To the Graduate Council:

I am submitting herewith a dissertation written by Student A. Name entitled "Analysis on some data using some technique." I have examined the final paper copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Computer Science.

Jane P. Doe, Major Professor

We have read this dissertation
and recommend its acceptance:

Member A. Davis

Member B. Miller

Member C. Smith

Accepted for the Council:

Dixie L. Thompson
Vice Provost and Dean of the Graduate School

To the Graduate Council:

I am submitting herewith a dissertation written by Student A. Name entitled "Analysis on some data using some technique." I have examined the final paper copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Computer Science.

Jane P. Doe
Major Professor

We have read this dissertation
and recommend its acceptance:

Member A. Davis

Member B. Miller

Member C. Smith

Accepted for the Council:

Dixie L. Thompson
Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

ANALYSIS ON SOME DATA USING SOME TECHNIQUE

A Dissertation Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Student A. Name
December 2017

DEDICATION

If the student wishes to dedicate the thesis/dissertation, the dedication statement is included on this page. If appropriate, the student may include a short quote or other text here. The student may choose to omit the heading “Dedication” on this page if the intent of the dedication itself is clear. This page is optional.

ACKNOWLEDGMENTS

The acknowledgments page is used to thank those who have helped in the process of obtaining the graduate degree. Permission to quote copyrighted material is listed here, as well as acknowledgment for grants and special funding. If students must include a disclaimer, stating, for example, that the views expressed in the thesis or dissertation are not necessarily the views of the agency or institution that funded or supported the research, they should do so on this page. This page is optional.

ABSTRACT

The content of the abstract is determined by the student and committee, the following information is appropriate: (1) a short statement concerning the area of investigation, (2) a brief discussion of methods and procedures used in gathering the data, (3) a condensed summary of the findings, and/or (4) conclusions reached in the study.

The abstract will be used by the University of Tennessee Libraries in cataloguing the thesis or dissertation. Therefore, the abstract must NOT exceed 350 words in length. Furthermore, if the abstract contains any special characters (those characters not found on typical English-language keyboards) the student must also write out the term or concept in plain English in square brackets immediately following the special character. For example: π [pi]. If you have questions about what qualifies as a special character, please check with the thesis/dissertation consultant.

PREFACE

A personal statement about the purpose and scope of the thesis/dissertation could be included in the preface. The tone of the preface, however, must be academic and appropriate to scholarly work. This page is optional.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

AAA	American Anthropology Association
APA	American Psychological Association
IEEE	Institute of Electrical and Electronics Engineers
AI	Artificial intelligence
CNN	Convolutional neural networks
SaaS	Software as a service
R&D	Research and development
UTK	University of Tennessee, Knoxville

LIST OF SYMBOLS

ϕ_p	Horizontal stress
β	Angle between the normal and horizontal planes
π	Pi
i	Imaginary unit
P_2	Universal parabolic constant
t_i	Time at step i
$\Delta\mu$	Change in energy

CHAPTER 1
INTRODUCTION

This is a guide to an unofficial thesis/dissertation template for the University of Tennessee. It is based on the 2017 *Guide to the Preparation of Theses and Dissertations* but can be easily altered as the guidelines are changed. This template requires a basic knowledge of LaTeX and should cover the basic requirements in terms of required packages and functionality for the University of Tennessee. This is a note with custom color. This is a note with default color. Figures should have at least 1.5in between text.

Not sure when website specifications incomprehensibilities were updated.

This is a margin note used during revisions, not the final draft.

