

The Essay Title is Usually a Succinct Description of Your Topic

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Abstract

A short description of your essay goes here. This should be between 100 and 300 words long. Around half a page saying what your problem or research question is, and how it is approached in this essay, and in some cases a conclusion.

An abstract is more than a short summary of your completed research. It will tell the readers why they should be interested in your essay. If you do this well, it will make the readers want to read more. If you do this poorly, many people will stop reading at this point.

Typically, a good abstract will have a structure like this:

1. Motivation
2. Problem statement
3. Approach
4. Results
5. Conclusion

You may wish to put the problem statement ahead of the motivation, depending on your topic, and it may not make sense to have a results section if your essay is a review of a particular field. You should be flexible when deciding how to structure your abstract. Of course, this is easiest if you do not start writing the abstract until you have completed a draft of the entire essay.

The writing style used in an abstract is different from the style used in the rest of your essay. You should be concise, clear, and direct. Avoid the use of extra words and get straight to the point. Try to fill your sentences with useful adjectives that convey as much relevant meaning as possible. The reader should understand why your essay is important, what makes it interesting, what your main results are, and (if applicable) what follows from your work. You may also wish to use key terms and phrases from your field because researchers who are looking for something relevant to their own work are more likely to search for these terms in abstracts.

Here is an example of a good abstract:

The diabetes epidemic among children in the United States constitutes one of the most serious health problems in the region. What makes the study and control of the disease even more complex is its interaction with the parallel obesity epidemic. This research provides a detailed review of a deterministic compartmental model for obesity and diabetes to understand better the dynamics of the twin epidemics in a typical American suburb. This model is built on traditional population models but also includes effects of diet and exercise. The population is studied using a differential equation that comes naturally from the model assumptions, using the method of linearization near the disease-free equilibrium and solved numerically with Python. Our results demonstrate that the prevalence of diabetes among youth is expected to be significantly higher in a suburb than in the countryside or in an urban centre, mainly as a result of reduced exercise.

Notice how the abstract begins with the motivation: the first sentence tells you exactly what the key issue is and the second sentence tells you why studying it is difficult. Next, the abstract clearly states the problem in a concise and direct sentence. There are no extra or ambiguous words but there is still enough detail to understand the key elements of the problem being studied. The following two sentences describe the approach used, again with simple and direct language. The final sentence is a statement of the overall conclusion, telling you what the main result is. After reading this abstract, one has a sense of what the essay is about, why it is interesting, what techniques were used, and what the chief outcome or result is.

Here is a poorly written abstract:

This essay examines the current developments of modelling crime rates using statistical methods. Regression models for time series data of crime instances are discussed in this essay. The statistical methods discussed are Empirical Orthogonal Functions (EOFs), Canonical Correlation Analysis (CCA) and Multivariate Regression (MVR). We examined the various statistical methods for modelling correlations by taking into account the variability of the data due to temporal and spatial proximity. Some of these methods include Maximum Likelihood Estimation (MLE), Generalized Method of Moments (GMM), and the use of the M-estimator. We considered both the Bayesian and the Frequentist approach to this problem using data collected from Essex, UK. The data, describing crime in a low income region near London, England, was collected over five years from 1985–1990.

In this abstract, there is not much detail in each sentence and it is hard to understand exactly what was done in the essay. It is true that we get an idea of the techniques used – but there is too much listing of methods and not enough of an explanation of the research problem. This abstract is boring and not very well structured and it gives the impression that the essay will not make for interesting reading. Also, notice that because there is no motivation and no conclusion in this abstract, it is hard to get an overall sense of the essay and what its key message is.

Declaration

I, the undersigned, hereby declare that the work contained in this essay is my original work, and that any work done by others or by myself previously has been acknowledged and referenced accordingly.

Firstname Middlename Lastname, 17 May 2012

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1. Introduction

1.1 Problem Statement

This is usually an introduction and problem statement. It can be called something more exciting and descriptive than “Introduction”, perhaps?

