

CREATING A THESIS USING LATEX

by

William Smith

A THESIS

Submitted to the Faculty of the Stevens Institute of Technology
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE - MATHEMATICS

William Smith, Candidate

ADVISORY COMMITTEE

Jane Advisoro, Advisor	Date
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Robert Johnson, Reader	Date
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Castle Point on Hudson
Hoboken, NJ 07030
2010

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ABSTRACT

An abstract of 350 words or less, not including the title, is required for all dissertations, theses and reports. One extra, loose copy of your abstract is required for the library. In addition, an abstract is required as part of the PhD. If your abstract is longer than 350 words, UMI (the publisher of dissertations) will edit your abstract to 350 words. It is in your best interest to do the editing yourself to limit it to the 350 words, rather than leave the editing up to someone who does not know your research as you do.

The abstract should be formatted as it is shown here. The requirements are as follows: Title of document on top; Abstract of document (350 words or fewer); Author's name on bottom; Advisor's name on bottom; Date on bottom; Department at bottom; Degree on bottom; The abstract should be the first page where page numbers appear, starting with page number iii (or page ii if a copyright page is not included). All pages after the abstract up to the first page of the body of the document continue with lower case Roman numerals (iii, iv, v, etc.)

Note: 1 extra, loose copy of your abstract is required for the Library. In addition, an abstract is required as part of the Ph.D defense announcement to be submitted to the Office of the Registrar at least 1 weeks prior to the scheduled date of defense.

Author: William Smith

Advisor: Jane Advisoro

Date: May 4, 2010

Department: Computer Science

Degree: Master of Science - Mathematics

Dedication

This thesis is dedicated to all Stevens students. Dedication is optional.

Acknowledgments

The acknowledgements section recognizes anyone that provided significant help in producing your thesis or dissertation. Frequently acknowledged people are your advisor, colleagues, and family. Sometimes companies or outside groups have contributed to the research done for a dissertation, and they can be thanked here as well. The Acknowledgements page is optional.

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Chapter 1

Introduction

This sample dissertation is provided for help is viewing the layout of a dissertation. The content is not at all anything that one would put in a dissertation. To view previous dissertations submitted by Stevens students, please go to the online resources section of the library website, and go to the database Stevens Dissertations Online.

1.1 The Problem Statement

Page numbers in a dissertation must be formatted as they are in this document.

Arabic numerals (1, 2, 3...) must appear in the upper right-hand corner of every page starting with the first page of the body of the paper (usually the introduction or the first page of the first chapter). If it is necessary to print some pages in landscape format or if oversize pages or materials are necessary, adjust formatting so that the page number on these pages will appear in the upper right-hand corner of the page when the document is bound. Page numbers appear on every page of the body of the document, including the bibliography and the vita.

Lower case Roman numerals (i, ii, iii...) must be used for the pages appearing before the body of the paper (called the front matter). The title page is considered page i, but there is no page number printed on the title page. The copyright page (if it is included) is considered page ii, but there is no page number printed on the copyright page. The remainder of the front matter (abstract, table of contents, etc.) is numbered with lowercase Roman numerals, starting with page iii (if no copyright page is used, the first page of the front matter is printed with page

number ii).

There is no required citation style for references or a bibliography in a dissertation. If your advisor or department has a required or suggested citation style, that should be what is used in the dissertation. Frequently used citation styles are MLA[2], APA style[1], Chicago, ASM and AIP.

1.2 Problem Scope

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There is no required citation style for references or a bibliography in a dissertation [3]. If your advisor or department has a required or suggested citation style,