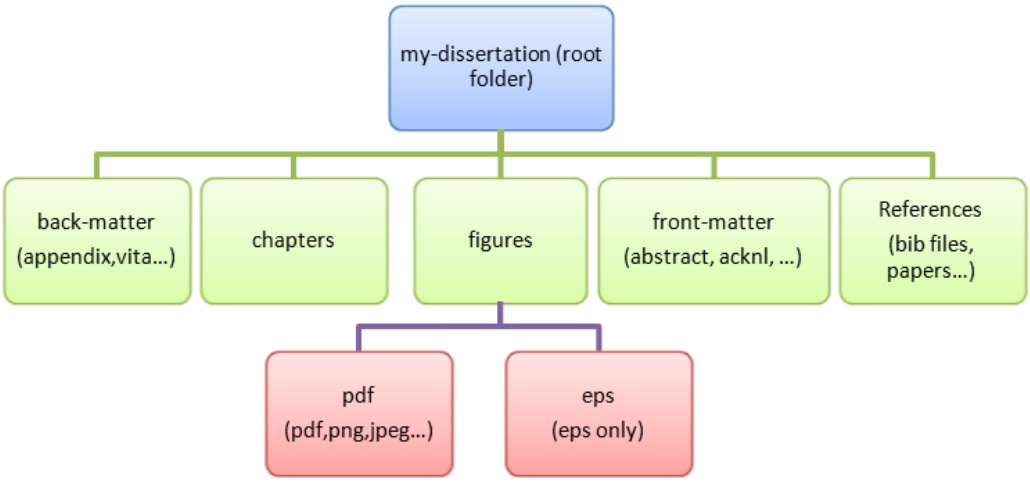


Figure 1-1. UT thesis template folder structure. The main LaTeX file and BibTeX file are in the top directory. All other files are placed in any of the four folders (back-matter, chapters, figures, front-matter).

The general structure of this template is based on the tree shown in Figure 1-1. The titles of the folders are self descriptive and should guide you to proper file placement. Note that this is only a suggested model that could be modified to fit your own organizational structure.

1.1 A Section multiple lines

This is a paragraph found in a section part.

1.1.1 A subsection

This is a paragraph found in a subsection part. For more information, check: http://en.wikibooks.org/wiki/LaTeX/Floats,_Figures_and_Captions

1.1.2 Another subsection

This is a paragraph found in another subsection part.

1.1.2.0 A subsubsection

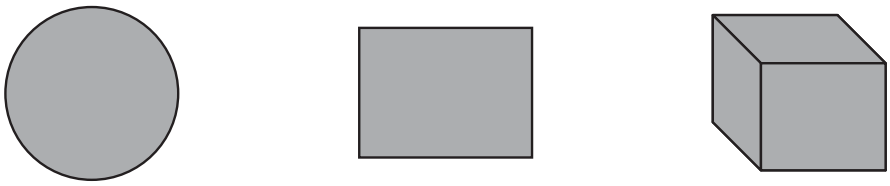
This is a paragraph found in a subsubsection part.

1.1.2.0 A second subsubsection

This is a paragraph found in another subsubsection part. Refer to section A.1 in Appendix A for further information.

1.2 Multipart figures

This is a paragraph found in another section part.



(a) Circle (b) Rectangle (c) Cube

Figure 1-2. Geometric shapes, each presented as a subfigure. (a) is a circle, (b) is a rectangle, and (c) is a cube.

For multipart figures (e.g., Figure 1-2b), you need to use the package "subcaption".

Table 1-1. A multirow table example.

col1	col2	col3
Multiple rows	cell2	cell3
	cell5	cell6
	cell8	cell9

Discussing some analysis results from Table 1-1. It all started at section 1.1 and never ended ...

CHAPTER 2

EXPERIMENTS

This is a citation [1]. This is a very short guide to an unofficial thesis/dissertation template for the University of Tennessee[1]. It is based on the 2017[2] thesis specifications but can be easily altered as the guidelines are changed. This template requires a basic knowledge of LaTeX and should cover the basic requirements in terms of required packages and functionality.

