Writing Scientific publications
The scientific review process
Managing expectation

”Publish or Perish” Pros. & Cons.

A series of three presentations

SCIENTIFIC PUBLICATIONS
LIFECYCLE

RESEARCH PROPOSAL
LIFECYCLE

RESEARCH SOFTWARE
LIFECYCLE

LIFECYCLE OF A SCIENTIFIC CAREER

About the speaker

Co-authored

- 2002-2023 ~90 scientific papers (journals, conferences, workshops, Posters)

Severed as member of many program committees/editorial boards

- 2006-2009 Guest editor for Special Issues International journals
- 2009-2016 Assistant to the EiC,
  Future Generation Computer Systems Journal, Elsevier
- 2015/16/19 Program Chair International conferences
- 2002-2023 Program Committee of many conferences and workshops

Reviewed projects for many EU funding agencies

- 2023 Swiss National Science Foundation
- 2016-2023 EU commission: FP7, Horizon 2020, Horizon Europe
- 2012 French funding agency ANR,

Motivation to prepare these presentations

Closing statement of the presentation of Richard Hamming 1995 *"**you and your research**"*

" … this lecture is all about, revivalist preacher preaching. Well, now I've told you things, how to succeed. ***No one ever told me the things I've been telling you. Nobody. I had to find it for myself. I've told you how to succeed. You have no excuse for not doing better than I did. Thank you****."*

Among other things Hamming is known In information theory for

"the **Hamming distance** between two strings of equal length is the number of positions at which the corresponding symbols are different. "

who can benefit from this presentation

STUDENTS STRUGGLING WITH GETTING THEIR FIRST PUBLICATIONS

JUNIOR RESEARCHERS AIMING TO SCORE A PUBLICATIONS AT HIGH IMPACT VENUES

RESEARCHERS WHO WANT TO UNDERSTAND THE REVIEW PROCESS

JOIN EDITORIAL BOARD

Motivations to write or Read **scientific papers**

Authors

Necessary condition to get PhD
Advance their scientific carrier
Have an impact on Science (H index)
Share scientific knowledge

Readers.

Acquire scientific knowledge
Do no re-invent the wheel (extend, Contribute, …)
Position their research

