Lecture 14: Journal Articles, RPE, Theses
Journal Paper: Process

1. Author submits manuscript (MS) to journal
   - to editor-in-chief, or directly to an associate editor
   - with cover letter indicating corresponding author and giving contact information.
   - sometimes using the journal’s web site

2. Editor sends MS to reviewers; seasons pass, flowers bloom and wither … After 4-6 months you can write to the editor.

3. Once editor has collected enough reviews, makes an accept/revise/reject decision. Usually revise. Outright accepts are rare (except for invited contributions for special issue).
   - sends reviews to author in any case
4. If “revise”, author prepares revision, sends back to editor. Include a list of changes that address the reviewers’ comments.

5. Editor sends to (same) reviewers for re-review, decides again accept/revise/reject. (May decide without second review, but usually reviewers see MS twice.)

6. If accept, editor forwards MS to publisher, or may request LaTeX source for manuscript.

7. Copy editor marks up MS, sends to typesetter
   • Journal style
   • Grammar, clarity, consistency
   • Marks for typesetter
8. Typesetter enters text, prints galleys
   might be sent directly to author, or via publisher

9. Author gets galleys and copy-edited version to proofread
   - Might be first time to see changes
   - Typically comes with reprint order, page charges
   - Often requires immediate response — or lose your place

10. Back to typesetter, possibly via publisher, thence to printer.
    • You might see copy-edited version before typesetting, or get page proofs, or frantic phone calls.
    • More and more journals/conferences are accepting or requiring electronic versions.
Journal vs. Conference Paper

• Looking for “archival quality”, suitability to journal coverage.

• Fewer restrictions on length, but may have various categories: comments, letters, brief reports, articles, views ...

• Not the same time pressure as conference papers, so a promising paper may be kept alive (though require several revise/resubmit cycles to get accepted).
  – Opportunity to revise and re-review

• There is a means to follow up for corrections and errors after publication.
  • Author’s errata
  • Letters from others
Variations on Theme

• Correspondence, Letters, Short articles
  – Usually special section of a journal (or an entire journal) for expedited publication of short pieces

• Special issue: a theme for all or part of an issue, usually with a guest editor.
  – can be a good deal
    » fast track—rapid turn-around
    » with other articles on same topic

• Survey, Tutorial, Retrospective
  – Not looking for original research here, but often is an original contribution in terms of synthesis.
Advice

• Prepare your MS with care.
  – Don’t make your submission the next-to-final draft.

• New journals often have shorter publication queues, especially in second year.

• Page charges are substantial for “private” journals.
  – Cost of journal is not usually related to its impact

• When you return a revised MS, useful to add a cover letter explaining how you’ve dealt with major comments of reviewers. (Often required.)
  – You’re not required to make all suggested changes.

• Minimum Publishable Unit (MPU)—takes some time to understand what MPU is. Trust advise.

• Acknowledge generously—especially financial sponsors.
Assignment of Copyright

• You own the copyright on what you write

• Publisher may ask you to assign copyright to them as a condition of publication
  – You can refuse
  – You can agree, and reserve rights
  – All they actually *need* is a “license to publish”

• Is it reasonable for a publisher to prohibit you from putting your own work on your own or your employer’s web site?
  – Or sharing it with your students?

• Lots of information available
  – start at [http://www.lib.pdx.edu/services/scholarlycomm/scholcomm.htm](http://www.lib.pdx.edu/services/scholarlycomm/scholcomm.htm)
Research Proficiency Exam

- Probably first time you will be treated as scientific peer by the faculty.
- The RPE is a Ph.D. candidacy exam.
  - At OGI the written qualifying exam was abandoned years ago, but the faculty held onto the RPE.
    - Idea is that successfully doing research is the best predictor of the ability to do research.
  - At PSU the RPE was more recently established.
    - Plays the role of the graduate school’s “comprehensive exam”
- A pass on the RPE indicates that the faculty has confidence the student can complete a Ph.D.
  - It’s not “automatic”
Want to see several things:

1. Evidence the student understands prior work in an area.
2. Identification of an open problem — perhaps not the student’s problem choice, but evidence that the student can articulate the motivation for the choice.
3. A feasible plan for solving the problem, and preliminary results.
4. Accurate assessment of what’s been accomplished and what is missing. How the preliminary research sets the stage for a contribution.
5. Writing and presentation quality that convinces us you can write and present a dissertation.
RPE Paper Rubric

1. Is the paper well-organized; does it tell a coherent “story”?  
2. Does the paper summarize the problem, approach, and results obtained?  
3. Does the paper describe the problem addressed by the research, and explain why this problem is interesting and important within the context of the research area?  
4. Does the paper describe the research methodology applied?  
5. Does the paper describe the research results obtained?  
6. Does the paper explicitly characterize the original contributions of the student?
RPE Paper Rubric (continued)

7. Does the paper describe the relationship with relevant existing work (not merely summarizing the other work)?

8. Is the paper largely accessible to the general CS audience? (There can be deep technical parts that require specialized knowledge, but the remainder of the paper should summarize these specialized parts in more accessible form.)

