NEWS EVENT PREDICTION USING CAUSALITY APPROACH ON SOUTH CHINA SEA CONFLICT

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NEWS EVENT PREDICTION USING CAUSALITY APPROACH ON SOUTH CHINA SEA CONFLICT

TEO WEN LONG

A final year project report submitted in partial fulfilment of the
requirements for the award of the degree of
Bachelor Degree of Computer Science (Network in Security)

School of Computing
Faculty of Engineering
Universiti Teknologi Malaysia

JANUARY 2019

DECLARATION

I declare that this final year project report entitled *"News Event Prediction using Causality Approach on South China Sea Conflict"* is the result of my own research except as cited in the references. The final year project report has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

Signature	:	
Name	:	TEO WEN LONG
Date	:	March 27, 2019

DEDICATION

This thesis is dedicated to my father, who taught me that the best kind of knowledge to have is that which is learned for its own sake. It is also dedicated to my mother, who taught me that even the largest task can be accomplished if it is done one step at a time.

ACKNOWLEDGEMENT

Acknowledgement

ABSTRACT

A 1-page abstract is a *movie (thesis) trailer*. Avoid summarizing your Introduction chapter. Focus on the problem statement, hypothesis/objective, research approach, quantitative validation summary, and implication of your findings. For Ph.D., emphasize on original contributions.

ABSTRAK

The Malay abstract is written as the sentence structure of the English abstract. All specific terms must be checked with Dewan Bahasa and Pustaka (`http://prpm.dbp.gov.my/`).

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CHAPTER 1

INTRODUCTION

This template conforms with the **UTM!** (**UTM!**) 2018 new requirement [**?**]. Students who wish to learn more on LyX should refer to documentations available here [**?**]. You do not need to know deep on LaTeX [**?**] to use this LyX template.

1.1 Definition of thesis

Thesis (generic term, see also Figure **??**) is a documented evidence of defined scope and length that a candidate is

- Understand relevant theoretical issues
- Technically competent
- Has critical-thinking ability
- Able to *conduct scholarly research*

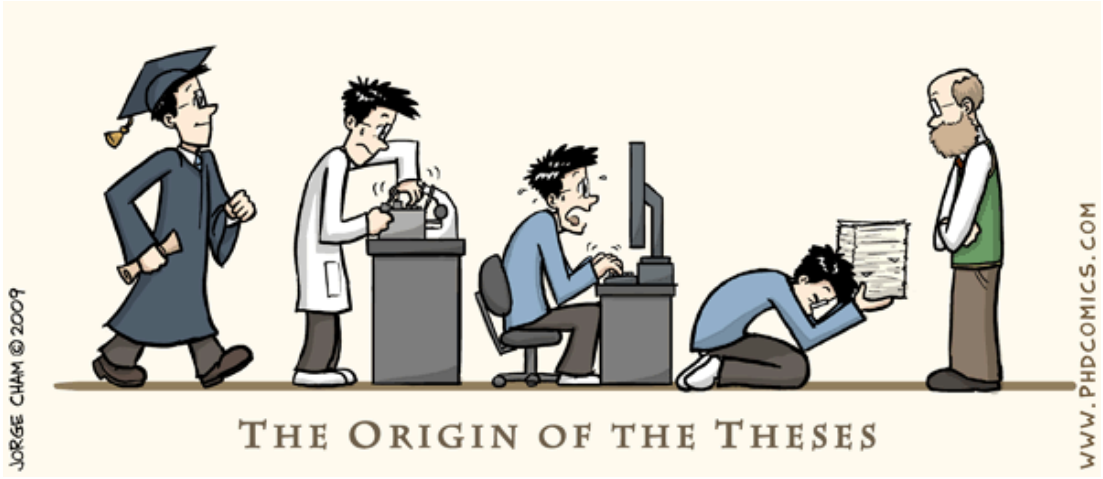

Figure 1.1 As it goes

Students have to write a scientific document of a defined scope and length to demonstrate the achievement. According to UTM nomenclature

- UG FYP - *report*
- Master by taughtcourse project - *project report*
- Master by taughtcourse and research (mixed-mode) - *dissertation*
- Master by research and PhD - *thesis*

Different degree level has different expectation

- Undergraduate report demonstrates the capacity to apply basic research skills in an area of interest. At this level, the focus is on gaining **broad competencies**.
- Masters thesis/dissertation/report demonstrates the capacity to apply advanced research skills (i.e. move **beyond basic** research skills) in an area of interest to a Master student is able to incorporate some critical insights in his/her study. At this level, the focus is on developing critical thinking in a subject area.
- PhD thesis demonstrates the capacity to apply **specialized** research skills (i.e. expert knowledge of a particular concept or method) in an area of interest so that a PhD student can make significant and original contribution to knowledge. At this level, the focus is on identifying a 'gap' in knowledge and addressing it, hence advancement in knowledge in a field of study.