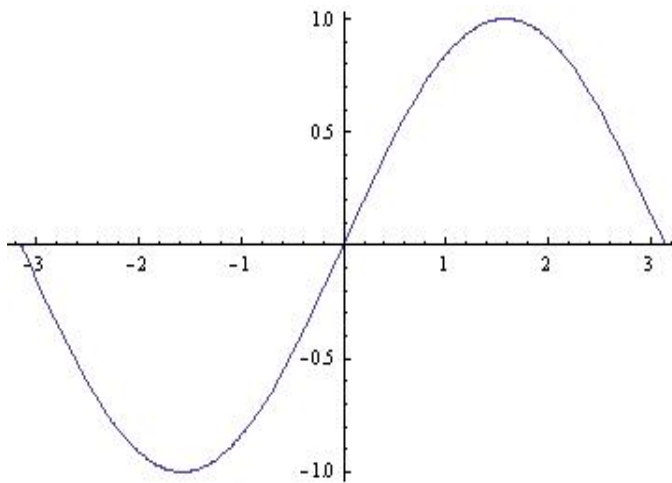


Figure 1.1: Enjoyment and fun

that should be what is used in the dissertation. Frequently used citation styles are MLA [2], APA style [1], Chicago, ASM and AIP.

Here, if the dimensions of A , B , and C are $n \times n$, $n \times m$ and $l \times n$ respectively; then n -vector x denotes the system state; m -vector u denotes system control; and the l -vector y denotes the system output. If we allow x to go to infinity, you see that $\sum_{i=1}^{\infty} x_i$. As follows, $\sqrt{x+y}$ proves the theorem to be correct.

1.3 Research Approach

Good research is essential in producing a dissertation or thesis. The reference librarians at Stevens are always available to help you navigate the world of online research. Feel free to make an appointment, or watch for one of the workshops given about doing your research for your dissertation.

Vestibulum ut urna eu turpis accumsan hendrerit. Mauris in mi sed eros auctor blandit. Nullam sit amet mauris vel eros aliquam pretium. Cras fermentum tortor. Sed egestas vulputate diam. Aenean sem dui, tincidunt a, ullamcorper eget, pharetra ac, tortor. In at sem vel elit bibendum convallis. Aenean ut enim vel leo

malesuada dapibus. Etiam odio dolor, sollicitudin a, nonummy nec, tristique et, augue. Morbi ipsum. Aliquam venenatis. Proin orci. Duis sed quam eget turpis interdum feugiat.

1.3.1 Hypothesis

Glossy prints of good reproducible quality, either black or white or color may be used. Photographs can be printed on 8 1/2" x 11" glossy finish paper, however, margin and page number requirements as stated above still apply for pages containing photographs. When attaching photographs to paper, double-sided tape may be used which causes the least amount of damage to the original paper.

The format of footnotes and the bibliography are to be prepared in accordance with standard practice in the field in which one is working. Documentation formatting style must be discussed with and accepted by the advisor. See further information on Reference Styles below.

The suggested typeface for dissertations is 10 to 12 point Arial. Other suggested fonts are Times New Roman and Helvetica. Script and italic fonts should not be used except as needed in the body of the paper. Consistency should be maintained throughout the paper, using the same font for all text, diagrams, etc. on all pages.

Electronic material, such as CDs and multimedia can accompany the dissertation. Each copy should be accompanied with a labeled CD. When bound, these are placed in an envelope in the back of the dissertation. Oversized materials (pages greater than 8" x 11") can be included in the paper if necessary. Oversized pages should be folded so that 1" on the left hand binding edge remains, allowing the page to be opened once the paper is bound.

The reference style used for formatting the paper must be confirmed with your department and advisor. Frequently used styles are the APA (American Psychological Association), MLA (Modern Language Association) and AMA (American Medical Association) styles. Style guides and manuals are available for each style. Page headers are not to be used.

Chapter 2

Current Practice

Three copies of the dissertation (1 original and 2 copies, either xerographic, photocopied, offset or letter quality printer) are to be supplied to the Library. In addition, an abstract independent of the document is to be supplied to the Library. The announcement for Ph.D. dissertation defense is to be given to The Office of the Registrar at least 1 weeks prior to the defense. A sample defense announcement can be found in sample pages.

You must hand in your dissertation in person to Doris Oliver. If Doris is not available, Nydia Cruz can also accept dissertations. Dissertations cannot be mailed to the Library and cannot be handed in by another person.

