How to Referee a Technical Paper

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The Message
Refereeing is excellent practice for
- developing critical appraisal skills
- understanding how good (and bad) papers are written
Many articles on refereeing

- Forscher: Rules for Referees
- Guidelines that accompany referee requests

Refereeing

- Purpose of Refereeing
  - quality control
    - eliminate bad papers
  - choose best papers from a good set
    - competition for space

Submissions 295 papers
Proceedings (33 papers)
Referee Process

- a peer review process
People involved.

- Author
  - correctness of argumentation and results
  - sound grounding in the literature
  - good quality of presentation
  - appropriate for the intended audience/venue

People Involved

- Editor
  - whether paper should go out for review
  - choosing appropriate referees
  - acceptance/rejection decision
  - explanation letter
People Involved

- Editorial support
  - good record keeping (copies of paper, reports)
  - tracking and distributing referee reports, reminding referees

People involved

- Referee
  - critical appraisal of the paper’s contents
  - opinion, rationale, changes, suggested action
  - usually 3 referees/paper
Referee types

– topic specialists
  • is/has worked on similar problem
  • knows literature, other work very well
  • understands methodologies
  • considers nuances of your work/contribution

– area specialists
  • knows general area, and how topic fits within it
  • considers contribution of work to the general area
  • evaluates comprehensibility by non-specialists

Why Referee?

• Fairness
  – all your papers will be refereed
  – expected duty of all researchers/academics
Why Referee?

- Good practice !!
- Other upsides
  - enhance reputation
  - expedites processing of your own papers
  - get on editorial board or program committee
  - 'previews' to the state of the art

- Downside
  - more work!

Quality Control: Research...

- Correctness
  - of argument/method/algorithm/mathematics/proof... (is a fix necessary?)

- Significance
  - does it work on a valid problem?
  - will these results make a difference?
  - is it significant to area/journal, etc...?
  - will it stimulate further work in the area?
  - is it more than an obvious/trivial solution?
Quality Control: ...Research

- Innovation
  - original, creative, novel, inventive
  - not trivial extensions, or combination of old work with no added value
- Interesting
  - well motivated
  - relevant (when & where & to whom)

Quality Control: ...Research

- Replication
  - can the work be reproduced from the description by an experienced person in the area?
- Timeliness
  - of current interest to the community
  - but account for:
    - publication delay
Quality Control: ...Research

- Previous publications
  - by other authors
  - by this author
    - www publication,
    - minor conferences
    - minor variations of the theme...

Quality Control: Writing

- Succinct
  - message and arguments should be
    - clear, compelling, to the point
    - not
      - hand-waving
      - obscure/hidden behind jargon, etc.
Quality Control: …Writing

- Accessible
  - is it appropriate to the audience?
    - specialists & range of generalists
    - is there something for both?
- Language & organization
  - readable, good grammar/structure reflects care
    - people do not have the time to read badly written papers

Quality Control: …Writing

- Use of figures/tables
  - supports the story
- Title & abstract
  - indicates content, summarizes main points
- English as a 2nd language?
Ethics: Professionalism

- Act in the best interest of the author & paper

Ethics: ...Professionalism

- Constructive critique
  - if acceptable, explain how it can be improved
  - if paper is unacceptable, explain why & where, but politely
- Specific rather than vague criticism, e.g.
  - 'what' is wrong with the algorithm, rather than 'the algorithm is wrong'
  - what related work is missing
  - key examples of numerous errors
Ethics : Speed

- Speed
  - fast turnover
  - you are on a critical path!
  - affects timeliness & publication delays
  - turnover times:
    - conferences: deadlines
    - journals: approx. 3-6 weeks

Ethics : Objectivity

- Fairness
  - author may use point of view/methodology/arguments different from your own
  - judge from their school of thought
  - remove personal prejudice
    - e.g. field, institution, author, nationality, author, association (colleague, friend, rival)

- Conflict of interest
  - discuss with editor
  - if you cannot be objective, return the paper
Ethics : Confidentiality

- Do not circulate submitted papers
  - except for other reviews/comments (publication-dependent)
- Never use/discuss results
  - but can ask for permission from the authors

- Protecting your identity
  - anonymous reviewing the norm
  - you may reveal your identity if you wish...

