Computer Vision Course Project Guidelines

January 28, 2016

1 Project Ideas

Project Topic (ideal group size)

1. Fire/Trash burning detection in images/videos: Build an app to detect fire and smoke, add geo location. (1-2)
2. Traffic light violation detection in short videos: mobile app (2-3)
3. Cycle/Motorcycle/Scooter detection and tracking on a mobile camera. (3-4)
4. Big Cat (Tiger) detection with body part localization. (2)
5. Interactive tool for 3D stitching from single view reconstructions. (2-3)
6. License plate recognition app: with localization, segmentation and recognition. (2-3)
7. Interactive tool for semi-automatic annotation of pedestrians in long videos. (1-2)
8. Kinect based gesture and/or activity recognition. (2)
9. Kinect based pedestrian tracking. (2)

2 Project Proposal guidelines

No more than two groups will be allowed to do the same project. The project assignment will be done on a first-come-first-serve basis. I would suggest you select a back-up topic. For Kinect based projects, I have two that I can loan you for the semester.

The proposal should be in CVPR format (Latex preferred). The CVPR format template (LaTeX and MS Word) can be found here. Start early!!

The proposal should be well written:

- Ensure that the sentences are not unnecessarily long. Focus on succinctly stating what is required.

- Do not ramble, the flow should be consistent throughout the report.

The proposal should contain the following:

1. **Motivation**: Why is this problem important? How much interest has there been in this technology and why? What are the applications of developing this technology product?

2. **Previous related work** done in this area. Typically you would be citing journals like PAMI, IJCV and conferences like CVPR, ICCV and ECCV. However, there could be (and should be) citations from other conferences and journals as well.

    - Describe one of the 'project related papers' in detail (about 1.5-2 columns). You should follow the paper summary guidelines for this part of the report.

3. **Problem statement** - Formally define your problem and the scope of your project.

4. **Approach**: The approach(es) you are going to consider.

5. **Experimental setup**: Details of experimental setup. What data sets are you going to use? What metrics are you going to use to evaluate your (or other) methods? Provide an intuition of what the metric is measuring.

6. **Division of labour**: There should be more or less equal division of effort among team members.