

How to Review a Paper:

A guide for newcomers and a refresher for the experienced.

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(Please feel free to reproduce this document with acknowledgement, and send suggestions for improvement to the author)

Introduction

Reviewing a paper is a difficult skill that takes practice to acquire. The purpose is:

- to inform the programme committee or editors whether the paper is suitable for publication in their venue
- to identify any faults with the current paper (technical and presentational)
- for you to confirm that in your opinion this is original work (not plagiarised, and with results that have not been previously published)
- to give *constructive* feedback to the authors so they can improve their paper

Answering the question of whether work is suitable for publication in a particular venue requires you to understand something about the standards and aims of the journal, conference or workshop concerned. Clearly the expectations for significance of results, degree of originality of results, and completion of evaluation will be very different for a workshop or small conference, compared to a major international journal. However no venue would expect to publish work that is flawed or plagiarised.

Please also note the requirement for **constructive** criticism. Let us start with the assumption that most work has been conducted by other hard working and honest people like ourselves who are proud of the work they have done. If you don't think the work is ready for publication, then explain why, and tell them how useful it will be when suitably improved; don't 'diss' them! The main reason why papers are turned down is not because the work is flawed, but because its value has been badly communicated or it has been submitted to an inappropriate venue.

◆Desirable traits in a referee include *objectivity, fairness, speed, professionalism, confidentiality, honesty, and courtesy*◆ (Parberry, 1989)

What goes into a review

To start with, you should assume that everything you say in a review will be shown

to the authors - and it is good practice to assume that the authors will find out who did the review - so make sure you would be happy to defend your review to the authors! There may be some things that should not go to the authors, and we will cover this later, under comments to the committee/editors

1. Summarise the paper in your own words.

In affect you should write the abstract you would have written if you had written the paper. Clearly this abstract should say what the authors have done, what their contribution is, and what the significance of that contribution is (*however small you think the contribution is you should still do this*). The point here is for you to show you have read and understood the point of the paper.

There are many sorts of papers including technical papers, review papers, thought experiments, experiences papers and evaluations. It is important that you understand what sort of paper this claims to be, and that you show that you have reviewed it with that understanding. Note that many review forms tend to assume that all papers are straight technical papers, which may well not be the case interdisciplinary areas such as Technology Enhanced Learning. You may have to fight against the constraints of the review form, and comment on this to the committee/editors.

2. "Technical Content"

Remember to keep it constructive! If you think they have not explained something fully, then ask the question, or explain that you could not understand. Don't just tell them they have done it wrong. Here you might examine:

- the extent to which the work is relevant to this workshop/conference/journal
- the extent to which the work answers a valid research question
- the research methodology
- the quality of results and argumentation (any suspected flaws)
- the evaluation
- awareness of related work (including the correct number of appropriate references)
- the degree of significance of the results
- do the conclusions follow from the work described?

3. Writing and Presentation

This section is concerned with the *quality* of the writing.

- Can you understand the development of the argument?
- Does the abstract describe what you read (and did you know what you were going to read about when you had read the abstract)
- Do the intro and conclusions tell a story on their own?
- Have the authors kept to the format and length requirements of the

publishers?

- Are the diagrams and figures readable?
- Are the references and citations formatted properly?
- Are the references "fully formed"? (Are all the authors listed? Is all the information about the venue that would be needed to retrieve the paper listed? The list should not include references to commercial web-sites. Academic Web references should preferably include author, title and date published, and/or date last accessed)

4. Typos

It is good manners to produce a table of any grammatical errors, typos and other minor textual problems that you have spotted. But it's not the reviewer's job to copy edit the paper, so don't go out of your way to look for typos. As a rule of thumb I would not expect to list more than ten such errors. If there are many more I would say something like "There are multiple typos that need serious attention before publication". If the English throughout the paper is poor, then you must say so, but do be charitable. Presumably the problem is that English is not the authors' native language; they need to be advised to get help before submitting the final version.

5. Conclusions

In the conclusions you should:

- answer the questions "Will it interest people who attend this conference/ read this publication? Why? Who?"
- justify your overall recommendation.

6. Overall Recommendation

Most review forms will have some tick list or Lickert Scale for you to use e.g.

- Accept in its present form with no revisions
- Accept after minor revisions (re-review unnecessary)
- Accept after major revisions (after re-review)
- Reject but encourage re-submission in another form (e.g short paper, poster)
- Reject

OR

1. Excellent - This paper is amongst the best papers I have ever read (short-list for best paper award)
2. Very good paper (Consider short listing for best paper award)
3. Sound paper - I recommend acceptance
4. Borderline - This paper could be accepted if there is room
5. Poor - This paper has limited contribution, or the work is not yet ready for

publication. I do not believe it should be accepted, but if other reviewers differ, I would not oppose strongly

6. Unacceptable - The work makes no contribution or, worse, it is flawed or scurrilous. I believe that publication of this paper would reflect badly on our community. I would strongly oppose any other outcome.

These are both good sets of words to consider if there is no particular response mode prescribed.

To the Editors/Committee

you can assume that the authors will see all the responses above. Most review forms also provide a space for "Comments to the committee". If they do not, then these comments will typically go in an email to the editors/committee.

This is NOT the place for "sneak attacks"! If you have anything to say about the content of the paper, you should be happy to say it to the authors.

This place is where you can tell the committee/editors about your own reflection on the quality of your review.

- What is your expertise in the subject area?
- How confident you are of your views of the paper?
- How much time did you put into this review?
- Did you actually check any equations and data presented? If not, say so.
- Are there any potential conflicts of interest you may have?
- Acknowledge anyone who helped you with the review.

This is also the place where you might explain any difficulty you had in conforming to the review form template they have presented. For example you may on occasions decide to recommend acceptance of a paper that is generally quite poor because you believe it would spark important debate in the community; or you may think that it is an excellent review of the state of the art that you would like to see published in spite of the fact that it has no original technical content.

Finally, this is the place to present any evidence you have of unprofessionalism on the part of the authors. If you have evidence that they have plagiarised, fabricated results or otherwise mis-represented their work - or maliciously mis-represented the work of others, then you should say so here. You will need to prove your assertions.

Some Useful References

Dale J. Benos, Kevin L. Kirk and John E. Hall. How to Review a Paper. *Advan. Physiol. Edu.* 27: 47-52, 2003;
<http://advan.physiology.org/cgi/content/full/27/2/47> (Last accessed 16th Jan 2007)

Ralph E. Johnson, Kent Beck, Grady Booch, William Cook, Richard Gabriel, Rebecca

Wirfs-Brock. 1993 *How to Get a Paper Accepted at OOPSLA*.

<http://www.acm.org/sigplan/oopsla/oopsla96/how93.html> (last accessed 16th Jan 2007)

Ian Parberry A Guide for New Referees in Theoretical Computer Science. ACM SIGACT News (Nov 1989) Available at <http://portal.acm.org/citation.cfm?id=74090>

Barak A. Pearlmutter. *How to Review a Scientific Paper*.

<http://www.cs.unm.edu/~bap/how-to-review.html> (last accessed 16th Jan 2007)