

Research Tidbits

When a new problem is encountered, one of the first steps in solving the problem is to understand what has already been worked out. Sources of information include work that has been published in many different forms:

1. journals
2. conference proceedings
3. workshop proceedings
4. poster sessions
5. technical reports
6. researcher's web sites
7. books
8. ...

Each source of information has strengths and weaknesses. Journal articles are used to archive research that has been completed, but tend to be somewhat out of date by the time they are published. Conference proceedings describe work in progress that has been substantially completed whereas workshops and poster sessions are venues for presenting work that is still being worked out. Although they are current, conference papers, workshop papers, and poster sessions tend to be quite brief due to page restrictions. Technical reports are generally longer and contain more detailed descriptions and examples of the work. Researcher's web sites often have a list of publications and descriptions of projects they are working on. Lastly, books are an excellent source of background or general information in established areas.

The structure of a paper or technical report (or thesis) is generally consistent:

Title, author, affiliation, contact information
Introduction
Body
-
-
-
Conclusions
Future Work
References
Appendices

At the top is the title of the work along with the names and affiliations of the authors. The author list is used to find related publications in the same general area written by the authors. The contact information is important if you need to ask the authors a specific question about their work (this is allowed). The abstract section provides a concise overview of what the work is covering and the results. The introduction section is the first main section. It provides motivation for the work, general background information in the research area, and describes the organization of the remainder of the document. The body

contains a discussion of related work that has been done, the work you have done, and the results you have contributed. The body is generally organized in two or more subsections. After the body, there is a section for the conclusions. The conclusions should not just be a summary of what has already been said in the body of the paper. Instead, the conclusions should be drawn from the results you have contributed and provide insight into why these results are important. The section on future work conveys to the readers the next step you are going to take in the research area. The reference section provides a summary of the work you have drawn on in your research and gives credit to the originators of these ideas. Appendices are used to place detailed information, examples, etc. in the document. The appendices can help the reader thoroughly understand your work, without burdening the reader with all of these details in the body of the document.