Image Processing & Computer Vision

Class Information

- Name : Dr. Rohollah Moosavi Tayebi
- Credit : 3
- Room : 7001
- Email : moosavi_tayebi@yahoo.com
- Lecture time : Thursday (13:50 – 16:05 pm)
- Telegram ID : @Moosavitayebi
- Telegram Channel : https://t.me/qodsmoosavimaster

Synopsis

The course surveys recent developments in image processing and computer vision (e.g, image enhancement, feature extraction, object recognition and categorization, human activity recognition, scene understanding and modeling). As part of the main class project, students will design and implement techniques of image processing and computer vision application.

Evaluation

- Assignments on MATLAB/Java 20%
- Project + Report 20%
- Final Examination 60%

Assignments (20%)

- 4 assignments on Matlab/Java will be given during the semesters. Generally the topics are :
  - Preprocessing which involved IP
  - Feature extraction
  - Image Analysis
  - Pattern Recognition
- Data will be given which focusing on Biometric/Medical Application

Project (20%)

The final project should be done in a group of 2 students as it makes the project more fun. Each person should plan to spend 50-60 hours on the final project.

Each group should replicate existing methods or implement new research ideas by developing, implementing, and testing/demonstrating an image processing algorithm for their final applications.

Project Report Format

- Max 10 pages;
- Title and authors
- Abstract: short summary of the project with main results
- 6 sections:

Sec 1.1 Introduction: introduce the problem you want to solve, explain why it is important to solve it; and indicate the method you used to solve it.

Project Report Format

sec 2.1. Review of previous work (i.e. previous methods that have explored a similar problem).
sec 2.2. Say why your method is better than previous work; and/or summarize the key main contributions of your work.
sec 3.1: Technical part: Summary of the technical solution.
sec 3.2: Technical part: Details of the technical solution; you may want to decompose this section into several subsections; add figures to help your explanation.
Sec 4: Experiments: present here experimental results of the method you have implemented with plots, graphs, images and visualizations.
Sec 5: Conclusions: what's the take-home message?
Sec 6: References
Final format: pdf

Evaluation :
Your project report will be evaluated based on the quality of the writing, the clarity of your technical explanation and, overall, how well you get your message across. If you follow the structure above, you'll have good chances to do a good job.

Project Source Code :
There is no need to attach a print out of the source codes to the manuscript. Final source codes of your working program need to be collected into a unique (zipped) file; this file is due on the project submission deadline date and it is supposed to be sent to the grader as indicated by email.

Project Presentation in Class

The presentation must be 20-30 minutes long; if you have a 2-person team, then each of you will present for 10-15 minutes. There will be 5 minutes for questions after the presentation. If your presentation lasts more than 20-30 minutes, it will be stopped. So please make sure the presentation doesn't go over 20-30 minutes.

Presentation format:

The idea is to turn your project report (as discussed above) into slides; thus, your presentation will need to include slides covering the same as paper presentation

Question?