Type **scientific papers**

RESEARCH PAPERS OR JOURNAL ARTICLES

REVIEW ARTICLES

CONFERENCE /WORKSHOP /POSTER PAPERS

THESES AND DISSERTATIONS

BOOKS

TECHNICAL REPORTS

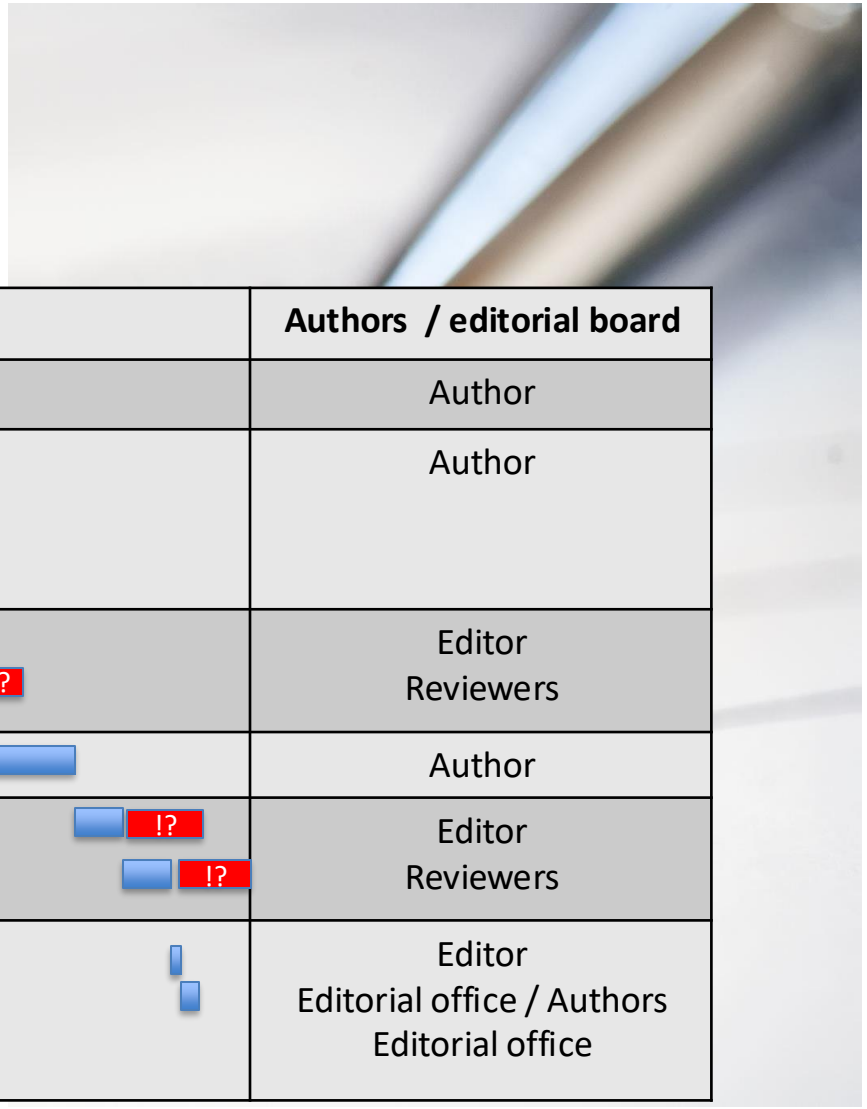
WHITE PAPERS

PATENTS

Constraints and limits when write **scientific papers**

Length Constraints Number of pages / words	Ethical Considerations
Language barrier	**Review process**
Biases author reputation, affiliation, …	Publication costs

The Scientific review process
(Peer review process)



steps	Authors / editorial board
1. Conducting Research	Author
2. Manuscript Preparation 3. Selecting a Journal /conference / 4. Submission	Author
5. Editorial Review **6. Peer Review**	Editor Reviewers
7. Paper Revisions /rebuttal/ and Resubmission	Author
8. Editorial Review **9. Peer Review**	Editor Reviewers
10. Acceptance / Reject 11. Proofreading and Author Approval 12. publication	Editor Editorial office / Authors Editorial office

Fallacies about scientific publication process

- Only technical content matters

Editor

- Editors read the entire paper

Reviewers

- open-minded scientists (not biased by their own opinions.)
- “Experts” in the domain
- Able/willing to understand implicit messages
- Not bias by authors reputation and affiliation
- **Get compensation for their work and time**
- Default behaviour to accept papers

Note:

- Editors get credit for their work
- Reviewing is a service for the communittee ☹

The Scientific review process

1. Conducting Research

Empirical research

Data-driven

Observation
Measurement

Theoretical research

Concept-driven

conceptualization and Deduction

Exploratory and Conceptual

Note:

- Out of Scope of this presentation

The Scientific review process

2. Manuscript Preparation

Common mistakes

Missing
- Problem statement
- context

Ambiguous statements
- leaving room for multiple interpretations, implicit messages ..

Mixing content
- Related work with Background information
- Title of sections do not really match the content

imbalance between
- Design vs implementation
- why vs How

- **Danger: Good research work** can be rejected because of these simple and obvious mistakes
- <u>The presentation counts as much as the content !!!</u>

The Scientific review process

2. Manuscript Preparation

Authors

Simple rules

Clarity

- Use active form
- Be explicit use the correct signalling words

Highlight the contribution

- Use the related work to show the added value.

Presenting the result

- Baseline
- Identify the proper metrics

Discussion and Conclusion

- A Clear and easy to read paper with a small contribution has **more chance** to be accepted

than

- a paper with **significant contribution** but difficult to read and not-well structured.

