Thesis for the Degree of Ph. D.

Thesis title line 1
Title line 2

School of Electronics Engineering, Major in Signal Processing

The Graduate School

Your English Name

June 2020

The Graduate School

Kyungpook National University

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Title line 2

Your English Name

School of Electronics Engineering, Major in Signal Processing
The Graduate School

Supervised by Professor Prof. 1
Co-supervised by Professor Prof. 2

Approved as a qualified thesis of Your English Name
for the degree of Ph.D. by the Evaluation Committee

June 2020

Chairperson Prof. 1

Prof. 2

Prof. 3

Prof. 4

Prof. 5

The Graduate School Council
Kyungpook National University

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I. INTRODUCTION

This is the template for the PhD thesis of School of Electronics Engineering, KNU. Please check and confirm your department name with the office.

You change the month and year of graduation from 'June 2020' to yours in thesis.sty.

The remainder of this thesis is organized as follows. The subsections, figures, and tables are described in Chapter II. The equations are described in Chapter III. Section IV explains how to add the references. Finally, the conclusions and the future directions are detailed in Chapter V.

II. SUB SECTIONS, FIGURES AND TABLES

In this chapter, how to the subsections and also the tables and figures are discussed in detail.

2.1 Sub Section

An example table is shown in Table 2.1.

Table 2.1: An example table.

Dataset Name	Classes	Training Set	Testing Set
Yelp P	2	560,000	38,000
Yelp F	5	650,000	50,000
Yahoo	10	1,400,000	60,000
Amazon F	5	3,000,000	650,000
Amazon P	2	3,6000,000	400,000
DBPedia	14	560,000	70,000

2.1.1 Sub Sub Section

An example figure is shown in Figure 2.1.

2.1.1.1 Sub Sub Sub Section

This is a Sub Sub Sub Section. This will not show up in the table of contents (TOC). If you want it to be shown, then set the ‘‘tocdepth” to 4 or more in thesis.tex.

Dataset	Label	Sample
Yelp Reviews	+1	”Been going to Dr. Goldberg for over 10 years. I think I was one of his 1st patients when he started at MHMG. He’s been great over the years and is really all about the big picture. [...]”
Amzazon Review	3(/5)	I love this show, however, there are 14 episodes in the first season and this DVD only shows the first eight. [...]. I hope the BBC will release another DVD that contains all the episodes, but for now this one is still somewhat enjoyable.
Yahoo Answers	”Computer, Internet”	”What should I look for when buying a laptop? What is the best brand and what’s reliable?”,”Weight and dimensions are important if you’re planning to travel with the laptop. Get something with at least 512 mb of RAM. [..] is a good brand, and has an easy to use site where you can build a custom laptop.”

Figure 2.1: An example figure.

2.1.1.1.1 Sub Sub Sub Sub Section

This is a Sub Sub Sub Sub Section. This will not show up in the TOC. If you want it to be shown, then set the ‘‘tocdepth” to 5 in thesis.tex.

III. How to add an equation

An example Eq. (1) is as follows.

$$
\begin{aligned}
r_t &= \sigma(W_{xr}x_t + W_{hr}h_{t-1}) \\
z_t &= \sigma(W_{xz}x_t + W_{hz}h_{t-1}) \\
u_t &= \tanh(W_{xu}x_t + W_{hu}(r_t \odot h_{t-1})) \\
h_t &= z_t h_{t-1} + (1 - z_t)u_t
\end{aligned}
\tag{1}
$$

where $\sigma(\cdot)$ and $\tanh(\cdot)$ are the sigmoid and tangent hyperbolic activation functions, respectively, $\odot$ denotes the element-wise multiplication operator, and r_t, z_t are referred to as *reset*, *update* gates, respectively. u_t and h_t are the candidate activation and the new hidden state of the GRU, respectively.

IV. ADDING REFERENCES

This is a reference to a section: We use the data described in Section 2.1.

4.1 Example references

For evaluation, the Recall-Oriented Understudy for Gisting Evaluation (ROUGE) metrics [1] proposed by Lin et al. [2] is adopted.

V. CONCLUSION AND FUTURE WORKS

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REFERENCES

[1] C.-Y. Lin, ‘‘Rouge: A package for automatic evaluation of summaries,” in *Text summarization branches out*, 2004, pp. 74--81.

[2] C.-Y. Lin and E. Hovy, ‘‘Automatic evaluation of summaries using n–gram co-occurrence statistics,” in *Proceedings of the 2003 Conference of the North American Chapter of the Association for Computational Linguistics on Human Language Technology-Volume 1*. Association for Computational Linguistics, 2003, pp. 71--78.

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(Abstract)

Fusce mauris. Vestibulum luctus nibh at lectus. Sed bibendum, nulla a faucibus semper, leo velit ultricies tellus, ac venenatis arcu wisi vel nisl. Vestibulum diam. Aliquam pellentesque, augue quis sagittis posuere, turpis lacus congue quam, in hendrerit risus eros eget felis. Maecenas eget erat in sapien mattis porttitor. Vestibulum porttitor. Nulla facilisi. Sed a turpis eu lacus commodo facilisis. Morbi fringilla, wisi in dignissim interdum, justo lectus sagittis dui, et vehicula libero dui cursus dui. Mauris tempor ligula sed lacus. Duis cursus enim ut augue. Cras ac magna. Cras nulla. Nulla egestas. Curabitur a leo. Quisque egestas wisi eget nunc. Nam feugiat lacus vel est. Curabitur consectetuer.

Title in Korean

한국 이름 (Your Korean Name)

경북대학교 대학원 전자공학부 신호처리전공

(지도교수　지도교수 이름 (Prof. 1 Name in Korean)
공동지도교수 (Prof. 2 Name in Korean))

(초록)

딥러닝 기술을 이용한 텍스트 분류는 최근 자연어 처리에서 주요 연구 과제로 떠오르고 있다. 요약과 분류를 위한 기존의 딥러닝 모델 대부분은 입력 텍스트의 길이가 증가할 때 어려움에 직면한다. 대부분의 모델은 입력 텍스트 길이가 짧은 경우에서는 잘 작동하지만 입력의 길이가 증가함에 따라 점차 성능이 저하된다.