BMI Journal Club Template

Russ Altman channeled through Steve Bagley

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Source and acknowledgements

- Much of the text of this talk is from Russ Altman's journal club/research talk template, a PowerPoint presentation with both advice and an example of a journal club presentation intertwined.
- To simplify things, I've extracted the general advice, reformatted it, and added some of my own comments.
- Although the original talk discussed both journal club and research talks, I'm focusing here on journal club.

http://bmi.stanford.edu/biomedical-informatics-students/forms.html

How to pick a paper for journal club

The paper should:

- interest you.
- likely interest others.
- not be a draft, in publication, or just published yesterday.
- have been cited "a bunch" (check Google Scholar).
- report a new or improved informatics method, or be a novel application of an existing method.
- not be too long.
- not be too "domain heavy" because your audience may not be nearly as interested in this as you are.
- be approved by me.

Then . . .

- Plan your 30 minutes, roughly 20-25 minutes of talk with slides, and 5+ minutes of questions and discussion.
- Make appointment with me several days before your talk to practice it.

Research Paradigm (The Big Picture)

This is a cycle:

- An important biomedical problem leads to development of . . .
- a new informatics method that is . . .
- evaluated by showing:
  - a solution to biomedical problem that is . . .
  - an improvement on existing methods (eg, faster, more accurate), and then. . .
- showing the generality of the method by applying it to a new problem.

Outline of your talk

1. Why this paper?
2. General description of medical/biological problem
3. Informatics issues that come up in solving this problem
4. Additional medical/biological/informatics background
5. Aims of paper
6. Methods employed
7. Results
8. Comparison/evaluation of methods
9. Conclusions (of author)
10. Assessment of paper: informatics
11. Assessment of paper: biomedicine
12. Concerns
13. Summary/Conclusions (by you)

Why this paper?

- Why is this a good paper to read for journal club?
- How/why did you pick it?

Describe the biomedical problem

- What is the application area of biology or medicine in which this work is presented?
- Discuss the biological or medical problem that drove the researchers to recognize potential for informatics innovation?
- What is the significance of this biomedical problem?

What informatics issues come up in solving these problems?

- What is the general informatics problem being solved?
- Review what others have done to solve it. This may require some background reading.
- Why did the authors decide to write this paper on this topic now?

Additional biomedical and informatics background

- Review what the audience needs to know to understand the key contributions of the paper.
- In particular, don't assume they know all the biomedical jargon, or the content of key databases.

Aims of the paper

- List the specific aims of the paper.
- Typically, there are three or fewer.

Methods employed

- Describe the method in sufficient technical detail so that the audience can discuss and evaluate it.
- This is your central messsage, so will involve several slides. It may be helpful to start with an overall "flow" slide that shows how data move through the various modules.
- Avoid slides filled with equations unless critical to the discussion.

Results

- Show their main results slide(s).
- You may want to extract part of a complex figure, especially if the text or figure labels are in a small font.

Comparison/Evaluation of Methods

- How did they evaluate their method?
- What reference standards did they use?

What did the authors conclude?

- How did they summarize their work?
- This is typically 1-3 bullet points.

Your assessment of the paper: informatics contributions

- What are the major methodological (informatics, engineering) innovations in the paper?
- Are the methods described in sufficient detail?
- Could you figure out how to implement it from what they wrote?
- Did they evaluate the method appropriately?
- How general are the methods?
- Can they be used to solve other problems?

Your assessment of the paper: significance for biomedicine

- Does their method actually solve at least part of the biomedical problem?
- Has the paper helped make a new contribution of biomedical knowledge?
- What is the significance of this solution to the biomedical domain?
- Was this paper published in the right journal to find the audience who should care the most about it?

Problems/concerns

- What do you like about the method, implementation, and evaluation, especially with reference to the technical informatics content?
- What don't you like?
- Did the authors make unrealistic simplifying assumptions?
- What might come next?

Summary

- Do you accept all of the authors' conclusions?
- Which ones do you accept?

References and recommended reading

- List citations for this paper and related background reading, especially if they could help another BMI student studying for quals.

Acknowledgements

- Thank those who assisted in choosing, evaluating and presenting.

Your contact info

- Name@email.domain

Some general advice

- Imagine your typical audience member, and address the talk to them.
- Look for on-line reviews of the paper (e.g., Faculty of 1000).
- Look at papers that cited this paper; see what they did with the results.
- Put your critiques in your assessment section, not when you first present the method.
- Consider contacting the paper's authors to clarify issues. Authors are usually flattered that someone bothered to read their paper. Also, this is an important networking skill.

How to attend journal club

- Actively read the paper with all of the above issues in mind. Don't just move your eyes over the article text.
- Plan to make one comment or ask one question (even if you don't get a chance to do so).
- Consider taking notes on the presentation and organizing them later. Some very smart people just taught you something.

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