

BME 42-731 / ECE 18-795/CB02-740 Bioimage Informatics

Reading Assignment #1

Assigned on Jan-19-2011

Due on Jan-31-2011 in class or by 5PM at instructor's office

A. Overview

This reading assignment aims to serve two purposes

- 1) To provide a general overview of bioimage informatics.
- 2) To assist you to start developing your own understanding of bioimage informatics.

B. Instructions

Write a report that briefly discusses the following topics (see format instructions in Section D)

- What is bioimage informatics? Where does it come from? What is it for?
- What are the problems to be solved in bioimage informatics?
- Is it really necessary to have bioimage informatics as a relatively independent field?
- Any of your thoughts about this area.

C. References

The following references are provided in the hope of assisting you to complete your report. You are NOT required to read all of them. On the other hand, please feel free to use any other references you find useful, but be sure to cite properly.

1. H. Peng, Bioimage informatics: a new area of engineering biology, *Bioinformatics*, vol. 24, pp. 1827-1836, 2008.
2. G. Danuser, Computer vision for systems biology, *Proc. IEEE 2006 Int. Symp. Biomedical Imaging (ISBI)*, 241-244.
3. R. Pepperkok and J. Ellenberg, High-throughput fluorescence microscopy for systems biology, *Nature Review of Molecular Cell Biology*, vol. 7, pp. 690-696, 2006.
4. J. Swedlow and K. Eliceiri, Open source bioimage informatics for cell biology, *Trends in Cell Biology*, vol. 19, pp. 656-660, 2009.
5. J. Swedlow, et al, Bioimage informatics for experimental biology, *Annual Review of Biophysics*, vol. 38, pp. 327-34, 2009.

C. Report format

The report, including references, must not be more than 2 pages. Reports longer than 2 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.