

# How to review a DAC Paper

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Thank you for reviewing papers for the Design Automation Conference. As a reviewer, you are exposed to the latest research in EDA. Your knowledge, insight, and experience in the field is key for selecting a top-quality technical program. DAC is the oldest and largest conference on in the field of design automation. What sets DAC apart is an extensive review process. DAC aims to deploy the fairest and most thorough review process in EDA. Quality is the only acceptance criterion. This paper gives some brief guidelines that help you grade the reviews fairly and consistently.

## General evaluation criteria: what makes a paper worthy of acceptance?

### Novel idea

The paper must present an original contribution to the Design Automation community. Minor and incremental ideas should be avoided. A good rule of thumb is that if you enjoyed reading the paper because it expanded your knowledge, the paper is worthy of acceptance. In many cases the novel idea is buried in long descriptions of existing work. Help the author focus on the core contribution of the paper by suggesting reductions in the less original parts.

While "Reject - Not Novel" is often an easy way out for the reviewer, please keep the following in mind: A well-presented **negative result** may be as valuable as a positive result if it resolves contradictions in existing literature, prevents waste of resources, etc. Reported re-implementations and evaluations of published algorithms and methodologies, with positive or negative results, are of significant interest. However, they must be described in sufficient detail if they are to be a real contribution. Drastic simplifications/speed-ups of well-known algorithms and methodologies may be of marginal interest to DAC attendees.

DAC does not permit submission of previously published works, since it wastes the reviewer's time. Though we check for all correlations with previously published works using a software tool, this is by no means complete. Please contact the TPC chairs immediately if you suspect double submissions, plagiarism or otherwise unethical behavior. The TPC chairs will handle these case. Please be specific if you feel that the submission is a duplicate or near-duplicate of a previously published work. Please provide complete citation(s) to enable the TPC members make the best decision. Since this requires a thorough investigation, any comments regarding this should only be put in the 'comments to the committee'.

### Convincing experimental validation

In a technical (and practical) science such as EDA ideas must be validated by credible empirical results. Especially the use of any heuristics must be backed up by statistically relevant measurement data. In some cases it can prohibitively be hard to obtain this, but authors must show that they went the distance to validate claims.

It is important to elucidate the strengths as well as the limitations of what they propose. Costs (runtime and memory, on a well-specified platform) should be clearly reported. Comparisons with others' techniques and previous work should be done whenever possible. The absence of obvious comparisons is typically not a promising sign.

The paper must provide enough details to readers to replicate the results. Papers with vague experimental setups do not advance the field because they are not credible.

### **Presentation must be readable**

Since a conference is about communicating ideas to the DA community the presentation is important. An unreadable paper – however brilliant its idea – hardly serves the community because the contribution will not be picked up. A few small errors or issues with the writing style should not be a big problem as long as the paper is generally readable. Note that English is not the first language for most authors. Many grammatical errors are a general sign of sloppiness.

We are welcoming the next generation of EDA professionals. Not all authors are sufficiently experienced in structuring readable papers. As a reviewer, you can help them improve their skills. Every paper must have an approx. 60-word abstract. The introduction puts the work into the perspective of the state-of-the-art and contrasts that with the contribution of the paper. The next section typically gives a formal problem definition. It is followed by some sections with the core idea and experimental results. Finally the conclusion summarizes and discusses the main contribution. The list of references must point to recent and relevant publications. Though variations on this pattern can be OK, it is often useful to help the authors structure future versions of their work in this way.

### **Manuscripts are submitted 'camera-ready'**

The authors have little ability to incorporate changes that were suggested by reviewers. There is also no guarantee that authors will incorporate any of your suggestions and feedback into the final manuscript. Therefore you must review the paper 'as-is', meaning that the current version is not embarrassing in any way.

### **Paper length**

Papers submissions are limited to 6 pages in length. With the end of paper proceedings the physical length seems to be less of a concern for the publication. Generally, however, longer papers are significantly worse than shorter ones because it shows a lack of focus. Longer papers are simply less readable simply because it takes more time. A paper must transfer an idea in concise manner because the attention span of most readers is limited. It is always very helpful to include suggestions on shortening the manuscript in your review. Do this especially if the authors attempted to squeeze as many as possible words into 6 pages by reducing font sizes below 9 points or pushing margins. Such long versions of the paper are better published as a journal paper.

