Guidelines to write and publish a research paper

By Francisco F. Rivera

These are the notes of Abraham Trashorras Rivas taken on 21/03/2024 during the Training Program’s session.

# 7 stages to publish a paper

1. Study what’s being done up to this moment, a.k.a. “State of the Art”.
2. Find a paper, work or line of research that can be improved and/or expanded.
3. Get some results.
4. Write a paper about the results.
5. Select the best journal for your papers.
6. Get your paper reviewed by fellow researchers.
   1. The final choice of publication is on the Journal editor’s hand.
7. Get Published!

# Study the State of the Art (SoA)

This step constitutes the majority of the paper’s allocated time, specially if it’s the first paper you do on the subject.

Remember that not only good results are publish, bad results can also are often are more useful for the SoA than good ones.

Find a set of papers that are your basis, Representing SoA.

* Reviewers care about this. It can get you rejected.
* The USC has agreements so researchers can access all papers across most journals.

Find survey papers that review the SoA and the most important papers. Watch the date.

It is mandatory to write a summary about the SoA for your paper in the IT field.

Tools for researching papers:

* Google Scholar -> Easy to use.
* Dblp -> most used by Francisco F. Rivera. Direct access to papers.

The number of citations of a paper is a good measure of quality, but not always.

# Writing the paper.

Transmit truth, originality, and novelty. Be convincing, precise, clear and brief.

Write for the reader and the reviewer. The reviewer already knows about the field you are writing on.

Most rankings use number of papers and situations. This forces people to publish too much.

There are two types of readers.

* Experts on the topic. <- Specialised journal.
* General public. <- General Journal.

**Important steps.** -> Keep in mind the tips in the presentation.

Reproduce the scientific method. Use clear and precise language. Small sentences. Read papers from the journal and adjust to the style.

## THE TITLE

Represents your paper. It is used to find it in search engines. Most people will only read this sentence.

## THE AUTHORS

The order is important in IT. It goes by importance. The USC culture is student first. Usually there are only allowed 4 authors in IT papers, for a maximum of 6. More than that, and it will not be used for any metric such as contracts.

## Keywords

Important for search engines. Some journals may ask for them.

## THE ABSTRACT

Important summary of the whole paper in about 7 to 10 sentences. 80% of people will only read the title and the abstract. You need to capture them here. It's the most important part of the paper.

## The Introduction

Describe the problem with exhaustive references, SoA could be separated if it's extensive.

## The Contents

There is no fixed structure for the content. The results should be reproducible. In IT they ask for the code and the dataset. If it's sensitive data, you must anonymize it.

## The Results

Usually just the regular ones that shows your contribution to the SOA. Never hide bad results. It’s fraud and the whole picture is more valuable anyway. For precise results in numbers, use tables.

## The Conclusion

A brief summary focusing on results. Enumerate conclusions and practical applications. Also, add open lines and future work.

## The Acknowledgements

The people who pay expect to appear here. You should also add who lend you the equipment, such as the CESGA. You can add colleagues, reviewer's, etc. who have helped you in a meaningful way.

## The References

Every paper here must have been referenced in the text. Reviewer's really care about this. Some may try to push their work to be put here.

# Where to publish

Journals and conferences are ranked by references to their papers. Ranks are sometimes forced or manipulated.

Rank is vital. It ranks the paper and the authors, even the CITIUS is valued by a number based on a rank.

ANECA (Madrid) and ACSUG (Xunta de Galicia) provide these rankings.

## Journals

### JCR

It is the most important rank for science. It calculates the number of situations divided by the number of papers. Usually, the important measure is the quantiles and of these the first quantile, that is to say the top 25%. You should focus on journals in the first quartile. Take care that between the time you send your paper and it is published, they don't fall from the first quartile. The top journals are those in the top decile, that is to say the top 10%.

### SJR Alternative

## Conferences

The most important part of a conference for publishing a paper are the apparel and the plenary sessions. You present your paper here and there are on the ones approved are published in a book at the end of the conference.

#### Ranking:

* GRIN -> Spain and Italy, used by ANECA
* CORE -> Worldwide

Conferences are very important in the IT field. A paper reviewed as a class one paper in a conference is a kind to a first quartile on a journal or even a first decile on a journal.

#### Researchers

They are ranked by the number of citations. The most relevant index is the h-index. For example, H = 7 if they have 7 papers with 7 citations. This can be manipulated and everyone knows that. The community is trying to change this with the DORA Initiative, ANECA has started implementing this.

# Review Process

Be aware that you can get rejected with a good paper.

You will get reviewed by multiple reviewers under. Opinions can be contradictory. Their false can be accepted with no feedback. Rejected with some feedback. Or accepted with revisions that must be implemented.

Polite, humble, and write papers, even if not agreeing with their viewers. Fighting and arguing with them or the journal is a waste of time, sadly.

You may use tools like ChatGPT, but use them correctly, use them to save time, not to do the work for you.