

Feb 13, 2018

# REPORT GUIDELINES

## GOAL

The goal of preparing a report is two-fold. On the one hand, you should get familiar with the process of critically reviewing a paper. This includes reading carefully to extract the essence of a paper, identify strong and weak points and think of where the paper could be improved research-wise. This is not an easy task but an important one if you wish to develop analytical thinking.

On the other hand, you will learn to write a technical report. It requires different mindset than writing a prose text or even a thesis. A report should be very concise and to the point with carefully selected wording.

Finally, each report is dedicated to a single paper and is done by a single person. All papers on a specific topic are then merged into a technical document (*let's call it a chapter*). To create a chapter all authors of the corresponding reports work as a team: the individual reports can be listed alongside but they should be accompanied by an introduction and a conclusion. Eventually, we will collaboratively create a booklet while preserving fairness in grading.

## HOW TO PREPARE A REPORT

In preparing the report we will use Heilmeyers catechism – a set of questions to evaluate research ideas and contributions. The report should include several sections, one per question, which extract information available in the paper to answer the corresponding question. It may be that the paper does not provide information to answer a particular question in which case you can simply write that.

Note that the purpose of the report is to evaluate the solution *on the hand of* the paper and *not* to rate how well the paper is written. We are interested in evaluating the technical merit of the proposed solution and not in how good the technical writing skills of the authors are.

The questions are as follows:

1. **What problem does the paper address?**  
This should ideally be included in the introduction and iterated upon throughout the paper.

2. **Why is this problem important?**  
Again, to be found in the introduction and potentially elaborated in a section on background.
3. **How is it done today, and what are the limits of current practice?**  
There should be a specially dedicated section on literature or state of the art. If there is none the paper is not very well-written. Here you can use bullet points to summarize shortcomings of existing approaches.
4. **What is the solution proposed by the paper?**  
This is effectively the contribution of the paper which should be clearly stated in the introduction. There are several related questions to the proposed solution.
  - 4.1. *How is the contribution novel?*
  - 4.2. *How will the contribution make a difference? For whom?*
  - 4.3. *Does the solution deliver on what was promised in the introduction?*
  - 4.4. *Why would the proposed solution be successful?*
5. **How was the proposed solution evaluated? Are the evaluations convincing?**  
Those are the criteria to evaluate for success. After reading the evaluation section, you should be convinced that the authors thought of the key performance factors and tested them. The evaluations should be clear and their purpose well-stated.
6. **What are the risks?**  
Those are potential challenges in realizing the solution in real live. You can also list here shortcomings of the proposed solution.

## HOW TO WRITE A REPORT

In writing the report try to be succinct in answering the guiding questions and avoid using jargon. Be careful with selecting your wording and prefer simple short sentences to long heavy constructs. It is perfectly fine to start by writing several bullet points which then unroll into a full body text.

Avoid copy pasting from the paper, even if it is tempting. Try to re-word those important paragraphs which answer a question. This way you will learn more of how to use language and keep the essence of the text.

The reports of all papers on a topic form a *chapter*. Each chapter has an introduction and a conclusion. The introduction should introduce the topic of the chapter and point to why is the topic important in live data center deployments. Also, it should state if the papers consisting the chapter address the same/similar problem or are they dedicated to different challenges in the same field. The conclusion should compare the contributions of the papers, e.g., if they address the same problem, how do they differ in achieving the goal? Is one of them better based on results? If the contributions address different challenges in the field, comment on whether they are compatible and complementary. The conclusion should also describe how the contributions are important for the further progress in the field.