epcc

Title of Dissertation

Author's Name

Date

MSc in High Performance Computing (with Data Science)
The University of Edinburgh
Year

Abstract

This is the bit where you summarise what is in your thesis. A non-expert reader should be able to understand the area of your work, what the main challenges were and what contributions or insights you've achieved, and gauge whether this work is relevant to their interests,. Think of the abstract as a super-concentrated summary of your MSc project; advertise your work but try to avoid cliffhangers.

A good abstract fits to 1 to 2 paragraphs and takes around 200 words to get your point across. To give you an idea, this abstract is 97 words long.

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Acknowledgements

Here you can give credit to anyone who has enabled the progress of your MSc project, especially if this was *above and beyond* their role. Below is our acknowledgement of the people who contributed to creation of this template.

This template is a slightly modified version of the one developed by Prof. Charles Duncan for MSc students in the Dept. of Meteorology. His acknowledgement follows:

This template has been produced with help from many former students who have shown different ways of doing things. Please make suggestions for further improvements.

Chapter 1

Introduction

This document serves as a template for your final Dissertation report, with the main objective to show how the report is meant to be typeset and organised.

The following chapters touch also on expected content of the report and other elements of the assessed work, but you should consider these high-level suggestions rather than *'must do's*.

The MSc projects differ from each other, and so it is expected that there will be a variability also across the final reports. Remember that you should adjust the document and its structure to your work, not the other way round. If you have any doubts, you can always discuss the structure of your dissertation or the best way to present your work with your supervisor, or you can reach out to the course organisers for advice.

Chapter 2

Assessed Work

The final mark for the Dissertation course encapsulates a number of different elements, and these are generally assessed across all the different pieces of outputs you submit as well as based on the continuous work you put in during the course's duration. Your main focus should be on delivering your project objectives and demonstrating the ability to use the right tools and approaches.

The two main components of your mark are Project Performance, and Submitted Work. The Submitted Work covers all channels through which you deliver your project's final outputs — any working code, measurements and plots, together with their descriptions, commentaries and conclusions. The Submitted Work looks at technical merit as well as quality of communication and presentation across your repository, final report and presentation.

2.1 GitLab

The technical component of your work should be functional, well documented and reproducible. The GitLab repository you were given in the Project Preparation course is the ideal place to keep your code, as it supports version control, but also simplifies sharing your work with your supervisor.

The repository should be updated regularly to reflect your progress. It is important that (latest) at the submission time your repository is user-friendly especially for "random" audience — consider a general computer or data scientist building on your work: Would they understand what you have done? Would they be able to reproduce your results? Is your code and comments in a good shape to be reused or added to other projects?

Your use of the repository — frequency/regularity of updates, commits and messages, use of more advanced features such as branches and issues (where

appropriate) — will impact both you Project Performance and Submitted Work mark. Please, remember that we will mark the repository you were given during Project Preparation, and we will not be able to award any marks for repositories that you may be using elsewhere, or that are out of sync with the version held at University's GitLab (`https://git.ecdf.ed.ac.uk`).

2.2 Dissertation Report

Your final report summarises your main findings, methods you used as well as challenges you have encountered. You should reflect on the original plan you outlined in the Feasibility Study, and comment on any changes from it. It is quite common that the final project differs from the plan and it is no issue, but it is important to identify lessons that can be learned for the future.

The final report should be a self-sufficient document that walks the reader through the main field and the context of your project, through methods and techniques you used, to the main findings and conclusions. Note, however, that it is not necessary to repeat content you have already presented in the Background or Literature Review in your Feasibility Study, you can simply provide a high-level overview and refer to the previous document, or shift the focus of such chapters from the "width" of discussion to more focused and in-depth study of the most relevant concepts and previous works.

Lastly, remember to cite all sources, including sources of Figures you might want to use, or parts of code you may be using as building blocks for your final product.