When you quote use the correct symbols as above for quotation marks!

This is where your essay starts. Please remember that it must be 25 pages from here on. This is the first paragraph.

The is the second paragraph. Always move to the next paragraph by leaving an open line and never using the double backslash (\\) command. Those are reserved for arrays, tables, and so on.

Paragraphs are separated by blank lines in the \LaTeX code, and we set the line spacing, paragraph indentation, and paragraph spacing in the preamble for you, according to AIMS house style.

1.2 Moving On

Let’s look at bandwidth as in Fig. 1.1 bit. Just to demonstrate a figure!

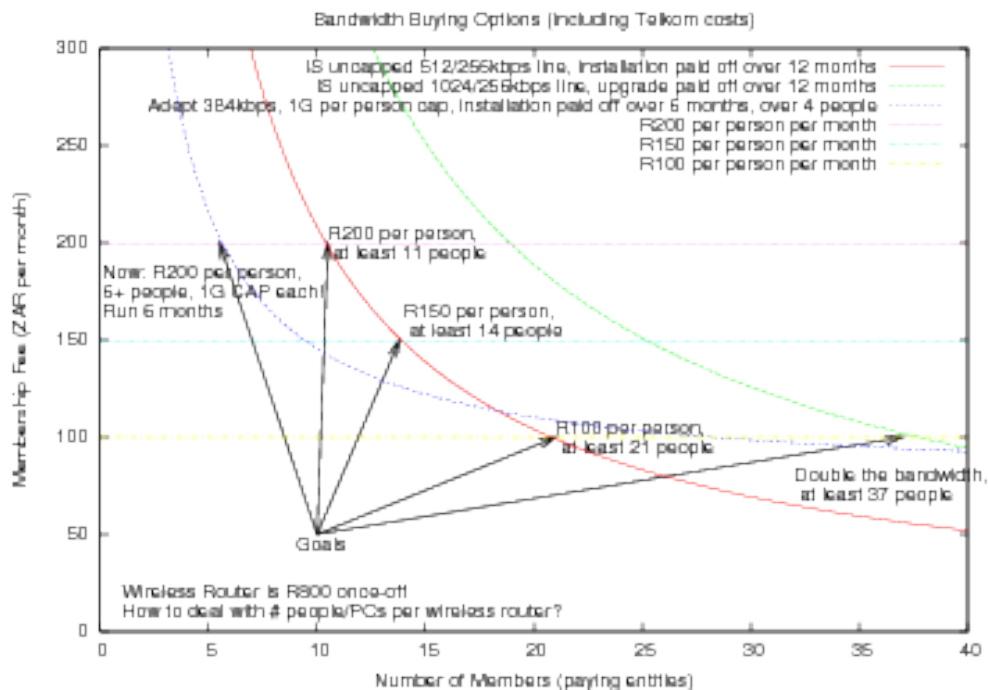


Figure 1.1: Planning community bandwidth sharing costs. Note caption capitalization.

1.3 Bleah

See Fig. 1.1 to understand how figures work. It's OK to have figures on another page if you reference them correctly! if you use someone else's pictures, acknowledge them. And remember to check on the copyright. You can include tables in the same way but with the `\begin{tabular}` and `\end{tabular}` commands.

Remember how to include code with `verbatim` and to fix the tabs in python in a `verbatim` environment? It is by far best to have an `include` command for your code, not to re-edit it all the time!

```
# This program prints hello

import Scipy as S

if __name__ == "__main__":
    print "hello"
```

1.4 Consistency

Consistency is by far the most important thing to remember. Just after honesty and citing the work of others correctly as in [AST92, Bea06].

2. The Second Chapter

Here you give all the background. Remember to use Search, Find and Replace. Let the machines do what they are good at.

