

# CMPE573 Computer Vision (Spring 2019/2020)

## Information on Term Project (Part 1)

Term project of CMPE573 course will be prepared, submitted and presented by each student individually. The steps of the first part of the project that students will follow are as follows:

### **Step1: (Due: March 3, 2020 Tuesday) TOPIC SELECTION**

Each student will select a computer vision application from the following list of project topics:

1. Structure from motion algorithms (Chapter 1: Figure 1.2 (a))
2. Stereo matching algorithms (Chapter 1: Figure 1.2 (b))
3. Person tracking algorithms (Chapter 1: Figure 1.2 (c))
4. Surveillance: analyzing highway traffic (Chapter 1: Figure 1.4 (f))
5. Image stitching (Chapter 1: Figure 1.5 (a))
6. Exposure bracketing (Chapter 1: Figure 1.5 (b))
7. Image morphing (Chapter 1,3: Figure 1.5 (c), Section 3.5.3)
8. Tonal adjustment (Chapter 3: Section 3.1.5)
9. Image blending (Chapter 3: Section 3.4.4)
10. Performance-driven animation (Chapter 4: Section 4.1.5)
11. Color edge detection (Chapter 4: Figure 4.33)
12. Rectangle detection (Chapter 4: Figure 4.47)
13. Intelligent scissors (Chapter 5: Figure 5.9)
14. Medical image segmentation (Chapter 5: Figure 5.26)
15. Panography (Chapter 6: Figure 6.3)
16. Video summarization (Chapter 9: Section 9.1.4)
17. Full-view panoramas and virtual environments (Chapter 9: Section 9.2.4)
18. Photomontage (Chapter 9: Section 9.3.4)
19. Flash photography (Chapter 10: Section 10.2.2)
20. Super-resolution and blur removal (Chapter 10: Figure 10.31)
21. Image matting (Chapter 10: Figure 10.39)
22. Image inpainting (Chapter 10: Figure 10.52)
23. Non-photorealistic rendering (Chapter 10: Figure 10.53)
24. Optical blur estimation (Chapter 10)

## Step2: (Due: March 10, 2020 Tuesday) PROPOSAL SUBMISSION

Related to the topic chosen, each student will search for a journal article or a conference paper (preferably from the textbook references). This article may be chosen from a journal related to computer vision fields. Then each student will write 1 page Proposal and submit its printed form and the hard copy of the selected article/paper in the following format in a colored folder:

<p style="text-align: center;"><b>CMPE573 – Computer Vision</b> <b>Term Project - PART 1 - Proposal</b></p> <p>Student Number: .....</p> <p>Name-Surname: .....</p> <p>Selected Topic Number: .....</p> <p>Selected Topic: .....</p> <p>Textbook Chapter Number:.....</p> <p>Textbook Chapter Title: .....</p> <p>Selected Article: .....</p>
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At the bottom of the above proposal, the format of the article/paper information will be as follows:

Format: Author names, **Paper Title**, Journal Name, Volume&Issue numbers, page numbers, **Year of Publication**. (Total number of pages)

Example Article:

L.Ma, T.Tan, Y.Wang, D.Zhang, **Efficient iris recognition by characterizing key local variations**, IEEE Transactions on Image Processing, Vol.13, No.6, pp.739-750, **2004**. ( 12 pages)

## Step3: (Due: March 17, 2020 Tuesday) Presentations will start ...

Presentations will be done in lecture hours for 15 minutes each student and the dates will be as follows:

Week 1: 17.3.2020 ( \_\_ , \_\_ )  
19.3.2020 ( \_\_ , \_\_ )

Week 2: 24.3.2020 ( \_\_ , \_\_ )  
26.3.2020 ( \_\_ , \_\_ )

Week 3: 31.3.2020 ( \_\_ , \_\_ )  
2.4.2020 ( \_\_ , \_\_ )

Week 4: 28.4.2020 ( \_\_ , \_\_ )  
30.4.2020 ( \_\_ , \_\_ )

Week 5: 5.5.2020 ( \_\_ , \_\_ )  
7.5.2020 ( \_\_ , \_\_ )

Week 6: 12.5.2020 ( \_\_ , \_\_ )  
14.5.2020 ( \_\_ , \_\_ )