Ethics: Honesty & Courtesy

- Honesty
  - judge your own expertise,
  - give your own confidence in your appraisal
- Courtesy
  - constructive criticism
  - non-inflammatory language
  - no put-downs
**Ethics: Dilemmas**

- How many papers to submit/referee?
  - 1 paper submitted -> 3 referees (minimum)

- How much time should I spend reviewing
  - enough to give fair treatment
  - don't rush, the author deserves a fair hearing

**Ethics:…Dilemas**

- What if a similar paper has been published?
  - journal papers can be reasonable expansions of conference papers
  - can be republished if obscure (eg, workshop)

- What if I am working on the same problem?
  - be honest & open -> consult with the editor
  - be aware of the race for independent co-discovery
A Template for Reviewing

- Paper Title
- Author(s)
- Manuscript Number

Briefly summarize the paper (2-3 lines)
- can you extract a main message from your paper?
  - lets author know if you understood the main message

  “If you can’t, there is probably something wrong with the paper”
  --- CHI FAQ
A Template for Reviewing

- What is NEW and SIGNIFICANT in the work reported?
  - New:
    - has it been done before?
    - is it a rehash / republication of old stuff (yours or others)?
  - Significance
    - in five years time, would the work have an identifiable impact? (rare)

A Template for Reviewing

- ...What is NEW and SIGNIFICANT
  - Survey/discussion piece
    - does it add value?
  - Would it stimulate further work in this area?
    - is it a reasonable increment that keeps the research area going (frequent)?
    - does it have innovations?
    - is it interesting?
    - is it timely to the community?
A Template for Reviewing

- Describe the QUALITY of the RESEARCH
  
  – How sound is the work?
    • quality of algorithms, analyses, evaluation methods, etc.
  
  – How appropriate/reliable are the methods used?
    • are they adequate to support the conclusions
    • is it correct?

A Template for Reviewing

- Describe the QUALITY of the RESEARCH
  
  – How reasonable are the interpretations?
    • good arguments
    • alternative interpretations explored/left out
  
  – How does it relate to existing work?
    • bibliographies, background, important omissions…
A Template for Reviewing

• Describe the QUALITY of the RESEARCH
  – Can an experienced practitioner in the field duplicate the results from the paper and the references?
    • are there details sufficient?

A Template for Reviewing

• Describe the QUALITY of the WRITING
  – is the message clear?
  – is the paper easy to follow and understand?
  – is its style exciting or boring?
  – is it well organized?
  – is there a good flow of logic/argumentation?
A Template for Reviewing

- Describe the QUALITY of the WRITING
  - is it grammatically correct?
  - are figures and tables used well and integrated into the text?
  - if it is a foreign writer, how can it be improved?

A Template for Reviewing

- How RELEVANT is the work to the expected readers?
  - domain
  - depth of treatment
  - degree of specialization
  - accessible to expected range of expertise of readership
A Template for Reviewing

- Provide any OTHER COMMENTS you believe would be useful to the author
  - constructive suggestions on repairing problems
  - pointers to missing / relevant work
  - minor typos/flaws

A Template for Reviewing

- Provide any OTHER COMMENTS
  - If revisions were possible, what should the author do to make this paper publishable?
    - concrete, very specific suggestions on what
      - must be done
      - optional work
A Template for Reviewing.

- Rate the papers ACCEPTABILITY
  and
  summarize why you gave this rating

  Conference:
  - Definitely reject
  - Probably reject
  - Could go either way *Note: equivalence class!*
  - Probably accept
  - Definitely accept

A Template for Reviewing

- Rate the papers ACCEPTABILITY
  - Journal:
    - Definitely reject
    - Major revisions
      - additional work, major reworking of arguments
      - subject to a careful check by editor/reviewers
    - Minor revisions
      - typos, minor changes
    - Accept as is
A Template for Reviewing

- Using the scale
  1 = Know virtually nothing about this area
  2 = Not too knowledgeable, but I know a bit
  3 = Know a moderate amount, about average
  4 = Not my main area of work, but I know a lot about it
  5 = My area of work, I know it well

- rate your EXPERTISE in the area addressed by the paper

A Template for Reviewing

- Provide comments that you feel are relevant to the review process but that you do NOT want forwarded to the author(s)
  - try to avoid using this
  - conflict of interests
  - pointers to things that would reveal identity
  - harsher things that would be mis-interpreted
  - suggestions on how to phrase acceptance/rejection letters...
Summary

Refereeing is excellent practice for

- developing critical appraisal skills
  - templates, typical flaws

- understanding how good (and bad) papers are written
  - apply understanding to your own work