Below is a list of chapters or topics typically covered by a final dissertation report, but remember that you should adjust this template to fit your project and the story you are telling, not vice-versa.

- Abstract
- Introduction and motivation
- Background, related work and wider context of your project
- Methodology, tools and techniques used
- Implementation
- Results and findings, analysis and interpretation
- Reflection on original objectives, lessons learned and conclusions
- Future work

A dissertation report doesn't have any fixed or required length. You should make sure that it is informative but does not drown readers in unnecessary details. Remember that you are submitting your code alongside the report, so you can highlight interesting parts of your technical work and point the readers directly to the code in the repository. Most projects can present the required content in approximately 30 pages[1], but it can be more or less. You are not marked on the report's length but on the quality of your results.

2.3 Final Presentation

The final bit of your submission is a live[2] presentation to the audience of other students and university's staff. The talk should summarise the most important findings and deliver them to the non-expert audience; this is a challenging task and a unique opportunity for you to practise discussing your work in a way that does not sacrifice technical complexity for clarity or simplicity of your delivery.

2.4 Project Performance

Additionally, your supervisor will also assess your performance through the duration of the project. Part of the Project Performance mark comes from your demonstrated ability to critically assess you own work as well as findings of other researchers, but also the creativity and invention you show when encountering issues or challenges. The other part of the mark is based on your project management skills, such as managing and organising your workload, checking your progress against the plan and risks outlined in your feasibility study, but also your communication with your supervisor (and possible other collaborators).

The Project Performance marks are not awarded based on your "average" behaviour through the dissertation phase but rather on the skills you have learned during this period. For example it is quite common that, initially, you may need your supervisor's support to keep the project progressing at a good pace, but you should demonstrate that you you have developed necessary strategies and mechanisms to pace your project independently if you want to achieve high performance marks.

[1]The suggested length does not include Tables of Content, Figures etc., and Appendices and Bibliography are excluded from the page count as well.

[2]The presentation may be delivered online/remotely for online programmes

Chapter 3

LaTeX features

This template is prepared using LaTeXdocument preparation system, which is particularly well suited for academic and research writing. In particular, there is a good support for creating labelled and captioned elements in your report, such as tables, figures and plots, as well as very good support for referencing other literature and cross-referencing to other labelled elements, to reduce any ambiguity in the text. Additionally, you can use the math-mode to typeset even complex mathematical equations in a natural and easy-to-read way.

Remember that it is your responsibility and the markers will take into account the quality and legibility of your report, so make sure that you attach appropriate descriptions to all your tables and figures, that your references and cross-references point to the correct objects, that all content is legible.

Commands like `\label{...}`, `\caption{}`, `\cite{}` and `\ref{}` are very useful and you have likely encountered them already in the Feasibility Study. You are welcome to have a look at how various things are achieved in this template or search for additional information online. You are also free to use other editors and systems, but it remains your responsibility to ensure the quality of your report.

You are submitting your report electronically, so you should invest some effort into improving the readers' experience and, where possible, various resources should be made accessible through "click". This applies both to the references and bibliography as well as external resources, such as specific files in your repository or homepages of packages or tools you used.

Here is an example of a reference [1], and here is another one [2] for good measure. Do pay due attention to how the items are listed in the Bibliography, the included example here is very minimal. You may find the hyperref package with the `\href` command useful, too.

Appendix A

Stuff which is too detailed

Appendices should contain all the material which is considered too detailed to be included in the main body but which is, nevertheless, important enough to be included in the thesis.

Appendix B

Stuff which no-one will read

Some people include in their thesis a lot of detail, particularly computer code, which no-one will ever read. You should be careful that anything like this you include should contain some element of uniqueness which justifies its inclusion.

Bibliography

[1] L. Lamport. *Latex User's Guide and Reference Manual.* Addison Wesley, 1986, pp242.

[2] F. Bloggs. *Latex Users do it in Environments.* Int. Journal of Silly Findings, 1993, pp 23-29.