/MA-MOROB-M04 Computer Vision
WS25/26
09.12.2025
Submission on 21.12.2025

1. **Background subtraction** Please submit your solution in a separate file *task1.py*.

Implement the function updateParam and display the resulting first 3 (foreground-background) images, e.g., 0001.jpg, 0002.jpg, 0003.jpg. Specifically, for each image, set the number_of_gaussians to 3, background_thresh to 0.5 and lr to 0.01.

For more details: "Adaptive background mixture models for real-time tracking". Proceedings. 1999 IEEE computer society conference on computer vision and pattern recognition (*10 Points*)

2. **Counting the Number of People in a Video Clip**
In this task we want to count the number of people within a short video, say 15 consecutive frames (in this case, the same person is considered as the same count), you're suggested to use the same background subtraction (described in task1) technique to get foreground masks for each frame first and then, you can use any of the techniques to do counting.
Please submit your solution named *task2.py* that takes the 15 images as input and outputs the number of people in a video, alongside with a report.pdf describing the ideas/techniques used to perform the counting.
(*10 Points*)
(Hint: You can use any kind of post-processing techniques to eliminate noisy foreground pixels that do not belong to people. You can use cv2.findContours to convert masks to bounding boxes, in this case, the aspect ratio of people's bounding box is different than the car's bounding box.)

3. **Bonus** The selected top 5 reports will receive 5 extra points:

Please write the names of your group members in the README.