

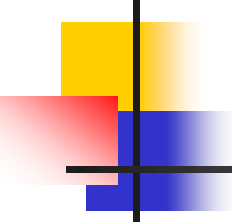
Writing a scientific paper





What is a scientific paper

- A presentation of an original contribution of an author/several authors addressed to the scientific community for result promotion and claiming (and validation)



Premises: identification of the “open problems”

- Keyword no. 1: READ!
From philosophy : “Quantitative accumulation lead to qualitative jumps!”
- Keyword no. 2: LISTEN!
The experts have already the knowledge to state if something has not been done and which are the trends and future directions
- “Shortcut”: follow a project



Effort

- Keyword no. 1: INVENTIVE ! (1%)
- Keyword no. 2: WORK! (99%)
- The research is an iterative process:
 - Study the state-of-the-art
 - Identify opportunities
 - Contribution design
 - Implementation, testing, comparing
(potentially coming back to the state-of-the-art)
 - Communication (paper/conference)
 - Impact on the community

Any of the above steps can lead to a STOP



The structure of a scientific article

- Title, authors and affiliation
- Abstract
- Introduction
- Own contribution description
- Proof of usefulness
- Conclusions and future directions
- Acknowledgment
- References



Title, authors, affiliations

- Reflects in 3-10 words the original contribution and the field
- All persons that have contribute to the paper and its exposed results should be in the author list
- Affiliation: allow the interested readers to contact the authors/the indexing services to identify the unit activities
- Usually one author is the one who take the responsibility of communicating with the readers (corresponding author)
- The persons who have contribute to the paper improvement, but they have contribute to the paper improvement, but not the results that is reported should be mentioned in acknowledgment section (e.g. the funding agency)



Abstract (resume)

- Describes shortly the motivation, contribution and its utility
- Often followed by keywords (used for indexing, reviews, searching, etc)
- Recommendation: write it after the body of the article is finalized



Introduction

- Presents the state-of-the-art in the field (usually in a condensed form) to which the contribution of the author(s) is referring to
- Contains a critical analysis to other contributions on the same topics (with citations)
- Based on the state-of-the-art analysis, a motivation of the need for the particular contribution that is presented in the article
- Is closed with a short description of the sections that are following it
- If the state-of-the-art is too long, it is preferable to present it in a new section after the introduction



Description of the own contribution

- Splitted in one or more sections, depending on the author's vision
- At the beginning of each section a short description of the section is needed
- There are no standards for this part
- The keywords for the communication success: clarity and figures
- The long texts that are not original can lead to the rejection of the paper in reviewing phase



Proof of the usefulness

- Section with comparisons with the contribution of other authors
- Prototype testing should be done in the same hardware conditions to ensure objectivity
- Keywords for communication success: tables and graphics
- The lack of such section that ensure the positioning versus the existing knowledge leads to the paper rejection



Conclusions/future directions

- The conclusions should present shortly the main contribution
- Opposite to the abstract, this section is addressed to the ones who have read the paper entirely and they need to remember “why” and “how”
- Future directions are necessary both for the authors as well as the ones interested to continue the activity of the authors



Acknowledgments

- Optional, it can specify
 - If the paper/contribution has been financially supported by an institution or a research funding agency (including the case of using external infrastructure)
 - If the paper has been modified according to the suggestions of nominated persons or anonymous reviewers
- Can appear also as footnote on the first page



Reviews and technical reports

- Review = critical study of the state-of-the-art with the identification of the “open problems/doors”
- Technical reports:
 - An article in initial phase, or
 - An article in a detailed version



Republication rules

- Autoplagerism = re-publication of a part of entire paper = bad “mark” for the author(s)/affiliation/journal or conference (as quality guarantors)

- Be careful to each editor rules!

Ex: Copyright forms for LNCS or IEEE CS

- Rule in CS: a paper published in a proceeding can be republished in an extended form in a journal if there is at least a 30% new text (the percent can vary from one journal to another), and the initial paper is cited
- Exception: the electronic version on the site of the author or other archiving systems with a pointer to the initial paper



Plagiarism

- Copying a text that is not of the author without “quoting” and [citation]
- Different degrees:
 - Very bad: copying the original parts of another paper and declaring it as own contribution
 - Bad: copying a text of small dimension in the state-of-the-art part of the paper, even with a citation, without quoting
- Exception:
 - In small quantities accepted in tutorials, monographies, bibliographical studies if the source(s) is/are clearly stated and cited