



Great research!

and how to write about it

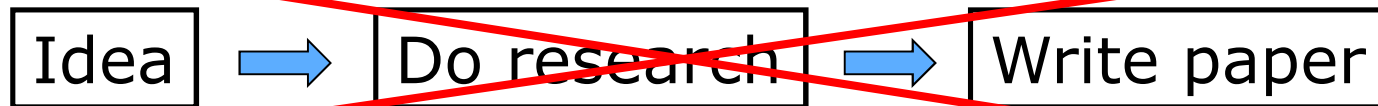
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Thanks to Simon Peyton Jones and Björn Victor!



Where to begin

No!



Let the paper feed your research!
(not the other way around)



The idea

- You don't need a great idea to start!
 - ✦ it only *appears* everyone else have
- Start writing, even if the idea seems small and insignificant!
- It often turns out to become more interesting than you first thought



The idea

- Start writing day 1!
- Make a disposition of the whole paper!
 - ✿ If it is an examination paper, or thesis, discuss it with your reviewer/examiner
- Save coding and experiments for later!
 - ✿ sometimes much later
 - ✿ may turn out to be unnecessary for this paper
 - may lead to future papers



Who is the reader?

- Consider who you're writing for!
 - ✦ What can they be expected to know?
- Will your paper make sense 10 years from now?
- Be explicit and comprehensive!
 - ✦ Don't take things for granted
- Make sure the reader knows what your main idea is!



Narrative flow

- Here is a problem
- It is an interesting problem
- Here is my idea
- My idea works (details, data)
- Here's how my idea compares to other approaches



Structure

- Title

- Abstract

If you need a
glossary, insert
it here

1. Introduction

2. Body (several sections)

5. Related work (if not part of introduction)

6. Conclusions and future work

- References



Structure

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Title

- The 'face' of your report
 - ✦ Maybe few people read your paper, but many will read the title!
- You have 2 seconds to catch the reader's interest!
- Short
- Catchy
- True



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Abstract

- Written last!
- Sell your idea!
 - ✱ Make the reader want to stay with you!
- Single paragraph, 100-200 words
- Four parts/sentences
 1. What's the problem
 2. How did you solve it
 3. What are the results
 4. Conclusion (what it means for the future)
- Make sure the abstract stands on its own!
 - ✱ No reference tags
 - ✱ Avoid acronyms



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Introduction

1. Describe the problem
 - ✱ May include prior work, but ...
 2. State your contributions
 - ✱ Perhaps as a bulleted list
- Nothing more!
 - Avoid "The rest of this paper is structured as follows ..."
 - ✱ Better to refer to the different parts of the paper in **1.** and **2.**



Structure

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Body

- Subject dependent. For example:
 - ✱ Theory → Method → Results
 - ✱ Requirements → Design → Implementation → Evaluation
 - ✱ Existing methods → Comparison → Suggestions
 - ✱ ...



Body:

When explaining things

- Do it top-down!
- Intuition first, details later
 - ✱ Easier to understand the details
 - ✱ A reader who skips the details, get something valuable anyway
- Choose the most direct route to the idea
 - ✱ The way you came up with the idea is usually not interesting



Body: The details

- The *introduction* makes claims
- The *body* provides evidence
- Check each claim in the *introduction*, identify the evidence in the *body* and forward reference to it from the claim!
- Evidence can be analysis and comparison, theorems, measurements, case studies ...
- Imagine a reader who wants to repeat your experiments. Is your information enough to do that? Be rigorous!



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Related work

- Either part of the introduction or after the body
 - ✿ After the body → easier to explain
- Credit is not like money!
 - ✿ Giving credit to someone else does not take away from yours!
 - ✿ Failing to give credit, however, does!
 - If you claim an idea is yours when it isn't, you either did not know (bad), or you knew but pretended it was yours (very bad)
- Be honest!
 - ✿ Acknowledge weaknesses in your work



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Conclusion

- Summarize your contributions
- Conclusions from the results
- Implications for the future
- Be brief!



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References

- Always refer to the literature when
 - ✿ you first introduce an established concept
 - ✿ you claim things for which there is no evidence in this paper
- Use numerical tags within brackets [1]
- Enumerated reference list
 - ✿ sorted in the order they first are referred to in the text
 - ✿ Reference must be complete (to find the source)
- Avoid web references!
 - ✿ Content may, and probably will, change
 - ✿ Imagine someone reading your paper in 10 years
 - ✿ If you must use web references, date them in the list



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Language

- Don't write as you talk! (or chat)
- Grammatically correct English
 - ✱ including pronouns ('the', 'a', etc)
- Be clear, concise and correct!
- Be personal if you wish, but within reason
 - ✱ Don't address the reader directly ("you")
 - ✱ "We" meaning you and the reader may be OK
 - ✱ "We" as in you, the only author, is ridiculous!
- Spell check!
- Have someone else proof read!
- Spell out acronyms first time they are used
- Use figures



Common mistakes

- Forgetting who the reader is
- Taking too much for granted
- Poor reproducibility (lack of details)
- Not supporting your claims by references
- Incomplete references
 - ✱ Author and title is not sufficient
- Unnecessary web references
 - ✱ not dated



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Good luck!