

How to Read a Conference/Technical Paper

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Most technical papers range from 4 pages for “short” papers, up to 10 or more pages for “long” conference papers. Papers not published for conferences, such as on <https://arxiv.org/>, are not bound by conference restrictions

Paper Organization

Papers generally have this organization:

- Title and author information
- Abstract
- Keywords (varies by venue)
- Introduction to the domain
- Discussion of prior work
- Presentation of novel work introduced in this paper
- Results and Evaluations of the work in the paper
- Conclusions
- Future Work (more typical for long papers)

First Pass – High-Level Overview

- Paper title
- Authors and affiliations
 - o If authors are unknown, look them up on <https://scholar.google.com/>
- Abstract and key words – get a sense of what they are trying to do
- Conclusions – read what they claim they did
- References – minimal or exhaustive? Relevant or not? Recent or not?

Second Pass – Critically examine claims and evidence

- Familiarize yourself with prior work so you understand the SOTA (state of the art), this may involve some googling or reading through papers that are referenced
- Take notes on what is new in this paper
 - o What did they do?
 - o How did they do it?
 - o Is the data/code publicly available?
- Examine evidence
 - o Does this work extend the SOTA to a minor or significant degree?
 - o What evidence supports this?
 - o Is this work significant to other researchers? If so, how?
 - o Do the claims in the narrative correspond to the claims in tables and figures?
- Reproducibility
 - o Will other researchers be able to reproduce these results and build on them?

Nth Passes and Deeper Dives

It may take several passes through the paper to understand what they did. Papers released by corporations may have had to go through lawyers first to remove sensitive proprietary information. This sometimes results in vague papers.

Summaries and Keeping Track

If you are a graduate student focusing on a specific domain for your research, you will need to read dozens of related papers. How can you keep track of them? There are many apps that can help you keep track of important papers you have read:

- Evernote
- Mendeley
- Zotero
- New ones every day

To keep up, focus on a narrow domain as well as being aware of broader trends.

Some Notes about Research Publication and Ethics

This is an exhaustive topic, but here are some general guidelines:

- Conference papers are submitted to a peer review process, in which 2-3 experts evaluate the paper according to a rubric, and then a conference chair makes a final decision; authors are given feedback and an opportunity to revise their paper for resubmission if only minor problems are identified by the reviewers
- Papers are submitted without authors/affiliations or self-references such as “in our prior work ...” so that the process is double blind
- It is not considered ethical by many to submit the same paper to several conferences
- Plagiarism, even self-plagiarism without citation is not acceptable
- Code and data responsibility: code/data is often shared so that results are reproducible
- Final paper publication after acceptance should include any research support information such as grants and technical support; any commercial interests should be clearly stated