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Need to Promote Raw Ideas

At the 2018 IEEE World Congress on Computational Intelligence (Rio
de Janeiro, Brazil, 8-13 July 2018) the first keynote talk was
given by Klaus-Robert Mueller, one of the world's leading
specialists in making results of machine learning interpretable.
At the end of his very interesting technical talk, he shared some
thoughts about publications in general.

In many research areas, journals are becoming more and more
selective. For a new algorithm, new idea to be published, it is
necessary to convincingly show that this new algorithm leads to
better results that all the previously proposed methods. On the
one hand, this is good news: when we read a paper in a reputable
journal, we are sure that the method described in this paper
indeed works better that what was proposed before.

Such a filtering is needed: not all new ideas are good, many ideas
that sounded reasonable do not lead to efficient implementations.

But on the other hand, experience show that new ideas -- ideas
that are eventually successful -- at first often lead to so-so
performance. The reason for this is simple: the implementations of
existing algorithms are often perfected to the point that it is
very difficult to beat them, even if new ideas are potentially
better. Some researchers persist and improve their own
implementations until they become better than what was done
before, but many others do not have skills and/or time to do it.
As a result, many interesting and potentially helpful ideas and
algorithms get lost -- and in many research areas, we need new
ideas.

Even if the ideas are not lost, they often have to be reinvented.
Many seemingly new ideas in neural networks can be traced to
obscure papers published in the past -- papers that were not
noticed then because they did not yet lead to good results.
Because of this, new researchers had to waste time reinventing the
wheel.

Under the current publication system, it is not clear that Lotfi
Zadeh would be able to publish his seminal 1965 paper on fuzzy
logic: indeed, first applications showing the efficiency of his
techniques did not come until almost ten years later. It is not
clear whether Einstein would be able to publish his epochal papers
on special relativity -- that paper did not any experimental
results at all -- or on general relativity -- which was
experimentally confirmed only four years after the paper's
publication.

What do people do now to promote raw ideas, ideas which are not
yet ready for a publication in a serious journal? They post these
ideas on their websites, they exchange emails with colleagues.
This is all good -- and it often leads to successful
collaborations and eventual publications -- but many good ideas
still get lost in this process.

So what should we do? One possibility is to follow the example of
physicists: they publish their raw ideas in arXiv
https://arxiv.org/, a well-known well-established preprint
service. Ideas posted there are easy to find -- and, by the way,
they provide a clear priority date for the idea's authors. Posted
ideas get noticed -- and often lead to successful collaborations
and eventual journal publications.

Many computer scientists already use this service -- and this has
already led to many interesting results -- but in computing, it is
not as widely spread as in physics or in other areas. This
practice -- if more widely adopted by us -- will hopefully lead to
more ideas, more results, and, eventually, to more publications in

serious journals!

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