The Scientific review process

3. Selecting the venue

Scope of the Journal and the venue

impact factor

Citation

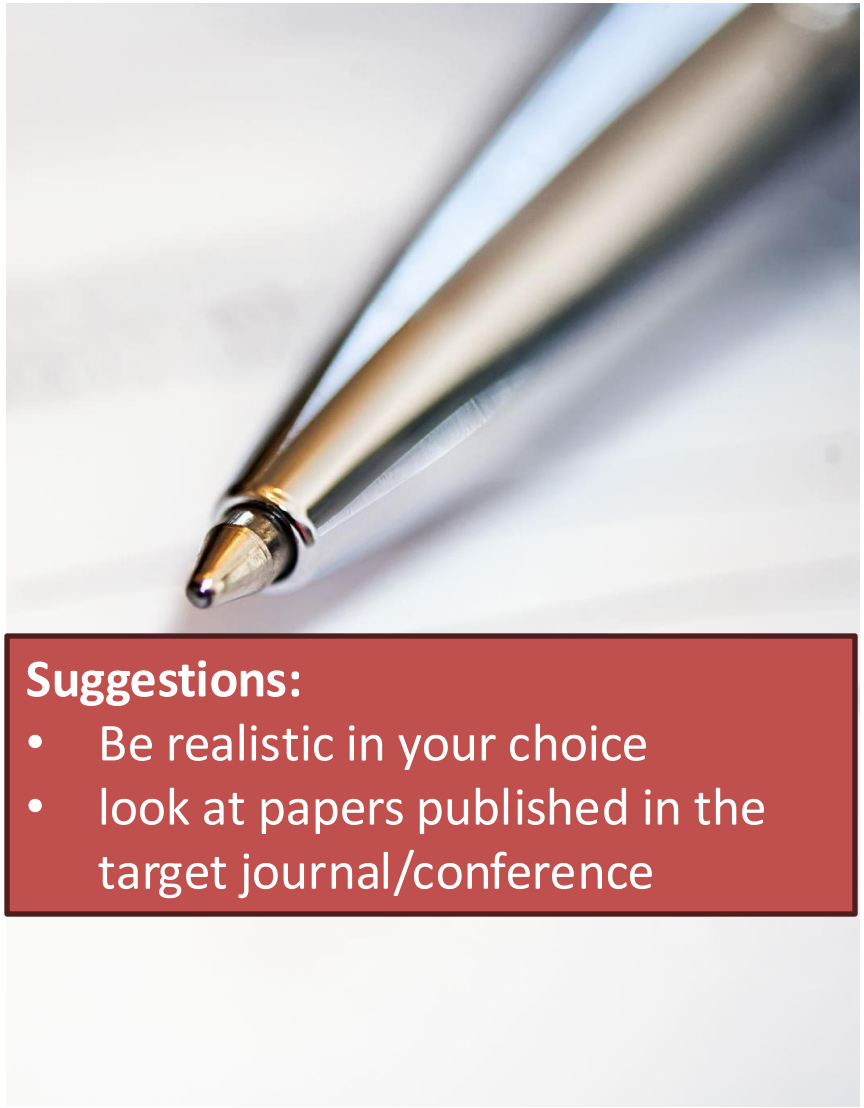
Indexed

IEEE-explorer
ACM-
dblp
Scopus
web of science
google scholar

Classification(s)

Journal Class A/B/C

Conferences Class (many ranking exist)



Suggestions:

- Be realistic in your choice
- look at papers published in the target journal/conference

The Scientific review process

4. submission

Most venues have submission systems

Easychair

Conference Management Toolkit

…

Submission

paper following journal conference pre-defined template

Reproducibility of science* : data and code

Important

submission systems include **plagiarism** check

Suggestions:

- Monitor the progress of the review: under-Review/completed
- If the status does not change after a few months contact the editor

The Scientific review process

6. peer/expert Review

TODOs Editors

- **May** reject the paper
  - reason: out of scope
- Select the reviewers
- Read the rebuttal of revised papers
- Editors make decision based on:
  - Title
  - Abstract
  - Structure
  - The rebuttal for (revised) papers

suggestion:

- **Follow the status of the paper via the submission portal. If the paper does not move to the state "under Review" in a reasonable time contact the editor**