Doris Oliver is available to accept dissertations from 9:30am - 1:00pm and 2:00pm - 4:00 pm, M-F. Appointments are not necessary but are highly recommended.

Publication Agreement and Survey Forms

The UMI Publication Agreement Form and a Survey of Earned Doctorates Form are submitted with the dissertation. The forms are available from Doris Oliver and online. Both forms must be completed and returned to Doris Oliver with the final dissertation. The UMI Publication Agreement Form includes the application form. This should be read, filled out and returned to Doris Oliver. The Survey of Earned Doctorates form is available online in two documents: the Survey of Earned Doctorates brochure and the Survey of Earned Doctorates form online. UMI also

provides a brochure on privacy as it relates to dissertations.

Use of Previously Published work in your dissertation

If you are including previously published material as part of your dissertation, either as an appendix or as part of the body of your paper, you must obtain written permission from the publisher to have the work included as part of your paper. Even if you are the author of the published material, you still must get permission from the publisher.

Please view the dissertation specifications on the library website for information about UMI/Proquest's guide to copyright and copyright infringement.

UMI/Proquest also includes information written by Kenneth Crews, a professor at Indiana University on the issue of copyright. His work covers how to request permission from publishers, and sample permission letters.

It is the responsibility of the student to ensure that all portions of their dissertation adhere to copyright law.

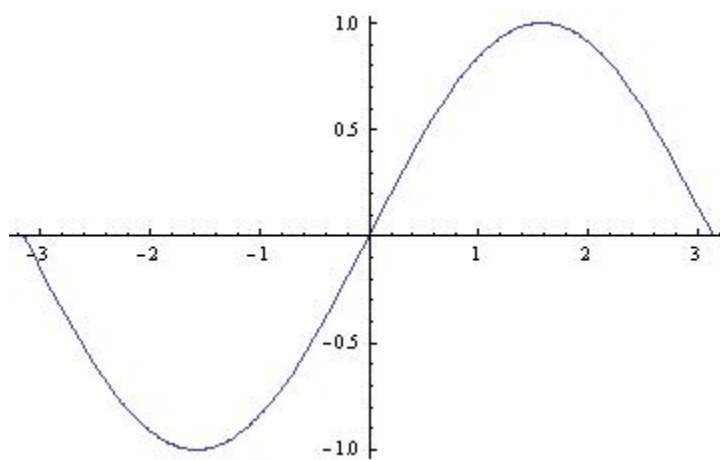


Figure 2.1: Transverse momentum distributions

Chapter 3

Case Study

All information about formatting a dissertation can be found on the library website at www.stevens.edu/library/services/phd.html. Formatting information gets updated occasionally, so it is always good to check the requirements before submitting your dissertation.

It is not required, but is strongly suggested that you make an appointment at the library to have the format of your dissertation reviewed before the final submission. Dissertations can be rejected if they do not adhere to the formatting requirements.

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Theoretical Dissertation Timeline		
Task	Time to Finish	Notes
Problem statement	10 hours	Initially very upbeat.
Research	3 days	Literature search to very previous studies.
Reformulation	4 hours	Presented and accepted by advisor
Research	20 days	Literature search to very previous studies.
Experiments	14 days	Do some experiments and get results.
Format	1 day	Understand format guidelines for paper.
Write	years	Write the paper.
Revise	not too long	Proof read, etc.
Format	1-3 days	Verify correct report format is used.
See Library	1 hour	Meet with Doris to verify formatting.
Defend	1 day	Defend your research.
Revise	0 hours	It was perfect the first time.
Submit	1 day	Submit final dissertation to the library.

Table 3.1: Table of Tasks

website at www.stevens.edu/library/services/phd.html. Formatting information gets updated occasionally, so it is always good to check the requirements before submitting your dissertation. It is not required, but is strongly suggested that you make an appointment at the library to have the format of your dissertation reviewed before the final submission. Dissertations can be rejected if they do not adhere to the formatting requirements. All information about formatting a dissertation can be found on the library website at www.stevens.edu/library/services/phd.html. Formatting information gets updated occasionally, so it is always good to check the requirements before submitting your dissertation.