1.2 Main steps in thesis/dissertation/report writing

- Plan/elaborate the outline
  - A *plot* for your thesis writing
  - Target: *logical story* for the document
  - Results
    - Stand-alone tables/graphs
    - Describe each, then number crunch
    - Use Appendices for detailed items
- Get feedback from the supervisor

- If you are writing in a language other than your mother language, consider getting specialized editing help

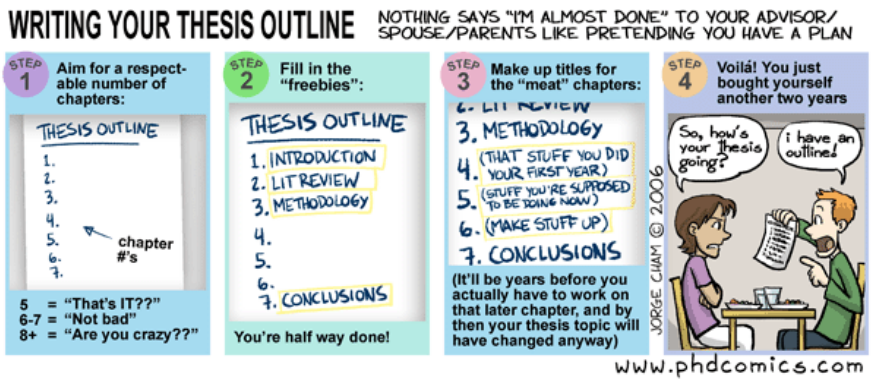

Figure 1.2 Thesis outline

CHAPTER 2

THESIS STRUCTURE SHOWN AS A VERY VERY VERY VERY VERY VERY VERY VERY VERY VERY VERY VERY VERY VERY VERY VERY VERY VERY VERY VERY VERY VERY VERY LONG TITLE

2.1 Thesis title (SPS guidelines)

- Thesis title should be a concise description of the main focus and contribution of the research. It should not contain more than 15 words excluding grammatical words such as articles, conjunction and prepositions.
- To avoid redundancy, titles should not contain phrases which reflect research exercise such as “An investigation of ...”, “A preliminary study of ...”, “A study of ...”, “Analysis of ...”, “On the ...”, “Theory of ...”, “Some „„”, and “Toward a ...”.
- Thesis title should not contain formulas, symbols or subscripts, Greek letters, or other non-alphabetical symbols. Word substitutes should be used instead.
- Thesis title should not contain acronyms or even acronyms in brackets unless the term is commonly used in the field of the study (eg: DNA, GPS). For example, “GIS” should be written as “Geographical Information System” and should not be written as “Geographical Information System (GIS)”.
- Thesis title should not contain punctuation such as colon “:”, semicolon “;”, etc. except commas “,” when necessary.

2.2 Flow of arguments

Each thesis is unique and depends on the writer and the editor (your supervisor). There is no cast-on-stone and rigid thesis structure. The following example a good starting point:

2.2.1 Thesis

Thesis title should be a concise description of the main focus and contribution of the research

2.2.2 Abstract

- A short summary of the the thesis/dissertation/report
  - Describe the problem and the research approach
  - Emphasize the original contributions
  - A movie trailer and not a summary of thesis

2.2.3 Introducing your work

- An overview of the problem
  - Problem motivation and why it is important
  - Problem definition highlight what had been done before and the research gap to be studied, worthy a (PhD, Master, or UG) degree
  - Your hypothesis or objective of the thesis
  - Organization of the thesis – you should guide the readers on what to expect next
- Make it readable by anyone

2.2.4 Discussion of the problem and state-of-the-art solutions to problem

- Usually titled as Literature Review
- Not a literature survey in general, but rather a synthesis of the state-of-the-art related to the thesis!
  - Can also include a background information – brief synthesis of the most relevant aspects related to the thesis in order to help the reader understand the context and the contributions coming from other disciplines.