The Scientific review process

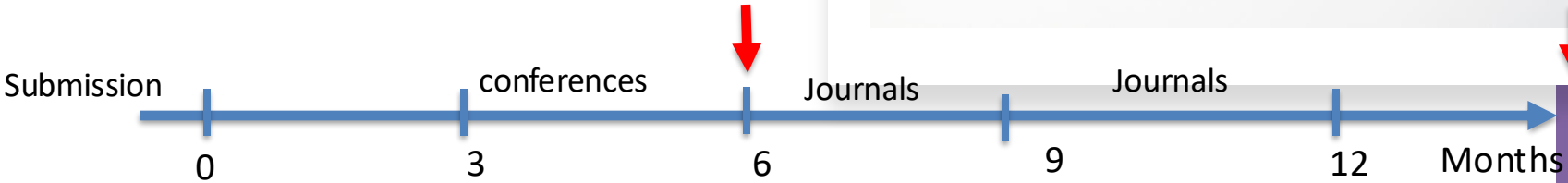
5. Editorial Review

TODOs Reviewers

- Read the **entire paper**
- Give recommendation to editor
  Accept/minor revision/ Major Revision/ Reject
  Accept (strong/weak) / Reject (weak/strong)
- Read the **entire paper revisions**
- Read Rebuttals

Suggestions:

- Never give up quickly resubmit in case of rejection or major revision
- Write rebuttal that answers <u>all the questions raised in the review</u>



The Scientific review process

10. Acceptance/rejection

TODOs Editors

- Editor send the acceptance/rejection letter to the authors
- Send paper to the editorial office

Suggestions:

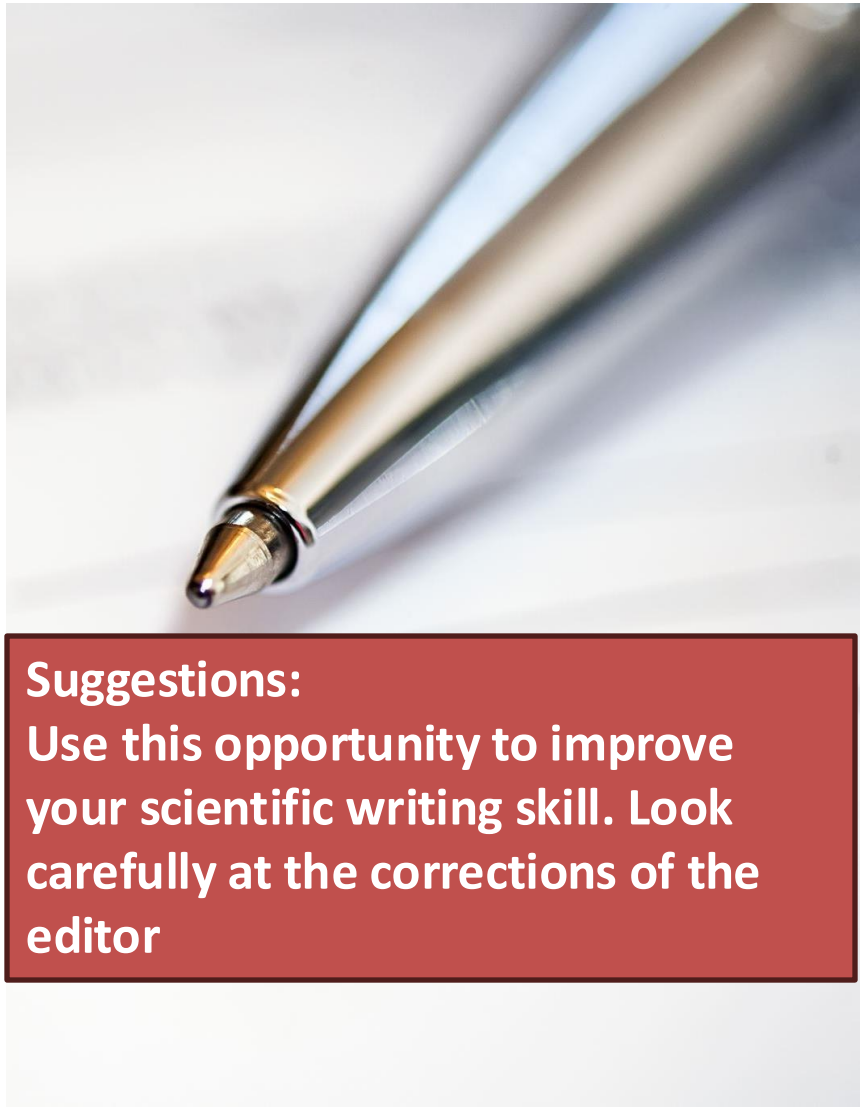
- Never give up quickly resubmit in case of rejection
- Take seriously the comments of the reviewers before resubmit in another venue.