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3.1 Further Analysis

Paper The original copy of the dissertation must be produced on good quality 8 1/2" x 11", 20 pound acid-free white paper. The paper should not be stapled, punched, bound, colored or printed on letterhead.

The two additional copies of the dissertation can be photocopied or produced on copier or laser paper.

Ink Black ink only is used to print your report. If a graph or photograph contains color, that is fine.

Latex is used to help in the printing of formulas. The following formula would be difficult to reproduce in Microsoft Word:

$$\frac{d}{dx} \left(\int_0^x f(u) du \right) = f(x).$$

This Report was produced by LaTeX¹ written by Barbara Arnett. Barbara is not an expert with LaTeX, and anyone using LaTeX does not need to use this template. It is simply provided to help with formatting, specifically with page numbers and images.

Graphics

¹LaTeX is a fun typesetting program.

Graph paper may be used for original drawings, charts or illustrations. Original drawings may be in color or black and white, however, color is allowed for illustrations only; all text must appear in black. The original thesis must contain the original graphic or illustration, not a photocopy of the drawing, graphic or illustration.

If formulas and diagrams contain subscript and superscript characters, ensure they are large enough to read when printed in the final paper.

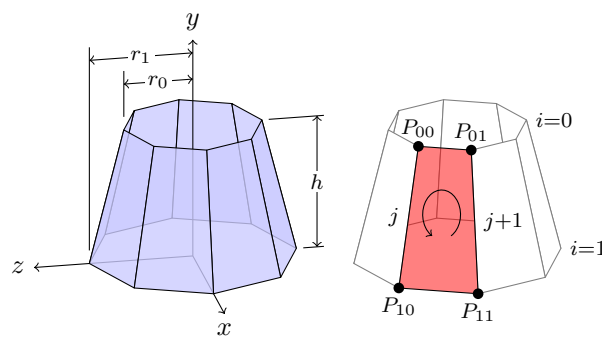


Figure 3.1: 3D Cone

Photographs Glossy prints of good reproducible quality, either black or white or color may be used. Photographs can be printed on 8 1/2" x 11" glossy finish paper, however, margin and page number requirements as stated above still apply for pages containing photographs. When attaching photographs to paper, double-sided tape may be used which causes the least amount of damage to the original paper.

Graphics that are oriented in a landscape position must be done in a manner that retains the page numbering in the upper right hand corner, as shown in figure 3.2. This can be difficult in Microsoft Word, but it is possible. To do this in Microsoft Word, create a new section, change the page to landscape, and place the page number in a text box. The text box then is rotated on the landscape page. Then

begin a new section and resume portrait orientation.

