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BLOG

How to Publish Research Results for Academic and Non-academic Audiences

By Gustavo Fortes Tondello

As graduate students, one of our goals is to produce research that will be useful to the world and will be known and used by other people. But most people would prefer to read a summarized version of the research instead of the whole thesis or dissertation. Therefore, graduate researchers should try to publish their results in formats that are more accessible to the general public. There are many different ways, formats, and venues that can be used to publish original research. Some graduate programs include publication requirements as part of the students' obligations, particularly when there is public funding involved.

In general, there are academic publications, whose primary audience is mainly formed by other researchers, and non-academic, which are more directed to industry and the general public.

ACADEMIC PUBLICATIONS

Academic publications are usually managed and edited by researchers, with researchers as their main reading audience. One of the key characteristics of academic publications is the peer-review process, which is having other researchers with some expertise on the topic (the peers) read and evaluate papers or articles submitted for publication. Usually, the peer-review process is used to filter out poor-quality research and select the best works for publication in venues with a limited number of available spots. This ensures the published work reflects a minimum level of quality, and in the case of the most competitive conferences and journals, also ensures only higher quality research will be published.

There are several types of academic publications with varying lengths, level of details, and time frames for publication. The preferred type of publication varies from field to field, and even between different subareas. In computer science, both conference and journal publications are well accepted in general, whereas other research fields might place a higher value on journals or books.

The most common types of academic publications in computer science and related disciplines are workshop papers, extended abstracts, posters, full conference papers, journal articles, and academic books or book chapters.

Workshop, extended abstracts, and posters. Work that is in its initial stages can usually be presented in conferences as an extended abstract or poster, which provide good opportunities to present your initial ideas and results as well as receive feedback from the community.

Full conference papers. Full papers represent the main type of contribution for academic conferences. Conference papers must present a mature and finished contribution to the field. Due to the vast reach of conferences and the posterior availability of papers as part of a digital library or proceedings, full papers also help to considerably increase the visibility of one's research.

Journal articles. Journals are the appropriate venue for the publication of completed research that represents a strong

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In 2006, researchers from Carnegie Mellon reported that software developers spend most of their time trying to understand unfamiliar code.

and original contribution to the research community. Journal articles are usually longer than conference papers and need to provide detailed information on the methods employed, the results, and the contribution to the research field. Journal articles go through a rigorous peer-review process, which might include several rounds of feedback, improvement, and follow-up, thus ensuring their high quality.

Books or book chapters. In computer science, academic books are often published as a summary of existing research. Usually, a team of researchers takes on an editorial role with the responsibility of choosing book chapter topics and inviting scholarly experts to write the chapters. This kind of book usually does not include novel research results, but instead provides reviews, summaries, or guidelines for the use of existing research.

NON-ACADEMIC PUBLICATIONS

While academic publications are very important to expand collective scientific knowledge and allow other researchers to benefit from our work, they are not read very often outside of the academic community. Therefore, it is important to also spread the word about new scientific discoveries in non-academic publications to better reach the general public.

Nowadays, there are many options to write for a non-academic audience. Not only is the chosen venue important, but your writing style should also reflect whom you are writing for. Publishing scientific results for a non-scientific audience requires a few adaptations from the style of academic writing. Particularly, you need to focus more on the results and how they can be used to solve practical issues, without losing the rigor employed in the research.

What follows are descriptions of some of the most common types of non-academic publications to disseminate research results.

Blogs. Although blogs are an easy and accessible way for researchers to write about their work and reach the general public, research results are still not reported very often. One probable reason for this is that blogs are still largely not recognized. For example, while academic publications are valuable for a scholar's CV, blog posts are usually ignored. However, blogs have an immense potential to disseminate research results in a format that is friendly to the public. Blogs can be set up for research institutions or teams with several writers, or more prolific researchers can also set up individual blogs focused on their research. Alternatively, there are many thematic or general-interest blogs that accept guest posts.

Magazines and newspapers. Magazines are usually focused on a specific topic or area, while newspapers tend to have a broader content selection. Both are very interesting venues to spread the word about scientific research; these shorter summaries that point to a longer publication will attract the interest of readers who wish to seek out more in-depth information. Many magazines and newspapers have online versions with a shorter publication time than their written counterparts, which might accept guest submissions on interesting topics.

Slides. Digital presentations are a neat way to summarize interesting information using an engaging format—slides. Publishing slides on the SlideShare platform has become a common way to showcase one's research results. However, I also recommend any slide-based dissemination of scientific knowledge should include a reference or link to the original publication, so interested viewers can find more information about your work.

Videos. Platforms like Youtube and Vimeo make publishing videos a very easy task. Videos are an engaging medium for information dissemination. Some conferences are even encouraging authors to submit an accompanying video summarizing their publication. Videos can be produced in many formats, using animations, interviews, outtakes of studies being carried out (with the participants' permission, of course!), or just researchers explaining their work.

Books or book chapters. Non-academic books written after research projects are completed usually focus on summarizing the relevant results and teaching readers about how to employ novel knowledge to solve their practical problems. They are usually written by a single author or a team of authors, and focus on a specific area or even on a very specific research result.

Social media. Social media platforms, such as Twitter, Facebook, or Reddit, are usually not the best venues to publish research results because of the imposed limitations on content, such as tweet length, and the competition for user attention on these platforms. However, they are great tools to promote longer content published elsewhere. So, after you publish your interesting research results via one of the longer, traditional formats, be sure to post about it on social media to increase the visibility of your hard work.

Biography

Gustavo Fortes Tondello is a Ph.D. student at the University of Waterloo under supervision of Dr. Lennart Nacke and Dr. Daniel Vogel. His main interests include gamification and games for health and learning. His research focuses on the design of gameful applications. He earned his M.Sc. in computer science and his B.Sc. in information systems from the Federal University of Santa Catarina (UFSC), Brazil. His M.Sc. thesis in software engineering focused on the semantic specification of quality of service for semantic web services. His B.Sc. thesis focused on configuration management of embedded operating systems using application oriented system design. Before coming to Canada, he worked for several years as a software engineer in Brazil. Tondello is also a researcher of logosophical science affiliated with the Logosophical Foundation of Brazil.

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