- It can also be used to better motivate the research question.
- Identify gaps/limitations of existing state-of-the-arts
- Background & related work may overlap
  - Need to discuss related work at start to set the scene
  - Need to discuss related work at end to demonstrate your originality
  - But not cut and paste!
  - Exercise your synthesis and critic skills!
- Make the definitions precise, concise, and unambiguous.

2.2.5 Your proposed work

- Usually entitled Methodology, but not necessary
- Here you develop your conceptual contribution, i.e. the central concept of your work
  - Discussion of the thesis and different perspectives of analysis of the research question
    - Definition of problem
    - Formulation of concepts, definitions, theories
  - Research design
    - Elaboration of frameworks, models, architectures
    - Methods and procedure, variables
    - May include description of a prototype system implementation and its use towards solving the research problem
    - Can include some context information (e.g. development software, test environment, procedure, limitations, assumptions, range of validity)
    - But not too many details!!!

2.2.6 Validation of hyposthesis

- Usually titled as Result and Discussion
- Describe experiment details that provide evidence in support of your thesis
  - Developing a prototype may not enough to validate the thesis – at most it is a proof of feasibility of your system
  - Validation is about collecting (enough) evidence to convince the other researchers about the validity of the thesis through
    * A proper (systematic) method
    * Organized argumentation (is important)
  - Analysis and concepts form the heart of the work
  - It must state what was learned, not only the facts that were gathered!

2.2.7 Take home message to readers

- Summarize what was learned and how it can be applied
  - Include the broader implications of your results
  - Do not repeat word for word the abstract, introduction or discussion
  - Mention the possibilities for future research

2.2.8 References to back up your statements

- If you make a statement, back it up with your own data or a reference
  - All references cited in the text must be listed
  - UTM supports either the numbering or author-year format
  - Try to avoid inclusion of references as footnotes

2.2.9 Appendices

- This is an optional part
  - It can include:
    - Implementation details
    - Detailed experiment data
  - May be important to
    - Convince the reader
    - Help others replicating the experiment
  - ... but are “boring” or too detailed to include in the main body of the thesis

2.3 Suggested order for writing

- Begin by writing the chapters that describe your research (2,3, 4, and 5 in the above outline)
- Define all technical terms and make the definitions precise and formal
- After reading the main chapters to verify terminology, write the conclusions
- Write the introduction
- Complete with an abstract

2.4 The revision journey

- Revise them and start getting feedback
  - **think-plan-write-revise** cycles
- Get early feedback from colleagues
  - Starting with the key chapters
- Carefully revise those chapters before giving them to your supervisor
- When you have a complete draft

- Consider 2 or 3 complete revision/editing iterations!
- Could be more

CHAPTER 3

RESULTS AND DISCUSSION

3.1 Graphic and Images

A good thesis needs good diagrams/graphs/illustrations. Spend some time doing in properly. A good picture tells a thousand words.

3.2 Floats

- A float doesn't have a fixed location.
  - It can "float" forward or backward to wherever it fits best to get a high quality layout.
  - Caption as part of a float.
- Float Placement

  h : try to place the float at the position where it is inserted

  t : try to place the float at the top of the current page

  b : try to place the float at the bottom of the current page

  p : try to place the float at an own page

Table 3.1 The role of statistical quality engineering tools and methodologies

Temperature	Resonant Frequency	Q factor
13 mK ± 1 mK	16.93	811
40 mK ± 1 mK	16.93	817
100 mK ± 1 mK	16.93	815
300 mK ± 1 mK	16.93	806
500 mK ± 1 mK	16.93	811
800 mK ± 5 mK	16.93	814
1000 mK ± 5 mK	16.93	806

Figure 3.1 Example of a figure. This is a long, very long, long long, long caption. You can give a shorter caption for the “list of figures" using the square braket symbol.

Table 3.2 The role of statistical quality engineering tools and methodologies

Temperature	Resonant Frequency	Q factor
13 mK ± 1 mK	16.93	811
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800 mK ± 5 mK	16.93	814
1000 mK ± 5 mK	16.93	806

CHAPTER 4

CONCLUSION

4.1 Research Outcomes

4.2 Contributions to Knowledge

4.3 Future Works

LIST OF PUBLICATIONS

Journal with Impact Factor

1. Paper 1
2. Paper 2

Indexed Journal (SCOPUS)

1. Paper 3

Non-Indexed Journal

1. Paper 4

Indexed conference proceedings

1. Paper 5

Non-Indexed conference proceedings

1. Paper 6

Appendix A Time-series Data

Some data