

University of Waterloo E-Thesis Template for L^AT_EX

by

Pat Neugraad

A thesis
presented to the University of Waterloo
in fulfillment of the
thesis requirement for the degree of
Doctor of Philosophy
in
Zoology

Waterloo, Ontario, Canada, 2017

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Examining Committee Membership

The following served on the Examining Committee for this thesis. The decision of the Examining Committee is by majority vote.

External Examiner: Bruce Bruce
 Professor, Dept. of Philosophy of Zoology, University of Wallamaloo

Supervisor(s): Doris Johnson
 Professor, Dept. of Zoology, University of Waterloo
 Andrea Anaconda
 Professor Emeritus, Dept. of Zoology, University of Waterloo

Internal Member: Pamela Python
 Professor, Dept. of Zoology, University of Waterloo

Internal-External Member: Deepa Thotta
 Professor, Dept. of Philosophy, University of Waterloo

Other Member(s): Leeping Fang
 Professor, Dept. of Fine Art, University of Waterloo

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

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Abstract

This is the abstract.

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Acknowledgements

I would like to thank all the little people who made this thesis possible.

Dedication

This is dedicated to the one I love.

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Glossary

computer A programmable machine that receives input data, stores and manipulates the data, and provides formatted output [1](#)

List of Symbols

- v** Random vector: a location in n-dimensional Cartesian space, where each dimensional component is determined by a random process [1](#)

Chapter 1

Introduction

In the beginning, there was π :

$$e^{\pi i} + 1 = 0 \tag{1.1}$$

A [computer](#) could compute π all day long. In fact, subsets of digits of π 's decimal approximation would make a good source for psuedo-random vectors, [v](#) .

1.1 Problem Statement

Given a black box system, identify the accepted input grammar ?.

1.2 Previous Work

Chapter 2

Observations

This would be a good place for some figures and tables.

Some notes on figures and photographs...

- A well-prepared PDF should be
 1. Of reasonable size, *i.e.* photos cropped and compressed.
 2. Scalable, to allow enlargement of text and drawings.
- Photos must be bit maps, and so are not scaleable by definition. TIFF and BMP are uncompressed formats, while JPEG is compressed. Most photos can be compressed without losing their illustrative value.
- Drawings that you make should be scalable vector graphics, *not* bit maps. Some scalable vector file formats are: EPS, SVG, PNG, WMF. These can all be converted into PNG or PDF, that pdf_latex recognizes. Your drawing package probably can export to one of these formats directly. Otherwise, a common procedure is to print-to-file through a Postscript printer driver to create a PS file, then convert that to EPS (encapsulated PS, which has a bounding box to describe its exact size rather than a whole page). Programs such as GSView (a Ghostscript GUI) can create both EPS and PDF from PS files. Appendix [A](#) shows how to generate properly sized Matlab plots and save them as PDF.
- It's important to crop your photos and draw your figures to the size that you want to appear in your thesis. Scaling photos with the `includegraphics` command will cause

loss of resolution. And scaling down drawings may cause any text annotations to become too small.

References

- [1] Michel Goossens, Frank Mittelbach, and Alexander Samarin. *The L^AT_EX Companion*. Addison-Wesley, Reading, Massachusetts, 1994.
- [2] Donald Knuth. *The T_EXbook*. Addison-Wesley, Reading, Massachusetts, 1986.
- [3] Leslie Lamport. *L^AT_EX — A Document Preparation System*. Addison-Wesley, Reading, Massachusetts, second edition, 1994.

APPENDICES

Appendix A

Matlab Code for Making a PDF Plot

A.1 Using the GUI

Properties of Matab plots can be adjusted from the plot window via a graphical interface. Under the Desktop menu in the Figure window, select the Property Editor. You may also want to check the Plot Browser and Figure Palette for more tools. To adjust properties of the axes, look under the Edit menu and select Axes Properties.

To set the figure size and to save as PDF or other file formats, click the Export Setup button in the figure Property Editor.

A.2 From the Command Line

All figure properties can also be manipulated from the command line. Here's an example:

```
x=[0:0.1:pi];
hold on % Plot multiple traces on one figure
plot(x,sin(x))
plot(x,cos(x),'--r')
plot(x,tan(x),'.-g')
title('Some Trig Functions Over 0 to \pi') % Note LaTeX markup!
legend('{\it sin}(x)', '{\it cos}(x)', '{\it tan}(x)')
hold off
```

```
set(gca,'Ylim',[-3 3]) % Adjust Y limits of "current axes"
set(gcf,'Units','inches') % Set figure size units of "current figure"
set(gcf,'Position',[0,0,6,4]) % Set figure width (6 in.) and height (4 in.)
cd n:\thesis\plots % Select where to save
print -dpdf plot.pdf % Save as PDF
```