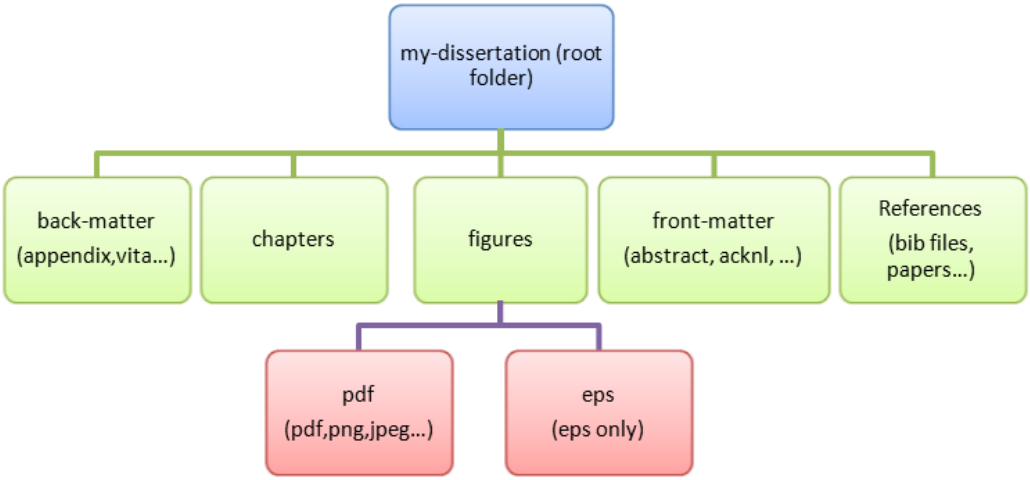


Figure 2-1. UT thesis template folder structure. The main LaTeX file and BibTeX file are in the top directory. All other files are placed in any of the four folders (back-matter, chapters, figures, front-matter).

Again, in Figure 2-1 is the folder structure.

2.1 Details

$$die\ yield = wafer\ yield \times \frac{1}{\left(1 + \frac{defects\ per\ unit\ area \times die\ area}{N}\right)^{N}} \tag{2.1}$$

[1] UTK is a public university in Knoxville, TN

[2] The 2017 template was based on a 2016 template

Use the die yield model to obtain equation 2.1.

My life summary is found in Chapter B.1.

This is a citation [2]. This is a citation [3]. This is a citation [4]. This is a citation [5]. This is a citation [6]. This is a citation [7]. This is a citation [8]. This is a citation [9]. This is a citation [10]. This is a citation [11]. This is a citation [12]. This is a citation [13]. This is a citation [14]. This is a citation [15]. This is a citation [16].

CHAPTER 3

RESULTS

This is more text, see [17].

Table 3-1. A multirow table example.

col1	col2	col3
Multiple rows	cell2 cell5 cell8	cell3 cell6 cell9

Discussing some analysis results from Table 3-1.

3.1 Plots

(a) Circle (b) Rectangle

Figure 3-1. Geometric shapes, each presented as a subfigure. (a) is a circle and (b) is a rectangle

For multipart figures (e.g., Figure 3-1), you need to use the package “subcaption”.

CHAPTER 4
CONCLUSIONS

This is the last chapter and we can reference previous chapters, for example, Chapter 1 provided the introduction.

4.1 Future Work

A lot more can be done.

LIST OF REFERENCES

[1] H. Anzt, M. Kreutzer, E. Ponce, G. D. Peterson, G. Wellein, and J. Dongarra, "Optimization and performance evaluation of the IDR iterative Krylov solver on GPUs," *International Journal of High Performance Computing Applications*, 2016.

[2] V. García-Negrón, A. Oyedele, E. Ponce, O. Rios, D. Harper, and D. Keffer, "Evaluation of nano- and mesoscale structural features in composite materials through hierarchical decomposition of the radial distribution function." In press, February 2018.

[3] E. Ponce, G. D. Peterson, and B. Rekepalli, "Optimizing genomic sequence searches to next-generation Intel architectures," in *Proceedings of the 7th International Conference on Bioinformatics and Computational Biology (BICoB'15)*, vol. 1, ISCA, March 2015.

[4] A. Gonzalez, O. Rodriguez, O. Mangual, E. Ponce, and X. Velez, "Adaptive embedded digital system for plasma diagnostics," *Journal of Physics: Conference Series*, vol. 511, no. 012086, 2014.