[illegible]

2.1 This is a Section on How To Use References

[illegible]

When you get stuck, don't panic. Always be polite. Remember we have a structure for you to see tutors, supervisors, Frances, Jan, and even Barry at agreed times.

1. a list
2. item two

2.2 This is Another Section

Text text text text text text text text text text text text text text text text text
text text text text text text text As seen in section 2.1 on page 3 you can make references to sections,
chapters, or subsections. Just add the \label command underneath the section heading. text text text
text text text text text text text text text text text

Use sensible equation numbering. The L^AT_EX defaults are usually good for almost all cases.

[illegible]

2.2.1 Theorem (My Theorem). *This is my theorem.*

Proof. And it has no proof. But if it did it would look like this. Cite your references!

[illegible]

[illegible]

3. Third Chapter

Theorems before the chapter's first section will be dot-zero, and their numbering is completely wrong. You can avoid this by simply always starting a chapter with a section. Ta Da! It will probably help you structure it anyway.

3.0.3 Theorem (My Theorem2). *This is my theorem2.*

Proof. And it has no proof2.

Explore and evaluate your model.

[illegible]

3.1 This is a Section

[illegible]

3.1.1 Theorem (My Theorem2). *This is my theorem2.*

Proof. And it has no proof2.

text text text text text text text text text text text text text text text text text text text
text text text text text text text text text text.

[illegible][illegible][illegible]

3.1.5 Lemma. My lemma

- an list not numbered
- another bullet

3.1.6 Lemma. My other lemma.

3.2 This is a Section

Text text text text text text text text text text text text text text text text

$$x = y + y \tag{3.2.1}$$

$$= 2y \tag{3.2.2}$$

see equations 3.2.1 and 3.2.2 text text text text text text text text text text text text text text text text. Now since you remember all those equation numbering methods in the Short Math Guide, you can easily do all kinds of funky numbering, split numbering, aligned numbering, and combined numbering. Just don't lose your head.

3.3 More

3.3.1 Conjecture. A conjecture

And an example too

3.3.2 Example. As if this were an example.

4. The Second Squared Chapter

The average essay will be five chapters, but I didn't plan my work properly and then ran out of time. I spent too much time positioning my figures and worrying about my preferred typographic style, rather than just using what was provided. I wasted days bolding section headings and using double slash line endings, and had to remove them all again. It took a long time to fix manually numbered lists to use the \LaTeX environments because I didn't use them from the start or understand how to search and replace easily with texmaker.

Everyone has to take some shortcuts at some point to meet deadlines. Time did not allow to test model B as well. So I'll skip right ahead and put that under my Future Work section. Conclusion. Future possibilities. Meaning. Usefulness.

[illegible]

4.1 This is a Section

[illegible]

4.2 This Is a section

[illegible]

Some students may have 3, 5 or 6 chapters. This is just an example. More importantly, do you have ± 25 pages? Plan and condense. To submit 25 pages you might write much more and then fix the best ones and cut the ideas. Mostly this essay is about clearly presenting the work. Luck has nothing to do with it. It's pure talent and newly acquired skills. Perhaps some persistence. What was that about perspiration? Some team work helps, so every now and then read one another's essays.

Acknowledgements

Thanks Ma, Thanks Pa. One paragraph in normal language is the most respectful. Different universities may place this near the front, near the end, etc. This is where ours go, at the end. It is optional. It should not be more than half a page.

Acknowledgements are out of place in a science paper such as in a journal (but may be more suited to longer projects like MSc or PhD). The AIMS essay is short, but is in preparation for an MSc, and exceptional, so you may have an acknowledgement and/or dedication. DO not change the heading. It should be less than half a page long, normal font size, not in the table of contents, no centralised text, no ALL CAPS, no bold, and no extra dedications, and don't move it after the references. Do not use too much bold, any figures, or sign at the bottom. If you have this, then it should only be a paragraph or two.

References

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- [Web] Webots, <http://www.cyberbotics.com>, Commercial Mobile Robot Simulation Software.