HOW TO WRITE RESEARCH PAPERS

1. Preliminary

The first activity for publishing a technical paper is to figure out your technical area of interest. Make sure the you had carried out enough studies on basics of that topic. Then you have you to update yourself with the ongoing technical happenings in your chosen field. You can do this by

1) Reading and googling a lot of technical papers. There are a lot of journals and IEEE papers floating around in net.

2) Go to one or more conferences, listen carefully to the best talks, and find out what people are thinking about.

Once you are done with the above mentioned steps, then you are eligible for writing a paper

2. Read existing Papers

Read everything that might be relevant gives you different perspective of the focus topic. But be selective too, for not getting to much deviated from you topic of interest. Getting used to simulation software is much useful for simulating your work. You can find a lot of time during the days and utilize those holidays & free days.

3. A jump start

When you first start reading up on a new field, ask your fellow researcher what the most useful journals and conference proceedings are in your field, and ask for a list of important papers that you should read. This activity will give you a jump start.

4. Crack the jargons and terms

One of among the tough nuts to crack is to understand the paper published by others. The easiest way is to is by reading it many times. The more times you read the more will be revealed to you. Keep the Internet handy so that you can crack the jargons and terms, which

you may find strange.

5. Write down your studies

Write down speculations, interesting problems, possible solutions, random ideas, references to look up, notes on papers you've read, outlines of papers to write, and interesting quotes. Read back through it periodically. Keeping a journal of your research activities and ideas is very useful.

7. Bits and pieces together

Now you can identify important open problems in your research field and also you will be very much aware of what you are doing and what you have to do. The more you go, you'll notice that the bits of random thoughts start to come together and form a pattern, which may be a bright enough for a good paper.

8. Simulation software sissies

Please don’t pick overly ambitious topics; instead identify a realistic size problem. Gather the Matlab files available in the Internet that is related to your topic and simulate it for the claimed results. Please don’t expect the Mfiles readily available for a solution published in a paper. But you can make it of your own by modifying and adding. Believe me, Matlab is a very easy tool! Once you are able to get the simulated outputs of your solution, you can carry on for making a paper out of it.

9. Essence of your work

The essence of your work can be diagnosed by analyzing below listed points. We can increase the maturity of the paper by improving these.

Significance: Why was this work done? Did you solve an important problem of current interest or is it an obscure or obsolete problem?

Originality/Novelty: Is your approach novel or is it tried-and-true? Did you need to develop new tools, either analytical or physical?

Completeness: Have you tested a wide range of scenarios, or is this just a simple proof-of-concept?

Correct: Is your solution technically sound or are there errors? [3]
Consider improving the same.

10. Anatomy of Paper

Generally a paper has seven sections and a maximum of four pages. They are

1. Abstract,
2. Introduction,
3. Existing techniques,
4. Your contribution,
5. Results and
6. Conclusion.

11. The procedure

As a part of your paper publication, you can start documenting the ‘existing techniques’ from the scrap journal you did during the studies. Here you have to extract what all are the techniques existing as a solution for the particular problem and the pros and cons of those.

Next, document the ‘introduction’ about what is the topic and what you are going to do. Better to keep it short. Follows your contribution and the simulated results.

1. Describe the problem
2. State your contributions

‘Abstract’ is one section you can work on in the last, as it has to cover the all the sections very briefly. Please note that Abstract makes the committee members to decide whether or not to read your paper. Generally four lines are sufficient for this.

1. State the problem
2. Say why it’s an interesting problem
3. Say what your solution achieves

4. Say what follows from your solution

12. Section by section

The divide-and-conquer strategy works on a day-to-day level as well. Instead of writing an entire paper, focus on the goal of writing a section, or outline. Remember, every task you complete gets you closer to finishing your paper.

13. Get a pre-review

Now your paper is ready. You can ask your peers or professors to review your paper. Next is to find the right place to publish it. You can start of with national level conferences, which often gets conducted in many universities. Then once you gain a level of confidence, you can proceed to international conferences and journals.

14. Read the reviews carefully

This is really, really, really hard. Only a small proportion, 5 to 10 percent, are accepted the first time they are submitted, and usually they are only accepted subject to revision. In fact, anything aside from simply "reject," Neal-Barnett reminds, is a positive review. These include:
* Accept: "Which almost nobody gets," she says.
* Accept with revision: "Just make some minor changes."
* Revise and resubmit: "They're still interested in you!"
* Reject and resubmit: Though not as good as revise and resubmit, "they still want the paper!"[2]

Read every criticism as a positive suggestion for something you could explain more clearly

15. Don't panic

After reading the review the first time, put it aside. Come back to it later, reading the paper closely to decide whether the criticisms were valid and how you can address them. You will often find that reviewers make criticisms that are off-target because they misinterpreted some aspect of your paper. If so, don't let it get to you -- just rewrite that part of your paper more clearly so that the same misunderstanding won't happen again.
It's frustrating to have a paper rejected because of a misunderstanding, but at least it's something you can fix. On the other hand, criticisms of the content of the paper may require more substantial revisions -- rethinking your ideas, running more tests, or redoing an analysis.

16. Rejected? Be Positive

If your paper is rejected, keep trying! Take the reviews to heart and try to rewrite the paper, addressing the reviewer's comments. "Remember, to get a lot of publications, you also will

need to get lots of rejections," says Edward Diener, PhD, editor of APA's Journal of Personality and Social Psychology: Personality Processes and Individual Differences.

17. Common mistakes

Wrong sequence in Figure and Table numbering
Misalignment of columns
Usage of figures from another paper without credit and permission

18. Where to publish

Generally, there are three main choices:

* National Conference: A conference is the right place for beginner scholars, since the level of scrutiny is minimal. The conferences will accept papers which details about the comparison of existing technologies, mathematically proven but practically unproven proposals, etc.

* International Conference: A conference is the good play ground for Intermediated scholars. This mostly same as National Conference but the securitization will be more.

Conferences offer rapid time-to-publish, plus you will often get feedback on your work when you present it.