The Scientific review process

10. Proofreading and Author Approval

Scientific Editors

read the paper and suggest improvement from Language point of view



Suggestions:
Use this opportunity to improve your scientific writing skill. Look carefully at the corrections of the editor

Authors

Authors proofread the suggestions

- Accept them
- reject them if they change the meaning of the sentence

The Scientific review process

(Peer review process)

Does Peer review process **guarantee** the **quality of the publications**?

- **In principle Yes,**
- **but not always …**

Authors	Editors/Reviews
Selective Reporting	Conservative attitude
Bias in Authorship	Bias in the review (lack of knowledge)
Lack of Reproducibility	lack of time and Professionalism
Conflict of interests	

- The reviews are the first readers of the papers and could be last if the authors **do not convince them**

Misconduct incidents in Scientific publications

Suggestions:
Avoid to be on the wall of a shame or on a blacklist of conferences, it will hurt your career.

Don’t apply ”Publish or Perish”
at all costs

Further reading:

1. Scientific Writing Made Easy: A Step- by- Step Guide to Undergraduate Writing in the Biological Sciences https://esajournals.onlinelibrary.wiley.com/doi/epdf/10.1002/bes2.1258
2. GUIDE TO SCIENCE WRITING: RESEARCH MANUSCRIPTS AND REVIEW ARTICLES http://www.soest.hawaii.edu/GG/FACULTY/ITO/GG610/Guide_to_Science_Writing.pdf
3. Analyzing the Past to prepare the future: writing a Literatures review https://web.njit.edu/~egan/Writing_A_Literature_Review.pdf
4. The Elements of Style by William Strunk Jr. https://daoyuan14.github.io/elos.pdf
5. Writing your dissertation in fifteen minutes a day by Joan Bolker http://courses.washington.edu/rdesign/Bolker%201998.pdf
6. Writing Science: How to Write Papers That Get Cited and Proposals That Get Funded by Joshua Schime https://www.kaznu.kz/content/files/news/folder23099/SchimelJ_WritingScience_2011.pdf
7. Hamming, "You and Your Research" (June 6, 1995) https://www.cs.virginia.edu/~robins/YouAndYourResearch.pdf (https://www.youtube.com/watch?v=a1zDuOPkMSw)

Further reading:

Suggestions from Khaled Bounar
Senior Principal Engineer, PhD

"**publish or Perish: Escaping the hamster wheel of academic research pursuits**"
By John Howard

Dr John Howard is an economist, a science, research and innovation policy adviser, and a Visiting Professor at the University of Technology Sydney. He is also a Campus Visitor at the Taxation and Transfer Policy Institute, Crawford School, ANU

https://johnmenadue.com/publish-or-perish-escaping-the-hamster-wheel-of-academic-research-pursuits/

Core Principles of the IEEE Code of Ethics

- To uphold the highest standards of integrity, responsible behavior, and ethical conduct in professional activities.
- To treat all persons fairly and with respect, to not engage in harassment or discrimination, and to avoid injuring others.
- To strive to ensure this code is upheld by colleagues and co-workers.

https://www.ieee.org/about/corporate/governance/index.html

Topics for the Panel discussions

A proposal

- Ethics in scientific writing
- Writing scientific paper for non-native English speakers.
- Impact of AI (language processing model) on Scientific writing
- How to measure the impact of Scientific publications.
- Is the classical scientific review process still valid today are there alternatives.

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