## **How to write your reviews**

### **RATE FAIRLY, BUT CLEARLY: either recommend 'accept', or recommend 'reject'**

Paper acceptance is a 'binary' process. Either you would like to see the paper accepted, or you would like to have it rejected. To rate accordingly, you must avoid the grey area (rating 3). The main grade that the TPC will use, along with your comments, is the "Overall Recommendation" number.

### **Write comments!**

The evaluation number alone is of no use to both the authors and the Program Committee. Any rating must be justified by written comments. Ratings without comments are generally discarded

## **Be constructive**

The overall purpose is to advance the Design Automation field, so please help the authors improve their work. Strong statements are OK only if they are backed up by good arguments. Especially criticisms or negative recommendations should be accompanied by *concrete suggestions for improvement*. For instance:

- Don't just say "this is well-known" - give instances of the ideas that are replicated.
- Don't just say "inadequate experiments" - sketch an experiment or a table/plot (and the desired conclusion) that would have swung your verdict the other way.
- Don't just say "this could never work" - explain why you believe such to be the case.

## **Be fair-minded!**

It is good to list both positives and negatives of the paper to provide a balanced picture. Make the review a positive experience, even if it contains many criticisms.

## **Anonymity**

Both you as reviewer and the paper's authors are required to be anonymous. Anonymity helps preserve the blind nature of the review process by focusing on the technical contribution only. Do not include information regarding your identity in the review.

Papers many have no obvious indicators (URLs, email addresses, etc.) of the authors' identities. Violations of this policy on the submissions side should be flagged in the 'committee comments' section. As the reviewer, please abstain from any comments to the authors that could identify you or your organization as the reviewer. Any such comments that are critical for accept/reject decisions should be made in the comments to the committee only.

## **Conflict of interest**

Generally, we try to avoid conflict of interest through a careful assignment process. You have a conflict-of-interest in case the authorship of the paper could influence your decision or the perception of your decision. Generally, this means that you should not review paper by yourself (of course!), a good friend, a co-worker at the same division of your company or university or a student or a former student of yours. If – despite the anonymity – you suspect such conflict you must recuse yourself. Please inform [papers@dac.com](mailto:papers@dac.com) that you will not be able to review or mark this on the review page.

## **Recommended structure of your comments section**

As stated earlier, your comments are the most important part of your review. Be as specific as you can, because the details matter. Give a sense of the conceptual and technical contributions of the paper as part of a bigger picture.

State your opinion and major concerns/benefits in the first paragraph. Draw a conclusion on whether the paper be accepted or not and a brief reason(s) for it. Use the following paragraphs of the review to provide a justification for your conclusions. Finally provide additional comments on how the paper can be improved.

Thus, Paragraph 1 can say things such as "experimental results are flawed", "writing is too poor", "contribution is incremental", etc. - or the main highlights - "results are very strong", "theory is solid", "well-written", "new idea that hasn't been seen before", etc.

Paragraphs 2, 3, 4 can then give evidence supporting the main point. If the paper is incremental, list the other paper reference(s), and explain why what is being proposed isn't sufficiently different.

You can then put in a line of dashes or some white space, and continue with "Additional Comments". Start bulleting different points that you'd like the authors to address, or give more

examples, with more detail. Please organize your comments in an order which would move your opinion in a favorable direction. Use an order that makes the biggest impact on the paper first!

### **"Author Comments" vs. "Committee Comments".**

The rule of thumb is to write Author comments as you would speak *helpfully* to the authors' faces. And, if your review is matter-of-fact and unemotional, there is little need to have separate comments to the committee - unless there is a true need for confidentiality. The committee comments may just be a single line summary of the main reason for your acceptance or rejection recommendation.

### **References.**

It is a good idea to read (at least the abstracts of) the main references cited, to evaluate contributions relative to previous work. A good paper puts the work in the perspective of other works. A short reference is generally not a good sign.

## **All papers under review are confidential**

As a DAC reviewer we require you to keep the contents of all the papers under review confidential at all times. This reviewer confidentiality is an ethical issue and an important legal issue in case of patent litigation. Please also stress this to any secondary reviewer you use.

This version: Patrick Groeneveld Jan 15<sup>th</sup>, 2009. Thanks to Andrew Kahng, Grant Martin Igor Markov, Sachin Sapatnekar, Ion Mandoiu, Narendra Shenoy, Chuck Alpert and Soha Hassoun for their inputs.