[5] C. Kotas, E. Ponce, H. Williams, and J. Barhen, "Coherent spatio-temporal sensor fusion on a hybrid multicore processor system," in *Proceedings of the 15th International Conference on Information Fusion (FUSION'12)*, pp. 1504–1510, IEEE, July 2012.

[6] G. Alvarez, L. G. Dias da Silva, E. Ponce, and E. Dagotto, "Time evolution with the density-matrix renormalization-group algorithm: a generic implementation for strongly correlated electronic systems," *Physical Review E*, vol. 84, Nov 2011.

[7] E. Ponce and G. D. Peterson, *Computer Architecture: A Quantitative Approach*, ch. Appendix A Solutions: Instruction Set Principles. In [8], 6 ed., Dec 2017.

[8] J. L. Hennessy and D. A. Patterson, *Computer Architecture: A Quantitative Approach*. Morgan Kaufmann, 6 ed., Dec 2017.

[9] M. L. Harris, E. Ponce, and B. Rekepalli, "Bioinformatics analysis tools using the PoPLAR science gateway," in *Poster session at Oak Ridge National Laboratory*, (Oak Ridge, TN), Aug 2014.

[10] E. Ponce, B. Rekepalli, and G. D. Peterson, "Next-generation bioinformatics tools on next-generation hybrid architectures," in *Poster session at Extreme Science and Engineering Discovery Environment (XSEDE'14)*, (Atlanta, GA), July 2014.

[11] J. Barhen and E. Ponce, "Toward asynchronous computing on hybrid GPU systems," in *Poster session at the 7th International Conference on High-Performance and Embedded Architectures and Compilers (HiPEAC'12)*, (Paris, France), July 2012.

[12] J. Barhen, E. Ponce, H. Kettani, and V. Zaharov, "Asynchronous computing using CUDA on a Tesla C2050 GPU," in *Poster session at Fall Creek Falls Conference*, (Gatlinburg, TN), Sept 2011.

[13] G. Alvarez and E. Ponce, "Code refactoring and test suite development for the density matrix renormalization group algorithm," in *Poster session at Oak Ridge National Laboratory*, (Oak Ridge, TN), Aug 2010.

[14] A. Ganguly and E. Ponce, "Global and U.S. southeast assessment of precipitation: comparison of model simulations from the Intergovernmental Panel on Climate Change with reanalysis-based observations," in *Poster session at Oak Ridge National Laboratory*, (Oak Ridge, TN), Aug 2009.

[15] H. Anzt, E. Ponce, G. D. Peterson, and J. Dongarra, "GPU-accelerated co-design of induced dimension reduction: algorithmic fusion and kernel overlap," in *Presentation at the 2nd International Workshop on Hardware-Software Co-Design for High Performance Computing (Co-HPC'15)*, (Austin, TX), Nov 2015.

[16] E. Ponce, "Session chair at the 2nd International Conference on Software Technology and Engineering (ICSTE'10), San Juan, PR," Oct 2010.

[17] H. Anzt, E. Ponce, G. D. Peterson, and J. Dongarra, "GPU-accelerated co-design of induced dimension reduction: algorithmic fusion and kernel overlap," in *Proceedings of the 2nd International Workshop on Hardware-Software Co-Design for High Performance Computing (Co-HPC'15)*, ACM, 2015.

APPENDICES

APPENDIX A

SAFETY

Here is a math equation: $y = mx + b$
The above equation represents a line.

A.1 An appendix section

This is a section in Appendix A.

A.1.1 An appendix subsection

This is a subsection in Appendix A.

A.1.1.0 An appendix subsubsection

This is a subsubsection in Appendix A.

A.1.1.0 Another appendix subsubsection

This is another subsubsection in Appendix A.

APPENDIX B

SIMD

This is another appendix for testing format.

B.1 A section

This is a section in Appendix B.

VITA

The vita should be written in narrative form, not resume or curriculum vitae form. It should contain appropriate academic and professional information about the author/student. Personal information, such as the student's address or phone number, should not be included.