Evaluating data reduction techniques for supervised training

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Abstract

This skeleton demonstrates how to use the `infthesis` style for MSc dissertations in Artificial Intelligence, Cognitive Science, Computer Science, Data Science, and Informatics. It also emphasises the page limit, and that you must not deviate from the required style. The file `skeleton.tex` generates this document and can be used as a starting point for your thesis. The abstract should summarise your report and fit in the space on the first page.

Training ML/DL models has become a major computational cost in the enterprise given its time-consuming iterative nature and the increasing scale of datasets. A key technique to reduce the cost is to reduce the training datasets via various data reductions techniques (e.g., sampling [1,2]) so that we only train models with a controlled much smaller dataset instead of the original one. However, data reduction inevitably reduces the accuracy of trained models. This project aims to systematically evaluate the impact of different data reductions on the relative accuracy of trained models, both analytically and empirically, and provide a general guideline for us to pick the right data reduction techniques for our learning tasks.

Acknowledgements

Any acknowledgements go here.

Table of Contents

Chapter 1

Introduction

The preliminary material of your report should contain:

- The title page.
- An abstract page.
- Optionally an acknowledgements page.
- The table of contents.

As in this example `skeleton.tex`, the above material should be included between:

```
\begin{preliminary}
    ...
\end{preliminary}
```

This style file uses roman numeral page numbers for the preliminary material.

The main content of the dissertation, starting with the first chapter, starts with page 1. ***The main content must not go beyond page 40.***

The report then contains a bibliography and any appendices, which may go beyond page 40. The appendices are only for any supporting material that's important to go on record. However, you cannot assume markers of dissertations will read them.

You may not change the dissertation format (e.g., reduce the font size, change the margins, or reduce the line spacing from the default 1.5 spacing). Over length or incorrectly-formatted dissertations will not be accepted and you would have to modify your dissertation and resubmit. You cannot assume we will check your submission before the final deadline and if it requires resubmission after the deadline to conform to the page and style requirements you will be subject to the usual late penalties based on your final submission time.

1.1 Using Sections

Divide your chapters into sub-parts as appropriate.

1.2 Citations

Citations (such as [1] or [2]) can be generated using `BibTeX`. For more advanced usage, the `natbib` package is recommended. You could also consider the newer `biblatex` system.

These examples use a numerical citation style. You may also use (Author, Date) format if you prefer.

Chapter 2

Your next chapter

A dissertation usually contains several chapters.

Chapter 3

Conclusions

Chapter 4

New file

I want to know what is it.

4.1 Final Reminder

The body of your dissertation, before the references and any appendices, *must* finish by page 40. The introduction, after preliminary material, should have started on page 1.

You may not change the dissertation format (e.g., reduce the font size, change the margins, or reduce the line spacing from the default 1.5 spacing). Over length or incorrectly-formatted dissertations will not be accepted and you would have to modify your dissertation and resubmit. You cannot assume we will check your submission before the final deadline and if it requires resubmission after the deadline to conform to the page and style requirements you will be subject to the usual late penalties based on your final submission time.

Bibliography

[1] Hiroki Arimura. Learning acyclic first-order Horn sentences from entailment. In *Proc. of the 8th Intl. Conf. on Algorithmic Learning Theory, ALT '97*, pages 432–445, 1997.

[2] Chen-Chung Chang and H. Jerome Keisler. *Model Theory*. North-Holland, third edition, 1990.