

Issues in making a written presentation

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A report:
the prime medium for reporting scientific results.

In computer science: the conjunction of

- a good idea / a new idea,
- something sound, and
- something practical.

This talk: some issues behind a report.

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Plan

- Reading a paper.
- Writing a paper.

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Reading a paper

- Information acquisition and retrieval.
- Critical reading.

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Information acquisition

In principle, a scientific paper provides enough information for its reader to reproduce its contents:

- proof,
- experiment.

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Exercise: Think of the corresponding criterion
for an overview / survey paper.

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Information retrieval

It is a good idea to keep reading notes
(minimally as annotations in one's bibfile).

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Critical reading

The three stages of reading (as one grows up):

1. the books say blah and thus it is true;
2. this book says blah;
3. the author wrote blah.

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Examples

1. "Introduction to Data Bases"
2. "Advances in Data Bases"
3. "A new technique for query processing in object-oriented data bases"

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Critical reading

Don't swallow the author's propaganda,
accepting the paper as the author constructed it.

Instead:

- disassemble it to identify its real thrust;
- appreciate;
- probe / question / stress;
- (if needed) reassemble: minimize / expand.

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Plan

- Reading a paper. ✓
- Writing a paper.

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Writing a paper

A paper is written for others to read:

- yourself in the future, 😊
- other researchers, and
- reviewers.

It should thus reflect all the concerns already mentioned:
readability, clarity, etc.

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Organization

- Title / list of authors / abstract.
- Introduction / compelling example / related work / overview.
- Development.
- Conclusion (if any).
- Acknowledgments / references.

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The title

- It should be informative.
- It should be concise.
- It should be catchy / memorable.
- It needs to be original.
- It does not need to be funny.

Better seek generality than specificity.

E.g., “A study of an LALR(1) parser generator”
is better than “YACC in Unix System V”.

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On the temptation of being funny

The messenger can hide the message.

Circus analogy:

Do you want to be remembered as the clown (form)
or as the trapeze artist (contents / achievement).

Besides, most funny titles do not convey concrete messages: they tend to be puns or insiders's jokes.

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The list of authors

- Alphabetically ordered;
- ordered by “degrees of contribution”;
- student first, adviser second;
- etc.

Key: the message should be more important
than [the order of] the messenger[s].

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Fact:

Many more people will read your abstract than your paper
(e.g., in a bibliographic data base).

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Titles, abstracts, data bases, and search engines

Abstracts are the key to locate papers on the web.

Abstracts are stored textually,
so they should NOT contain formulae, special symbols,
or bibrefs.

(Ditto for titles.)

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As time goes by

It sounds silly, but...

- remember to date your manuscripts, and
- remember to update your bibrefs (“This paper is superseded by ...”).

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The introduction

- It should start with a bang.
- It should stop with an overview of the rest of the paper.
- It should mention which prerequisites are expected from the reader.
- It should say clearly what is the achievement of the paper.
- A compelling example is always good.

(cf. Mozart's piano concerti)

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Starting with a bang

- "Real programs have effects." (Mason and Talcott, JFP)
- "It was a dark and stormy night." (Bulwer-Lytton)
- "Little Peggy was very careful with the eggs." (Card)
- "The maid screamed, that was the problem with live servants." (Goulart)

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Eye catchers

- First words.
- Last words (of paragraph / section / chapter / thesis).
- Capitalization (in an abstract).

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Pitfalls

- Exaggerating.
- Seeking effect for seeking effect:
“This paper bridges a much needed gap.”
(quoted by Neil Jones)
- Practicing Cooper’s prose style (cf. Mark Twain on Fenimore Cooper).
- Misspelling (always use a spell checker!).

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Standing on the shoulders of giants

Positivise – for example:

- the goal is blah, and it would be great to reach it;
- what has been done so far is remarkable,
but it does not quite reach the goal;
- in this paper, we take one step further towards the goal.

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Development

- Organized in sections / chapters.
- Should be progressive.
- Should be as complete as possible.
- Should be as concise and precise as possible.

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A macroscopic rule of thumb

Make each chapter have

- an introduction, and
- a summary and conclusion.

This will force you to articulate your report.

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A microscopic rule of thumb

Use passive tense for work done by others: “it is known”, “it has been done”, etc.

Use active tense for reporting what you have done: “we have found out”, “we have done”, etc.

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Related work

- Mandatory.
- Situates the novelty and significance of your work.
- Where: either part of introduction, or part of conclusion, or stand-alone section (second or second to last).

Pitfalls:

- forgetting or mispresenting someone else's work; and
- reinventing the wheel.

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Bibliographical references

Bibrefs should be used parenthetically, so that they do not interrupt one's reading.

Example: "...as seen in [2]." is awful, and so is

"[KAZAM97] shows that..."

Better: "...as introduced by Church in his monograph on the λ -calculus [2]."

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The conclusion

None in the mathematical tradition.

Minimally:

- recapitulates the problem and the contribution;
- assesses the significance of the contribution;
- suggests / outlines future work.

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The references

They must be impeccable:

- accurate (correct year, etc.);
- complete (page numbers, etc.).

Standard pitfall: misspellings in titles.

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Tips for writing a report

- Top-down approach: goal and significance first.
- Bottom-up approach: results first.

A rule of thumb:
put in your paper what you (would) like to find
in other's papers.

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Methodological pitfall

Avoid core dumps.

- The report should be focused on what it achieves.
- Tangents should be eliminated.

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Plan

- Reading a paper. ✓
- Writing a paper. ✓

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Summary and conclusion

Writing reports is part of computer science.

It is the means for reporting results.

It should be clearly organized and clearly detailed.

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Tak.