



Research Methodology

Reviewing Scientific Papers

Lecture, 28. September 2007



Research in Computer Science

1. Pick a relevant research question
2. Work on it and make some progress
3. Make sure your work is solid and well supported
4. Write scientific paper about work
5. Submit paper to conference, workshop, journal,...
6. If paper is accepted
 - Update CV, Present Paper, goto Step 1 or 2
7. Else Go To Step 1, 2, 3, 4 or 5



Submission of Paper

- Journal submission
 - Submit at any time
 - <http://www.cs.washington.edu/research/jair/submission-info.html>
 - Special issue
 - <http://faculty.washington.edu/ibichind/ai07/>
- Conference submission
 - Full paper submission
 - <http://pervasive2008.org/submission.html>
 - Abstract submission
 - <http://www.ismrm.org/08/submission.htm>



Evaluation of Paper

- Is the paper correct
- If results are presented, are they new and significant
- Is the quality of presentation good
- What changes might improve the paper



Key to Publishable Paper

- Sufficient contribution to science
- Can be various forms:
 - New and interesting results
 - New life from old results
 - Survey of earlier results
- And, of course, correct!



Typical Review Results

- Synopsis of Paper
- Evaluation
 - Often uses predefined categories
- Recommendation
 - Accept, Reject, Resubmit
- Comments to Authors
 - Usually most helpful part
 - Suggestions and corrections



Example review sheet

- International Conference on Automated Planning and Scheduling
- Journal of Field Robotics



Role of Reviewer

- Evaluate in a timely manner, a paper for publication in specific journal or conference proceedings
- In other words:
 - Subjective
 - Depends on target
 - Should happen quickly
- Note:
 - Review is advisory
 - Decision made by program committee or editors



Time for Reviewing

- Journal Papers
 - Soft deadlines and often delays
 - Review time: Months to years
 - Option: “Rewrite and resubmit”
- Conference Papers
 - Hard deadlines
 - Review time: Days to weeks
 - Answer: “Yes or no”



How is Review Done?

- Ideally
 - Carefully read the paper
 - Check and evaluate all contents
 - Have no preconceived ideas
- Requires a lot of time



Elements of Review

- Significance
- Appropriateness
- Correctness
- Presentation
- Example:
 - “Papers will be judged on significance, originality, relevance, correctness, and clarity”



Significance of paper

- Some contribution to science
 - “This is interesting knowledge”
- An original contribution
 - “This is new knowledge”
- In essence:
 - Even if it is correct and clear, who cares?



Appropriateness

- Relevant to community
 - “Contribution that matters to us”
- Appropriate for venue
 - “Within scope of journal or conference”
- In essence:
 - Will this audience want to see this?



Correctness

- Approach and methods
 - “Theory correct and experiments valid”
 - “Proofs convincing and statistics correct”
- Conclusions
 - “Can you conclude this from the data?”
- In essence:
 - Can people believe the result claimed?



Presentation

- Clarity
 - “Well structured and understandable”
- Language
 - “Wording, grammar and spelling”
- In essence:
 - When reading the paper, can one focus on the technical part?



Categories of papers

- Major result of great significance
- Good and notable contribution
- Minor but correct contribution
- Technically correct but useless
- Not wrong, but neither good nor useful
- Wrong or misleading
- So badly written that I can't say!



Ethical Issues

- Submitted papers are confidential
 - You cannot use or divulge information, even if paper is rejected
- Conflict of interest should be avoided
 - Do not review papers of close colleagues
 - Do not review papers of your “enemies”
- Do the review as well as you can
 - Confess when you don’t know enough



Ethical Issues of Anonymity

- When authors are anonymous
 - Avoid trying to work out who they are
 - If you think you know, ignore it
 - Unless you find you may have conflict of interest
- Never abuse reviewer anonymity
 - Remember you will be on other side later
 - Other reviewers and editors see your review
- Anonymous reviewer:
 - Be objective, polite, honest, professional
 - Recipient is a fellow researcher



Ethical Issues in Citations

- Human nature
 - Make sure all “my work” is cited
- Problem
 - Biased opinion of applicability
 - Can remove anonymity
- Balance
 - Suggest citation only if very relevant
 - If needed, point to “area of study”



Different approaches to reviewing

- The “gate keeper”
 - Either say it is okay or horrible
 - Rejected authors will learn or go away
- The “teacher”
 - Evaluate the paper fairly and be honest
 - Work to steer authors on right path
 - Provide constructive comments
- Reviewer also has duty towards authors



How brutal should one be?

- Not at all brutal
 - No attacks on authors or their IQ
 - Think of how you would feel if you got this
- But, not too nice either
 - Do not sugarcoat it to make authors feel good
 - Don't think too much of how they will feel
- Balance and fairness
 - Be honest about the paper
 - Express it politely and professionally



Useless reviewer comments

- The result is most likely wrong
 - Huh, why?
- The authors should cite the right papers
 - Well, what papers?
- The results are not convincing
 - Why? What needs to be changed?
- Etc.



Gray areas in reviewing

- Checking of correctness
- Improvements to presentation
- Correcting language and spelling



Why should I help review?

- It is your duty!
 - Yes it is
- But, it is also good for you
 - Feels nice to reach that level
 - Provides connections to other reviewers
 - Increases visibility among peers
 - Generates goodwill
 - Can generate opportunities



Reviewer's job

- Hard and difficult
- Necessary
- Important



How to receive a review

- Grow a thick skin
 - Criticism can be painful, even if correct
 - You will get unwarranted criticism
 - You will get not-so-good reviews
- Use it to improve
 - Take the result in stride
 - Read review carefully with open mind
 - Remember that most reviewers want to help you!
- Btw: If you expect bad review, don't submit!



Interesting Links

- <http://www.cs.princeton.edu/~jrex/teaching/spring2005/fft/reviewing.html>