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Tips for Getting A Transactions Article Published

GETTING PUBLISHED is important for promotion and tenure in the academic community, and publication can do much to bolster the careers of engineers in industry. Have you ever published a paper in an IEEE transactions journal? Certainly, publication of a transactions paper, including your photo and a brief biography, adds to your status in the professional community. Some say that one transactions paper can be worth four conference papers in terms of prestige. If you're already a university professor, transactions publications help you become better known and can lead toward being elected an IEEE Fellow or to receiving other awards and honors.

For an engineer in industry, publication in transactions reflects career success. And if you're currently a researcher in industry and aspire to a university career, it is also wise to establish a publications base. Perhaps most of all, publications bring their authors a tremendous amount of career satisfaction.

WHAT TO PUBLISH Transactions normally publish archival articles describing research that others may find valuable to their work and that they're likely to reference. If you've invented something or have investigated a technical topic that advances the technology or could lead to noteworthy applications, you should consider writing about it in a trans-actions publication. If you're an experienced professional, you might consider writing a state-of-the-art survey, which transactions publications often accept. Research results can be written as short letters to the editor.

When you feel you've made a contribution to technology, you must judge for yourself whether you've covered enough new ground to justify a transactions paper, or if a conference paper would suffice. Note that some IEEE societies, such as the Industry Applications Society, require that a subject first be unveiled in a conference paper before it can be considered for a transactions publication. Such societies hope to assure their readers as to the paper's basic quality.

For a research topic presented in a transactions article, your results should include a technical description, a mathematical analysis, and a simulation study. Experimental results are usually required to validate any theoretical discussion and simulation results. For an emerging technology, however, a description of the work, along with an analysis and simulation results, may suffice. Of course, a simulation is only as good as the model; a model that is not sufficiently accurate will yield only approximate results.

ORGANIZING THE PAPER Once you have decided that your work is transactions-worthy, you must organize what you want to write. And that can be tricky because a transactions paper has many details. A flowchart for organizing your writing can be of great assistance (see illustration).

A good paper tells a clear, concise, well-organized story and presents a logical flow of ideas. To get a good feel for how material should flow, it is helpful to review transactions papers published by other authors, particularly those who are established in their fields.

The title of the paper should clearly reflect the essence of your contribution. Below the title, list the primary contributor as the first author; co-authors should be listed in the order of the importance of their contributions. Remember, it is unethical to name a co-author who has not contributed to the work. Likewise, it is unethical to provide as a co-author the name of a project manager, financial supporter, or department head. Carefully avoid any appearance of plagiarism, and do not simultaneously publish the same material elsewhere.

Next, collect—in the proper IEEE format—references to earlier work that are applicable to your paper. References should be as comprehensive as possible while remaining relevant. It is also wise to cite one or two books dealing with background material that pertains to the subject.

Before starting to write, organize your points in the sequence you wish to make them for each section and subsection. Plan any figures that can clearly describe your work, with their titles and important parts labeled. The figures—whether schematic diagrams, functional block diagrams, or simple block diagrams—should be self-explanatory and should make a clear contribution to the paper.

Make sure the grids of any graphs are light in color, and that variables and their scales are clearly indicated. Then, adjust the different sections and subsections of the paper, give them each appropriate titles, and put your figures in order. (Note, though, that figures can be finalized only after you've made a complete draft of the paper.)

Equations are always desirable. Don't be obscure with them; be sure to use commonly understood textbook symbols. Define the symbols as they are introduced in the paper, instead of referring to a list of symbols at the beginning or the end. Sometimes, though, you should include equation derivations in an appendix so as not to divert the reader's attention from the main text.

PEN TO PAPER Once the material has been organized, the next step—writing the paper—is certainly the hardest. Writing for transactions, and doing it well, remains a difficult art.

Correct English grammar and spelling are important. Publication in transactions may prove difficult if you're from a non-English-speaking country. Often, a paper with an excellent contribution will be rejected because of poor English. Even minor grammatical or punctuation errors can annoy a reviewer and contribute to rejection of the paper. Knowing proper English is not enough, however. Avoid ambiguous expressions, and be clear in your writing.

Although an otherwise good paper may be rejected because of poor organization and poor English, a paper making even a mediocre contribution to its field may be accepted because it is well written. This applies to papers from both industry and academia. Good writing is of paramount importance and should not be left to assistants or students unless those individuals are accomplished writers.

FIRST, THE ABSTRACT Start by writing the abstract. It needs to summarize the contribution you have made. It should be a single paragraph, concisely written with carefully selected wording, and it should appear at the beginning, stating exactly what the paper is about. The key words, known as index terms, are appended to the abstract.

Next comes a more difficult part: the introduction. Broadly describe, in a convincing way, the general importance of your work. Describe past contributions to the topic, together with the references on which your new contribution is based, and emphasize in what ways your contribution is important. It is best to cite others' past contributions. Doing so can dispel suspicion that the contribution might not be your own.

Next comes the body of the paper, a clear description of your work in logical sequence. Finally, the results and significance of your contribution are discussed in the conclusion. Some overlap between the conclusion and the abstract is common. If you got help from others (such as managers, financial supporters, and colleagues), you should include an acknowledgements paragraph after the conclusion.

Go over the draft several times to polish the text. It is always a good idea to prepare an extended manuscript first, and then cut it down as you go over it to strive for clarity and to satisfy length constraints. After completing the paper, make sure you've satisfied all the questions presented.

THE REVIEW PROCESS Every transactions paper is peer-reviewed by more than one person. The reviewers' judgment determines its acceptance or rejection. Normally, if two reviewers recommend acceptance or rejection to the transactions editor, that settles the matter. If the score after two reviews is tied, a third review becomes essential.

Finding appropriate reviewers can be difficult, and the review process is far from ideal. Often, a reviewer's expertise does not exactly match the subject of the paper, and the reviewer may not understand the paper well, even though he agreed to review it. Because reviewers are often busy professionals, it is important to make the best possible impression with a well-written, polished paper.

If the reviewer does not understand the paper, it likely will be rejected. Clumsy or unclear figures can be grounds for rejection as well. But don't simplify too much: if the treatment of your topic seems overly simple, your contribution may be considered trivial.

Because the reviewers' identity is unknown to the author, they do not fear rejecting a paper. Appropriate reasons must be given for rejection. However the justification may be simply, "The contribution in the paper is not significant enough to justify transactions publication." Or a reviewer's recommendation for major revision to the paper may be the reason. Whatever a reviewer recommends is usually accepted by the transactions editor. On average, transactions editors accept about one in three submitted papers.

Finally, after several attempts, you may be lucky enough to receive an acceptance letter. Note that most accepted papers come with recommendations for minor revisions. In submitting the revised paper, clearly note in a cover letter the revisions you made, and highlight the revisions in the text. Papers that have been accepted conditional on revisions are rarely rejected once the paper has been resubmitted.

After the paper has been published, you can proudly visit http://www.ieeexplore.ieee.org and note how many people are referencing it, and you can find where the paper is referenced at http://www.scholar.google.com . The latter Web site can provide a gauge of your contribution's importance.

Good luck to you.

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