



How to work with Literature and write Scientific Material

by

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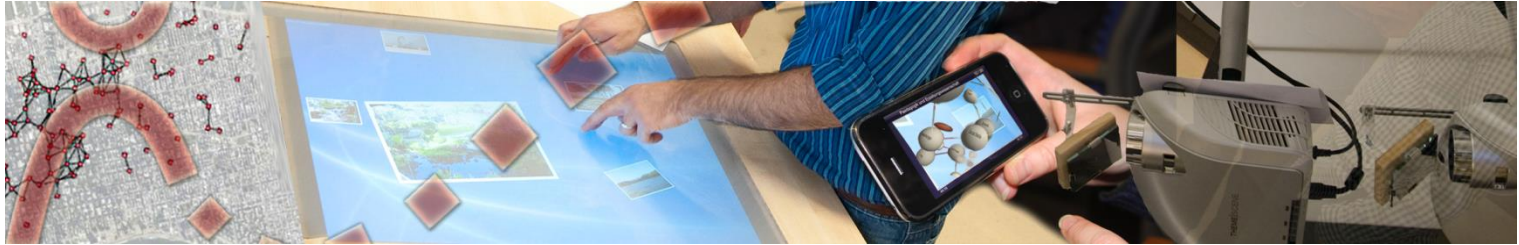
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CONTENT

- What's a scientific publication?
- Finding (good) references
 - Correct referencing
- Writing your own paper
- Reviewing papers



What's a scientific publication?

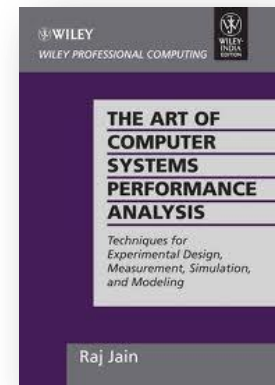
■ Scientific Publication ➡ a message

- With scientific background
- Offer a new *insight* of a scientific problem
 - Solution
 - Problem
 - Criticism
- **OR** a survey of a research field

■ The message is a claim

- That needs to be evaluated

AND validated





Types of Publications

■ Books

- Survey (mostly) about a topic

■ Journal Articles

- Collection of related topics into one magazine (the journal)
- Quality mostly depends on the Journal
- Rankings: <http://www.core.edu.au/index.php/>

Good Journal ➡ Good Article

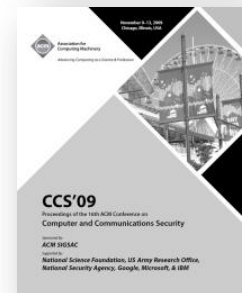
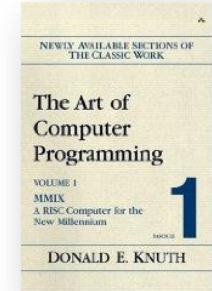
■ Conferences and Symposia

- The most recent research achievements
- Strict page limits
- Papers followed by a presentation
- Quality is usually connected to the Conference
- Rankings: <http://www.core.edu.au/index.php/>

Good Conference ➡ Good Paper

■ Workshops

- Mostly for work in progress
- Good for discussing new ideas





References and Referencing

“... Often books speak of other books. Often a harmless book is like a seed that will blossom into a dangerous book, or it is the other way around: it is the sweet fruit of a bitter stem. In reading Albert, couldn't I learn what Thomas might have said? Or in reading Thomas, know what Averroës said?”

Brother William of Baskerville
— *The Name of the Rose* (1980), Umberto Eco

- Refer back to the original source of information

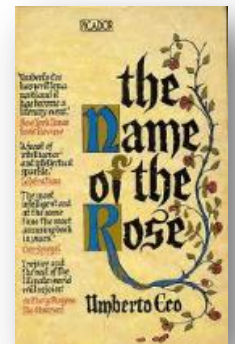
- For others to identify the foundations of your work
- Giving credit, when credit is due



Not doing so is **REALLY** bad practice

A.K.A. plagiarism

- [Grundregeln der wissenschaftlichen Ethik am Fachbereich Informatik](#)





What should I reference?

