Final Project Report

New Attempt

Due Thursday by 12pm **Points** 54 **Submitting** a file upload

Submit your final-project report as a PDF file on Canvas by 12pm on June 10. The report should not be longer than 6 pages.

Note that late submissions will not be allowed, unless there is a justified reason.

Specify in your final project report the following:

1) (4 points) Problem statement:

- (1 point) State the problem.
- (2 points) Describe the scope, domain and challenges of your problem. For example, what is the level of supervision in the training data that you use; do you work with large or small training sets; list main challenges, such as, e.g., partial object occlusion, moving objects in the background, cluttered background, small objects, etc.
- (1 point) Motivate the importance of your problem by, e.g., listing some important applications, whether your problem is related to other research fields.

2) (4 points) Approach:

- (1 point) Provide a brief summary of your entire approach in a paragraph.
- (1 point) Give an overview figure of all components (steps) of your approach.
- (4 points) Describe each step and model of your approach in detail.
- (8 points) Show additional figures for illustrating certain steps or models of your approach in greater detail than the overview figure.

3) (32 points) Evaluation:

- (4 points) Implementation details:
  - (2 points) Specify which software libraries and open-source code you have used.
  - (2 points) Specify all manually set parameters, e.g., input parameters (e.g., number of keypoints for matching, thresholds), hyper parameters of deep learning (e.g., learning rate, batch size, number of training epochs).
- (4 points) Dataset(s) -- Describe the dataset(s) you have used for evaluation. Specify:
  - What is provided as ground truth (e.g., bounding boxes, segmentation, 3D points).
  - Number of training and test images/videos.
  - Number of classes.
- (2 points) Specify the evaluation metrics you have used.
- (4 points) Specify one or more simpler versions of your approach (e.g., some steps are missing) and give them some (short) names. Specify the (short) name of your full approach. You will compare the full approach with simpler variants, and in this way conduct an ablation study.
- (10 points) Show the table(s) with your quantitative evaluation on the dataset(s). Include in the table(s) the results of your full approach and the results of simpler versions of your approach. Draw conclusions from the table. Identify which component is the most critical for good performance of your full approach.
- (2 points) Report your training runtime and test runtime per iteration (or per mini-batch of samples). Specify the computing hardware you have used to run your experiments.
- (4 points) Show qualitative evaluation in figures with some examples of your results. Describe typical qualitative performance of your algorithm, e.g., typical errors and reasons for errors.

4) (4 points) Detailed description of labor distribution across the team members (i.e., who did what).