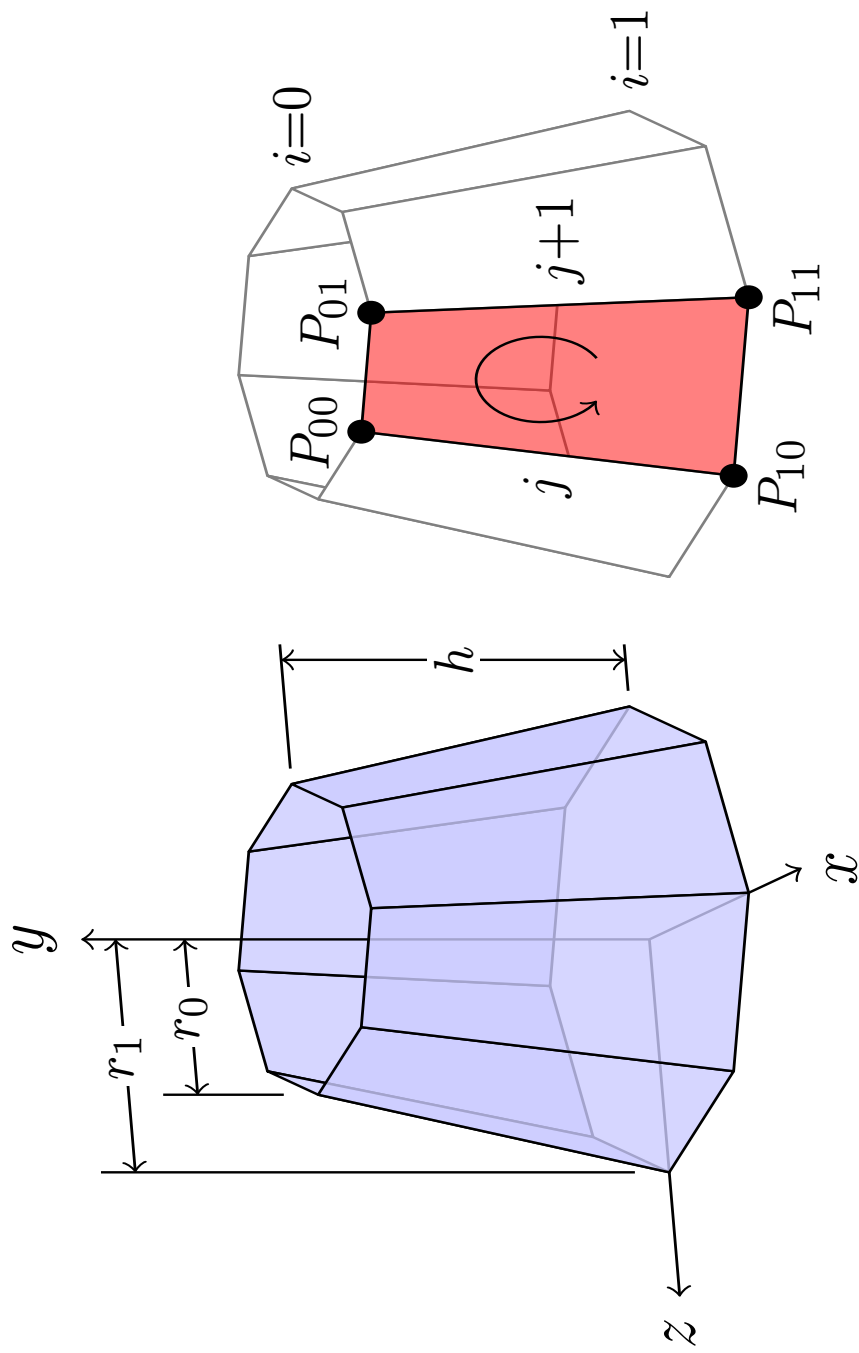


Figure 3.2: This is an example of a landscape image within a page. Note that the page number remains in the upper right hand corner of the page when the page is in the portrait position.

Chapter 4

Recommendations

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Electronic material, such as CDs and multimedia can accompany the dissertation. Each copy should be accompanied with a labeled CD. When bound, these are placed in an envelope in the back of the dissertation. Oversized materials (pages greater than 8 1/2" x 11") can be included in the paper if necessary. Oversized pages should be folded so that 1" on the left hand binding edge remains, allowing the page to be opened once the paper is bound.

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chological Association), MLA (Modern Language Association) and AMA (American Medical Association) styles. Style guides and manuals are available for each style. Page headers are not to be used.

4.1 The Focus Group

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Another Timeline	
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Write	Write the paper.
Revise	Proof read, etc.
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Revise	It was perfect the first time.
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Table 4.1: Timeline 2

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Chapter 5

Summary and Conclusion

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Appendix A

Appendices at the end of a dissertation are optional, and depend on the content of the dissertation. There can be one or more appendices, however they should retain the page numbering requirements for dissertations. Any concerns about the formatting of an appendix should be brought to Doris Oliver, who can direct you how to format your appendix if you have questions.

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See Library	1 hour	Meet with Doris to verify formatting.
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Bibliography

- [1] American Psychological Association. *Publication manual of the American Psychological Association*. American Psychological Association, 5th ed. edition, 2001.
- [2] Joseph Gibaldi. *MLA handbook for writers of research papers*.
- [3] Harold Rabinowitz and Suzanne Vogel. *The Manual of Scientific Style*. 2009.