- Scientific publications

- Articles, papers, books

- Standards

- RFC, ITU, IEEE, W3C etc.

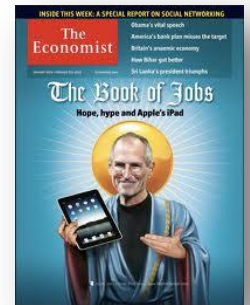
- + All other non-scientific sources

- Surveys
- Magazines
- Reports

- Can I reference Wikipedia?

or any other online material?

➡ **YES**, but **mind**: not reliable (or stable) information sources





Writing a Scientific Publication



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1. First, define the message

- Objective of your publication
- ➔ define the area of research

2. Read the related work

- Define the work around your work
- Finding out what has been done



3. Implement your idea

- Evaluate your idea
- Validate your idea

3. Survey the related work

- Evaluate differences
- Identify trade-offs

4. Write your publication

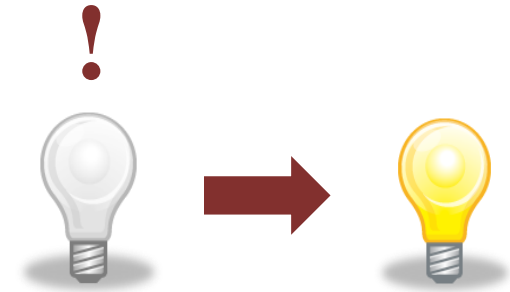


1. Your Work, Your Message



- Finding the message

- The most difficult part (!)
- Also, the creative one
 - go beyond the **state of the art**
- Find a story line.



- A message that needs science

- Scientific foundations + challenges
- ➡ can be found in **related work**



2a. Related Work? Where? How?



■ Related Work? Where?

- For the initial literature ask your supervisor
➡ it will give you a broad idea about the area

■ Check publication repositories

- ACM Digital Lib <http://portal.acm.org/portal.cfm>
- IEEE Xplore <http://ieee.org/portal/site>
- Google Scholar <http://scholar.google.com>
- Academic Search <http://academic.research.microsoft.com/>

