From Conference Papers to Journal Papers: Challenges and New Ideas

In our profession, there are two main ways of publishing new results: as a paper in conference proceedings and as a journal paper. A few decades ago, the arrangement was very clear: conference proceedings were difficult to find and therefore, not considered to be archival. As a result, authors of good conference papers were encouraged to extend their conference papers into journal versions. In many cases, the resulting extended versions appeared in easier-to-access form as journal papers. The amount of extension differed from paper to paper, often extensions were reasonably minor -- but this was an accepted practice, because it made results more accessible to others.

In the last decades, however, the situation has changed drastically, especially with conferences organized or sponsored by IEEE. Now conference papers appear in the same IEEE Xplore as journal papers, they are as archival and as easy-to-access as journal papers. Easy access to conference papers is clearly beneficial to the research community, but this same easy access has brought a challenge, since it disrupted the usual conference-to-journal publication sequence.

At present, for an extended version of a conference paper to be accepted in the journal, a minor extension is not enough -- because that would amount to publishing the same paper twice. To be accepted, the extended version must contain a large amount of new material. Because of this, most authors who submit papers to conferences are unable to come up with follow-up journal publications. Since in many research areas, journal publications are more prestigious than conference papers, many authors do not submit their results to conferences and submit directly to journals instead.

Why is this a problem? Well, the main purpose of conferences is not so much to publish proceedings, conferences are a provably good venue for disseminating information and for discussing new results with colleagues -- especially major conferences where audiences are large. When results are not presented at conferences, they have less of an impact on the research and practitioner communities.

There is also another related negative effect: the decrease in conference submissions hurts the financial well-being of IEEE societies, since the conferences are our main source of income -- societies, in general, lose money on journal papers.

So how can we deal with this challenge? At the recent April 2016 IEEE Panel of Editors in San Diego, California, a special panel was devoted to this problem, where representatives of different IEEE societies described their ideas and their experience.

One of the possible approaches is currently implemented by the IEEE Power and Energy Society (PES). PES encourages authors whose papers have been accepted for publication in major society's journals to present at major conferences as well. The authors of accepted papers who agree to present submit their accepted journal papers to the corresponding conference, under a special arrangement. Under this arrangement, these submissions are not refereed again, since this have already went through an even more rigorous refereeing process. The corresponding papers do not appear in conference proceedings part of Xplore -- but a link appears at the conference site linking to the corresponding journal paper.

Many authors of accepted journal papers have agreed to this arrangement, since this gives them an additional possibility to promote their ideas. (As of now, authors of such papers pay full registration fees

-- although the society is considering the possibility of special discounted fees, since for these papers, we do not need to referee, so expenses are slightly less.)

These papers are often the best at the conferences, since they have undergone a more rigorous vetting than the usual conference papers. Interestingly, since PES has adopted this policy, the conference attendance significantly increased -- not only by the new authors, but also since more potential participants are interested in hearing these interesting results.

The above idea takes care of papers which have already been accepted by a journal, but what about others? What about very recent new ideas? For such papers, PES uses another model: conference participants who are interested in the future journal submission declare this intent from the very beginning. The corresponding submissions are then limited to 4 pages, so there is usually plenty of possibilities to seriously expand to a usual 8-12 page transactions size; of course, journal reviewers check how significant the additions are.

IEEE Robotics and Automation Society (RAS) has a different model. Since January 1, 2016, RAS has launched a new publication called Robotics and Automation Letters whose main objective is the speedy publication of short papers. After the first review, the editor may recommend a paper to the program committee of the relevant conference, after which the revised paper is sent both to the journal editors and to the conference program committee. If the paper is accepted by the journal, it is published in the journal (but not in the conference proceedings). If the paper is accepted by the conference and by the journal, then it is presented at the conference and published in the journal. If the paper is rejected by the journal but accepted by the conference, it is published in the conference proceedings and presented at the conference. Of course, if both reject, the paper is not published :-(

IEEE Signal and Processing Society (SPS) has a similar model with their own Letters; the difference is that at SPS not only Letters editors can recommend papers to conference program committees, but also, vice versa, conference program committee can recommend the paper to the Letters editors.

How efficient are these approaches? In all three societies, about 10-20% of conference presentations were by journal papers – and the conference attendance has increased by more than that.

All these approaches lead to a win-win situation: more good papers appear in journals, more good papers are presented at conferences, and the conference attendance increases. Let us try something like this in our society as well!