

Making practice publishable - An IFAC Industry Committee Discussion

Kevin Brooks and Tariq Samad

June 15, 2020

Introduction

The IFAC Industry Committee arose out of a pilot committee formed in 2014. At that time one of the workstreams was entitled “Enhancing Industry Participation in IFAC”. Amongst other work this workstream asked the question “Does your organisation support publishing in journals, via conferences, or both? Is PapersOnLine useful?”. Various opinions were received:

- Some companies are vendors of technology and value their technological reputation - peer-reviewed articles provide credibility, whereas “snake oil salesmen” cannot publish in good peer-reviewed journals.
- In other companies, publication is accepted but not especially encouraged.
- Other companies tend to avoid publishing in journals perhaps because “there aren't really any high impact industrially relevant control journals”. IFAC is not highly visible to some industries.
- Some organisations have their own tools for technology surveillance.
- PapersOnLine (POL) is mostly considered useful.

When the permanent IFAC Industry Committee was formed in 2017, a workstream entitled “WS3: Industry engagement in IFAC publications” was defined but left dormant in order to concentrate on other issues. The scope of the workstream was to:

- Organize journal special issues, conference special sessions and roundtables, etc.
- Publish industry problems (not just solutions)
- Involve more industry people in scientific journals (associate editor, etc.)
- Monitor/analyse industry participation in IFAC publications
- Propose new publication (e.g., an IFAC Magazine) and event initiatives
- Address copyright issues for industry authors for IFAC publications
- Suggest (other) ways for Industry Committee to be involved in IFAC publications

A New Development

In November 2019 Russ Rhinehart introduced the committee to an article by Wolfenden et al. (2019) entitled “Making Practice Publishable: What Practice Academics Need to Do to Get Their Work Published, and What that Tells Us about the Theory-practice Gap”. The paper asserts that “Practice academics have struggled to find a validated place for their expertise in academia – including publication in academic journals. . . . We find that the problem is not really about theory versus practice, or relevance versus rigour, but about profound epistemological differences”. The article concludes as follows:

“The failure to facilitate a creative interface between practitioners and academics results in waste: the waste of academic work that lies untranslated for practice, the waste of practitioner knowledge that lies untheorised. It impoverishes discourse in both places, leading to a situation where bakers bake bread only for other bakers. In their attempts to promote research, universities have also created the conditions for anxiety, insecurity and inferiority for skilled and capable staff from practice backgrounds. In recognition of the integrity and validity of multiple epistemologies, we need

a new focus on the skills of epistemic translation, and new structures which enable the kinds of conversations that will change the world.”

Believing that the article has a new and worthwhile viewpoint to include in the IFAC Industry Committee activities, Russ distributed a mail to the ninety-odd members of the committee. The mail evoked several responses, which are summarised here.

Feedback

Feedback was received from Carlos Guardiola, Peter Odgaard, Georg Weichhart, Daniel Abramovitch, Yalin Wang and Iven Mareels. Some points raised include:

- The conferences organized by the IFAC automotive TC get a good share of papers with industry authors, although most of the time they are written in collaboration with universities (and usually the university authors do most of the process). Automotive research is perhaps a quite special case: academic research detached from the industry cannot be ground-breaking, since we need next-generation technologies for demonstrating the potential of our research. (Carlos)
- I think it is important to understand the differences in the objectives of academia and industry. Journal and conference publications are key in academia whereas in industry, these are something people do if they personally want to do so. At the same time, companies want to protect their work and developments. So we really do not want to share all details of our work, even if it is protected by patents, etc. Secondly, if the design tested and presented is a real world application we can never provide details enough for others to reproduce the results, basically breaking an important research principle. Furthermore, we do not care about stability proofs as long as the algorithm/ technology performs as required. (Peter)
- Results flow from academic research to application-oriented research to industrial applications. This can be seen by how references (as an indicator for academic success) are used. Application oriented papers quote the theories, but the theoretical papers hardly reference application-oriented research. (Georg)
- If you know someone in industry you can ask them about potential topics. Good areas where it is easier to get stuff past the corporate lawyers and managers are:
 - 1) Something that the engineer has patented. Patented material is in the public domain and protected. It has been fully disclosed, although one can argue that how a patent is written doesn't make for a readable paper. Still, such inventions can be rewritten and, since it's protected, the lawyers are happy.
 - 2) Something that is already in a device in the market. (But not anything that is a trade secret.)
 - 3) Something that the company considered but decided not to use. In this case, the publication is an inexpensive way to preserve the company's "right to use" the invention, since if it's published, nobody else can patent it. (Daniel)
- It is important for engineers to share their results, and for academics to know the application and invention of advanced control approaches in industry. I think one option is to ask engineers to post their recent developments on the IFAC blog platform which is easily accessible. The other possibility is to organize a special issue of *Control Engineering Practice* as an experiment. (Yalin)

- I could not agree more about the lack of “industry practical” information that can help the everyday control engineer. Productivity in design does not feature highly in our conferences, and the general engineering aspects of managing control loops hardly gets attention in our courses (generalization). It would be good to talk about these issues within the control community. In Australia there is an industry based conference that is run by industry for industry in the field of automation, industry 4.0, sensors & actuators. This conference easily attracts 400 to 500 participants and there are plenty of industry based engineers presenting their “latest problem/solution”. This is not so easy from an academic perspective (clearly stated in the article by Wolfenden), but we should be able to have a halfway house, and reduce the waste introduced by the existing divide. Building bridges is important, outreach is perhaps key. What about creating some "outreach" sessions in conferences enabling the conversation(s) to take place? (Iven)

Conclusion

There is general agreement that publishing practice is a good idea, and on what the impediments are to do so. Is it time to resurrect our dormant workstream WS3: “Industry engagement in IFAC publications”? Are there Industry Committee members who would like to be involved? We would also like to hear from the broader control community! The authors welcome comments at kevin.brooks@bluesp.co.za and tsamad@umn.edu.

Reference

Wolfenden, H., Sercombe, H., & Tucker, P. (2019). Making practice publishable: what practice academics need to do to get their work published, and what that tells us about the theory-practice gap. *Social Epistemology*, 33(6), 555-573.