- Conference directories <http://www.dblp.org/search/>
- Authors' home pages

- Other sources from the reference lists

REPEAT





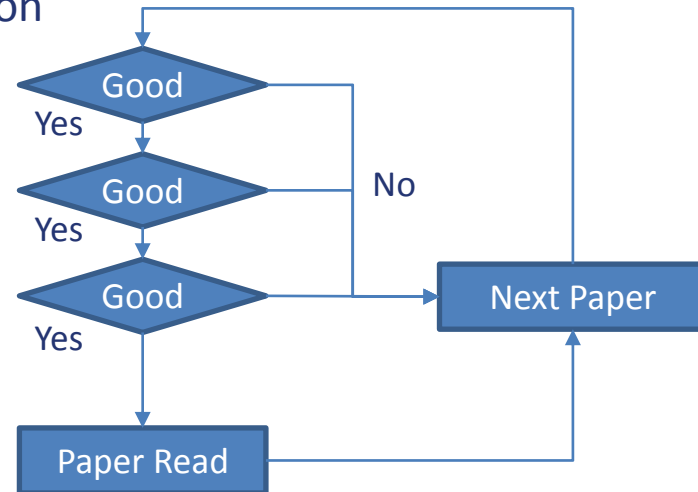
2b. Related Work and Relevance



■ Related Work $\rightarrow \infty$

- Identify the relevant sources
- Evaluating the importance of a publication

1. Read the abstract
2. Check the reference list
3. Read the conclusions
4. Read the rest



■ Related work will

- Compare **your results** against their results
- Be used as input for a survey

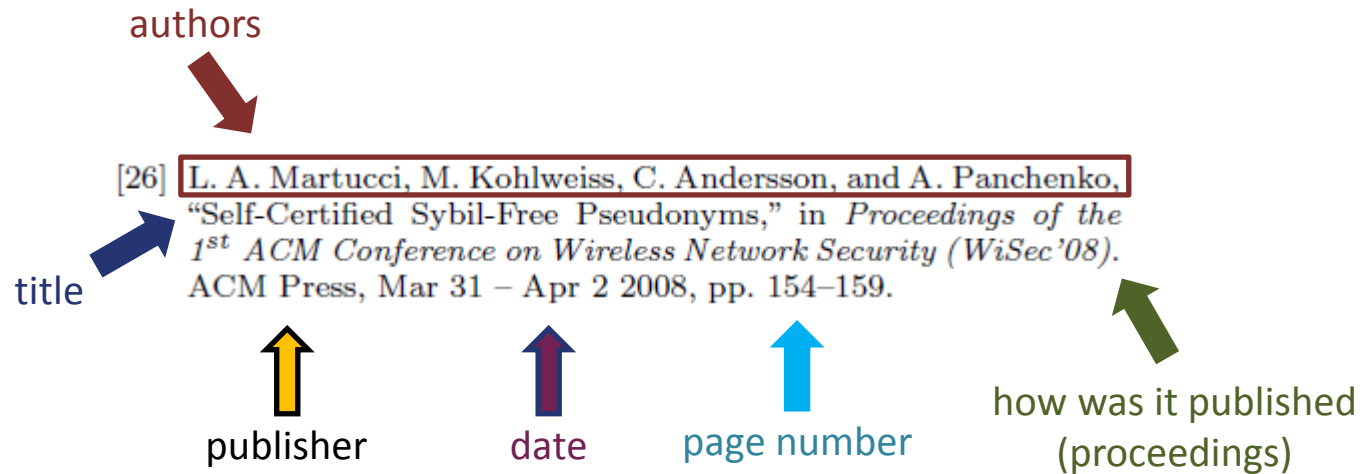


Referencing: doing it right



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- A reference looks like this:



- there are also other reference styles
- if you use LaTeX to write your report, have a look at BibTeX.



4. Write your Publication



- Always have a good paper structure

- Organize your ideas
- Organize your papers

Define it **BEFORE** starting to add text

- Plan the content of each section

- Writing skills

- No one learns without doing it

General Guidelines:

- Be concise
- Be precise





■ Peer-reviews

- Peers review your work and verify its general quality
- Evaluate the work before being published
- Offer suggestions to improve the work (!)



■ How's quality defined in a publication?

- Novelty
- Soundness
- ➡ Evaluation + Validation
- Completeness
- Readability

■ What to write

- Positive and negative aspects of the work
- Constructive criticism (if possible)
- Offer suggestions to improve the paper
e.g. + literature
- Suggest an overall evaluation of the work

■ It is **NOT** the reviewer's work

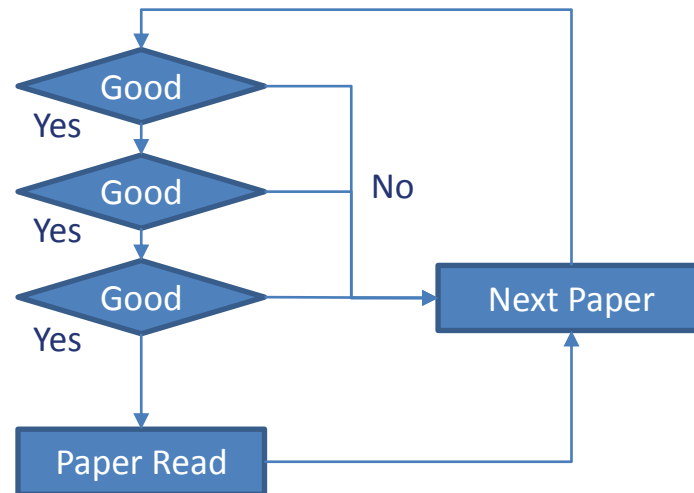
- to **correct** the publication!
- to point typos (unless if it's one or two)



Summary

- A scientific publication is a **message**; a **validated claim**
- Refer to the original source of information, **avoid plagiarism**

1. Read the abstract
2. Check the reference list
3. Read the conclusions
4. Read the rest



- The peer-review should help, not criticize