

## Notes on How to Write a Survey

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Below gives some notes on how to write a survey. This is not intended to be a comprehensive guideline, but only as a brief reference point.

(0) Decide the research area that you would like to work on.

(1) When picking papers to read - try to

1. Pick a recent survey of the field so you can quickly gain an overview,
2. Pick a paper that you can easier understand – book chapters often give easier understandable materials and lengthy explanation that may give you a head start, although they may not be as up-to-date as papers,
3. Pick papers that are related to each other in some ways and/or that are in the same field so that you can write a meaningful survey out of them,
4. Favour papers from well-known journals and conferences,
5. Favour “first” or “foundational” papers in the field (as indicated in other people’s survey paper),
6. Favour more recent papers,
7. Once you have identified an interesting technology to report upon, follow developments in that strand of technology (e.g. time-wise and technology-wise developments).

(2) Gives a structure to your survey, such as Intro, Background, Technique Sections, etc, you can put it in already now.

(3) Identify the main types of techniques in the field. When are they being created? How are they related to each other – technique-wise and system-wise?

(4) Compare the different techniques/system:

1. Can you distinguish the main differences between the different techniques?
2. Which methods use background/prior knowledge such as ontologies, word net and meta-data, etc?
3. What sort of reasoning mechanisms are they using? Is there a progress trend in the different report of research, e.g. in terms of time and in terms of technology improvements?
4. Can you compare the performance of the different types of techniques?
5. What will be the evaluation criteria that you will be using for comparing the different technologies?
6. In addition to text description on those topics above, can you produce a few relevant summary tables on the comparison of the different tools and techniques?

(5) Mention concrete system being developed using those techniques and give details about them, e.g. who developed them, and details of their, e.g. their functions,

specialization areas, the context of their working/testing application, developing history (who develop them and the motivation of development), technical background (which type of techniques used), specific techniques used and implementation details, technical strength and weakness, etc.

(6) When you write the survey, you can write the previous works in terms of temporal order and technology progress order – e.g. A technique/work was developed first to resolve problem X, however, as it does not resolve Y; another technology/work was developed later on to resolve Y, but it does resolve Z. Therefore a later technology/work was developed to resolve Z, but it does not resolve.... And so on.

If there is not an obvious temporal or progress trend order, you can report on a set of related technologies/works to give a description of what they do, their strength and weakness, and the gaps they do not fill - often these gaps are the gaps that you would like to resolve - if you were to report on your own work in the same paper - you can then go on describing your work in more details in a following session.

(7) Citing a reference in your survey:

When you refer a paper in your literature review, remember to cite the full info about the paper, including author names, paper title, publication details and page numbers, etc, see an example reference below:

[1] Adomavicius G, Tuzhilin A., Toward the Next Generation of Recommender Systems: A Survey of the State-of-the-Art and Possible Extensions, IEEE Transactions on Knowledge and Data Engineering, Vol. 17, No. 6. (June 2005), pp. 734-749.

Within your paper where you will use this reference as a part of your text, use “[1]” to refer to the above reference.

For a more comprehensive example and guide on how to quote references, see Springer’s “instructions for authors” below:

[http://www.springer.com/cda/content/document/cda\\_downloaddocument/instruct-authors-e.pdf?SGWID=0-0-45-392601-0&teaserId=343495&CENTER\\_ID=357799](http://www.springer.com/cda/content/document/cda_downloaddocument/instruct-authors-e.pdf?SGWID=0-0-45-392601-0&teaserId=343495&CENTER_ID=357799)