Peer Review Process

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Work in Computer Science

1. Work on a CS problem
2. Write a *scientific paper*
3. Submit a paper to an *appropriate* journal/conference
4. Get response:
   1. A set of *referee reports* (usually around three)
   2. A decision. One of:
      - Accept
      - Reject
      - Revise (for journals)
5. If accepted for publication:
   1. Prepare a *camera-ready* version
   2. Present the paper at a conference (if conference)
6. Else **goto** 1.

Outline

- Role/job of the referee
- Referee report
- How to evaluate a paper?
- Reviewing dilemmas
- Receiving a referee report
- Conclusions

The Actors

- The author(s)

- The editor(s) of a journal / the program committee chair(s) of a conference.

- The referees:
  - Program committee members
  - External referees

- The intended audience.

Role of the Referee

"The task of the referee is to *evaluate* in a *timely* manner a paper for publication in a specific journal or conference proceedings." (Alan Jay Smith, "The Task of the Referee")

- The referee job is voluntary. It is a *professional service* to the community.

- The referee's job:
  - Read the paper carefully
  - Check the related work if necessary / ask coleagues for help or advice
  - Be *impartial/open-minded*
  - Prepare the referee report

Evaluation

- The following things have to be evaluated:

    - If the paper is *correct*

    - If the problem studied and results obtained are *new and significant*

    - If the quality of the *presentation* is good

    - What *changes* might or should be done to the paper (both if the paper is accepted or rejected)

What is a *Publishable* Paper?

- A paper is publishable if it offers a *sufficient contribution* to the body of knowledge of the scientific community it addresses

- Examples:
  - New and interesting results

  - New and insightful synthesis of existing results

  - Survey of old results

- Things to note:
  - The referee provides his/her *opinion* and it is treated as such
  - The referees judgment should be "normalized" to the level of the outlet (journal or conference proceedings)

Timeliness

- Conference papers:
  - Hard deadlines / no chance of delaying a report
  - (Very) short refereeing time (a few weeks)

- Journal papers:
  - Soft deadlines / delays common
  - Longer refereeing time (a couple of months)

- Professional integrity – be boolean and be prompt:
  - Is this or is this not the kind of thing that I will eventually do? If it is, then do it *now*. If it isn't, then say *now*.

The Referee Report

- The content of a typical journal referee report:
  - *Synopsis*. Summary of the main points of the paper (1-5 sentences are enough)

  - *Evaluation.* Answers at least the following questions:
    - Was the goal of the work worthwhile?
    - Is the paper correct/sound?
    - Was the paper well-written/is easy to read and understand?

  - *Recomendation*. Sufficient justification for the recommendation is a must.

  - *Detailed comments* to the authors.

Issues in Evaluating a Research Paper(1)

- *What is the aim of the paper? Is it significant?*
  - Exercise caution in rejecting a paper for the lack of significance. You must be able to defend terms such as "obvious" and "trivial".

- *Is the paper appropriate for the chosen forum*?
  - Refer to the description of topics covered by the journal / conference (study the call for papers of a conference or the journal's homepage)

  - For example:
    " ... TODS welcomes papers on a full range of database research in the management of diverse forms of data. Such subjects include: data modeling, database languages, database theory, query processing, access methods and indexing, security and privacy, transaction management, fault tolerance, distribution, performance, data storage, data mining, and novel applications and infrastructures exploiting database technology... "

Issues in Evaluating a Research Paper(2)

- *Is the approach/method valid?*

- *Is the execution of the research correct/sound?*

- *Are the correct conclusions being drawn from the results?*

- *Is the presentation satisfactory?*

- *Does the paper do justice to related work?*

- *What did you learn from the paper?*

Making Recomendations

- Set standards that are neither unrealistically high nor unrealistically low, and adopt them consistently in all of your refereeing jobs

- **Note**: The evaluation of a paper is often relative to the standards of the journal / conference it is submitted to. However, for reasons of courtesy, one should never suggest publication in a "lesser" outlet.

Categories of papers

- Major results; very significant (~1% or fewer of all papers)
- Good solid, interesting work; a definite contribution.
- Minor, but positive, contribution to knowledge.
- Elegant but technically correct but useless.
- Neither elegant nor useful, but not actually wrong.
- Wrong and misleading.
- So badly written that technical evaluation is impossible.

Ethical issues

- Anonymity gives power. *Never* abuse it!
  - Peer-review types:
    - Single-blind review (reviewers are anonymous)
    - Double-blind review (authors are also anonymous)

- Treat the author(s) the same you would be like to be treated! Provide the same service to the author as you would expect to get from the referees.

- Criticism should be *specific* rather than vague.
- Avoid sentences like (unless you elaborate on them):
  - *The main result of the paper is most likely wrong.* [Where? Why?]
  - *The author should cite related literature.* [What papers?]

Reviewing Dilemmas (1)

- *How many papers should I referee?*

- *How much time should I put into a paper?*

- *What is the relationship between journal and conference versions of a paper?*

- *How much the identity and the affiliations of the author(s) are important?*
  - They should not bias your decision.

- *What if I have a conflict of interests?*
  - The author(s) is a friend/family member/(former) colleague/student/advisor
  - The author(s) is someone with whom I have strong personal disagreements

Reviewing Dilemmas (2)

- *Should the referee proofread the paper for the author?*
  - *Depends a lot on how bad the paper is, whether you recommend to accept it.*
  - *Advice: offer your services to the author, but remember that any responsibility for the paper's contents rests with the author.*

- *Should I ask the author to cite some work of mine*?
  - **+** Increases the number of citations to your work (cf. Google scholar, Citeseer)
  - **–** Can jeopardize anonymity
- Advice: Do it only if your work is truly relevant.

Why referee?

- **Idealist**: Every scientist should uphold the standards of his/her field.

- **Realist**: There are rewards, e.g.,
    - feeling of satisfaction for being asked and trusted to do the job by a famous colleague,
    - increased reputation,
    - goodwill from editors / program committee members,
    - appointment to editorial boards/ other program committees
        - lines for your CV.

Receiving a Referee Report

- Before reading a referee report on one of your papers:
  1. Take a deep breath,
  2. Remember that a good report is always valuable, and
  3. that somebody spent time reading your paper and producing the report.
  4. Do not take the comments personally

- *Use* the reports to improve your paper!
  - Try to address every comment (large or small)
  - If this is a journal paper and the recommendation was to do a revision, prepare a *revision report,* where you explain exactly how you addressed each of the reviewers' comments.

- If you expect bad reports in light of your paper's quality, do not even consider a submission!

Conclusion

- The job of reviewing papers is
    - hard,
    - but necessary and important.

- Scientific progress relies heavily on the process of peer review!

- *The advice we give others is the advice that we ourselves need.*