BME42-731/ ECE18-795/CB02-740 Reading Assignment #3

Bioimage data analysis I: Image segmentation using graph cuts

Assigned on March-16-2011
Due on March-30-2011 in class

A. Overview

The goal of this reading assignment is to review graph cut based image segmentation techniques.

B. Instructions

Write a report that briefly summarizes the graph cut based image segmentation techniques described in the references. Be sure to include in your summary adequate technical details. Comment briefly on their strengths and limitations. To minimize the workload, use only the following three references.

(1) Reference articles

[1] P. F. Felzenszwalb & D. P. Huttenlocher, Efficient graph-based image segmentation, *International Journal of Computer Vision*, vol. 59, pp. 167-181, 2004.

[2] Z. Wu & R. Leahy, An optimal graph theoretic approach to data clustering: theory and its application to image segmentation, *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 15, pp. 1101-1113, 1993.

[3] J. Shi & J. Malik, Normalized cuts and image segmentation, *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 22, pp. 888-905, 2000.

C. Report format

The report, including references, must not be more than **3** pages. Reports longer than 3 pages can not be accepted.

Page size: letter
Line space: single
Page margins: no less than 1 inch
Font size: 12 points for the main text; 10 points for listed references

D. Some general guidelines on preparing a reading report

1. The single most important guideline regarding preparing a report is to think independently and use your own words. Avoid literal duplication of words from the references since otherwise it could run the risk of unintentional plagiarism http://www.studentaffairs.cmu.edu/acad_integ/acad_integ_text.html. If you must cite the original text, clearly mark your citation using quotation marks.

2. Organize your report into sections and use section titles. This often substantially improves readability.

3. Avoid long paragraphs. Instead, try to break them up into logically coherent short paragraphs.

4. Pay attention to details. Be sure to cite your references properly. If you are not sure how to make citations, follow the format from a journal you are familiar with. Or you can ask the instructor for further assistance.