9. Is the paper written in mechanically sound English?

10. Does the paper make appropriate use of diagrams?

11. Does the paper fit within the suggested range of number of pages? (Research papers should be in LNCS Conference format, with a target length of 15 pages and a strict maximum length of 20 pages.)
RPE Presentation Rubric

1. Was the presentation well-organized; did it tell a coherent “story”?  
2. Did the presentation summarize the problem, approach, and results obtained?  
3. Did the presentation describe the problem addressed by the research, and explain why this problem is interesting and important within the context of the research area?  
4. Did the presentation describe the research methodology applied?  
5. Did the presentation describe the research results obtained?  
6. Did the presentation explicitly characterize the original contributions of the student?  
7. Did the presentation describe the relationship with relevant existing work (not merely summarizing the other work)?  
8. Was the presentation audible and understandable?  
10. Did the presentation fit within the allowed time period?
Question and Answer portion of the presentation:

1. Did the student grasp reasonable questions promptly?
2. Did the student give succinct and correct answers?
3. Did the student engaged in dialogue with the questioner to clarify questions where necessary?
9. Was the presentation accessible to a general CS audience?
The Doctoral Dissertation
Ph.D. Dissertation

- In many ways like a book
  - sometimes turns into one (ACM series).
- Advances and defends a Thesis.
- Authorship: single author, even when reporting joint work, but acknowledge others’ contributions.
- A strong requirement for an original, substantial contribution.
- Complete:
  - may be quite long
  - space for motivation
  - self-contained (may have material in appendices).
Scientific vs. Engineering Thesis

• *Scientific thesis* establishes new knowledge about some aspect of the world, obtained via theoretical derivation, experimental observation or computation.

• *Engineering thesis* explains a substantially better way to construct some artifact or perform a process. “Here’s a new way to build an X, and here’s why it’s better.”

• May have elements of both.
Thesis Process at OGI

1. Work with a research advisor to find a topic and do preliminary work.
2. Do more work, publish papers.
3. When scope of thesis is getting clear, produce a *thesis proposal*.
4. Select thesis committee, have them review the proposal.
   - Should involve a presentation by the candidate.
5. Do more research work.
Thesis Process 2

   - Work with an advisor on outline, perhaps show to committee
   - Expect advisor to read 2 drafts before committee

6a. Maybe do more work ...

7. Committee reads draft, decides if ready to defend. If so, give permission to schedule defense.

8. Defense held.

9. Final draft based on committee comments.
   - Members might or might not want to see revisions.

10. Deposit with library.
Ph.D. Process at PSU

1. Work with a research advisor to find a topic and do preliminary work.
2. Do more work, publish papers.
3. Put together a Dissertation committee (Form GO16D)
   - Chair
   - Representative from office of graduate studies (must be from a different department)
   - 3 other members from PSU
4. When scope of dissertation is getting clear, produce a thesis proposal.
5. Schedule and present the proposal to the committee (closed door). If the advisor wants it, there can be a public talk as well.
6. When committee is happy with proposal, they request “advancement to candidacy”.

Ph.D. process (continued)

7. Hold a dissertation defense (must be more than 4 months after advancement to candidacy).

8. Committee may ask for revisions

9. Final document must meet graduate school guidelines
   http://www.gsr.pdx.edu/ogs_dissertation.html

10. Maximum of 5 years from advancement to finish.
Another Take on the PhD

- MS means you understand the state of the art.
- PhD means you’re capable of advancing the state of the art.


- Purpose of a PhD is to demonstrate that you are a fully professional researcher.
  1. You have something to say that your peers want to listen to.
  2. You have enough command of your subject to evaluate what others are doing.
Professional Researcher, Cont.

3. You are astute enough to discover where to make successful contribution. (This isn’t always true—learning to pick problems can take longer.)

4. You have mastery of appropriate techniques.

5. You are able to communicate your results in a professional arena.

6. You can do all this in an international context—your peer group is worldwide.
What’s in a Dissertation?

• Should read some other dissertations
  – or at least parts of them!

• Key conceptual elements of a thesis
  – Background theory: related work with evaluation
  – Focal theory: what you research and why the “thesis”
  – Data theory: justification for material you will use. Why is this the right evidence?
  – Contribution: evaluation of importance relative to the discipline—what’s new, how’s the world different?
Scope

• Your dissertation is not the be-all and end-all of your research career (or even of your work in graduate school)
• You must make a substantial contribution, but don’t need to solve everything
• Not all of your research has to be related to your dissertation
Communication

• Talk about your research every chance you get
  – At conferences, workshops, etc.
  – With your advisor and your research group
  – Fellow students are often willing victims, if you reciprocate

• Keep writing!
  – Not just as part of formal writing commitments
  – Best way to clarify and document your thinking
  – Many opportunities for re-use
Tools

• Learn how to use the best tools for the task at hand properly
  – Writing papers
  – Maintaining bibliographies
  – Drawing graphs and diagrams
  – Writing code

• This is a multi-year effort, so the time investment will pay off

• Also applicable for background knowledge and skills — a basic understanding of statistics, for example, is important for any kind of quantitative research
Bibliographies

- Keep your bibliography current as your research progresses
- Note on why each item is relevant to you
- Keep a copy (paper or electronic) around!

@misc{Chatterjee01,
author = "Satrajit Chatterjee and Sailesh Krishnamurthy",
title = "{Risque: Recovery in Internet Scale Queries}",
year = "2001",
note = "Accessed on February 2005 from \\
\url{http://www.cs.berkeley.edu/~sailesh/cs294-4/index.html}",
notes = { Project report. The web page went away!}
}
Planning and Time Management

• A significant part of your time (some say up to 10%) should go to planning

• Have a rough idea of where your time goes, and of how far along you are in each of your projects

• If you do not have more project ideas than time to work on them, you are doing something wrong!
Outlines

The secret of getting ahead is getting started. The secret of getting started is breaking your complex overwhelming tasks into small, manageable tasks, and then starting on the first one.

Mark Twain
Outlines (cont.)

• Allow you to work on a single level of abstraction at a time

• Dissertation
  – Chapter
    • Section
      – Subsection
        » Paragraph

• Very important for stress management!