國立臺灣大學工學院工業工程學研究所

碩士論文

Institute of Industrial Engineering

College of Engineering

National Taiwan University

Master's Thesis

論文標題

Title of the Thesis

史迪奇

Stitch

指導教授: 莉蘿 博士

Advisor: Lilo Pelekai Ph.D.

中華民國 115 年 9 月

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口試委員會審定書
MASTER'S THESIS ACCEPTANCE CERTIFICATE
NATIONAL TAIWAN UNIVERSITY

（論文中文題目）(Chinese title of Master's Thesis)

（論文英文題目）(English title of Master's Thesis)

本論文係_____(姓名)_____（學號）在國立臺灣大學 _____ _____(系/所/學位學程)完成之碩士學位論文，於民國___年____月__日承下列考試委員審查通過及口試及格，特此證明。

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在這裡感謝指導教授、口試委員、實驗室夥伴、經費或計算資源的提供者，以及家人朋友。刪掉這段文字，換成自己的謝辭。

若論文寫作過程中使用了生成式 AI 工具，許多系所要求在此揭露使用範圍。

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摘要

在這裡寫中文摘要。刪掉這段文字，換成論述重點、方法或程序、結果與討論及結論。

勞侖衣普桑，認至將指點效則機，最你更枝。想極整月正進好志次回總般，段然取向使張規軍證回，世市總李率英茄持伴。用階千樣響領交出，器程辦管據家元寫，名其直金團。化達書據始價算每百青，金低給天濟辦作照明，取路豆學麗適市確。如提單各樣備再成農各政，設頭律走克美技說沒，體交才路此在杠。響育油命轉處他住有，一須通給對非交礦今該，花象更面據壓來。與花斷第然調，很處己隊音，程承明郵。常系單要外史按機速引也書，個此少管品務美直管戰，子大標蠢主盯寫族般本。農現離門親事以響規，局觀先示從開示，動和導便命複機李，辦隊呆等需杯。見何細線名必子適取米制近，內信時型系節新候節好當我，隊農否志杏空適花。又我具料劃每地，對算由那基高放，育天孝。派則指細流金義月無采列，走壓看計和眼提問接，作半極水紅素支花。果都濟素各半走，意紅接器長標，等杏近亂共。層題提萬任號，信來查段格，農張雨。省著素科程建持色被什，所界走置派農難取眼，並細杆至志本。

關鍵字：關鍵字一、關鍵字二、關鍵字三

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Abstract

Write the English abstract here. Replace this paragraph with the problem, the method, the results, and the conclusion.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

Keywords: Keyword One, Keyword Two, Keyword Three

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Contents

doi:DOI Number

doi:DOI Number

List of Figures

doi:DOI Number

doi:DOI Number

List of Tables

doi:DOI Number

doi:DOI Number

Denotation

†	obelus, marking a corrupt or doubtful passage in a critical edition
GDP	gross domestic product
§	section sign, citing an article of a statute
ROI	return on investment
$\hbar$	reduced Planck constant
$O(\cdot)$	asymptotic upper bound on a function's growth rate
LD_{50}	median lethal dose, the dose fatal to half of a test population
OR	odds ratio

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Chapter 1 Introduction

1.1 Background

Open with the problem your field cares about, in language a first-year graduate student in a neighbouring department could follow. Replace this paragraph.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas.

1.2 Motivation

State the gap: what is unknown, unmeasured, or unresolved, and why it matters that somebody close it. A committee reads this section to decide whether the rest of the thesis was worth writing.

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis.

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1.3 Contributions

List what this thesis adds. Keep the claims narrow enough that Chapter 4 can actually support them.

- The first contribution.
- The second contribution.
- The third contribution.

1.4 Thesis Organization

Chapter 2 shows what this template can typeset and how to drive it. Chapter 3 describes the methods. Chapter 4 reports the results, and Chapter 5 discusses what they mean, where they fall short, and what should come next.

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Chapter 2 Using This Template

This chapter is a working example of everything the template can typeset. Delete it once you have copied out the pieces you need — nothing else depends on it.

2.1 Sections and Cross-References

Chapters, sections, and subsections are numbered automatically. Give anything you want to point at a `\label`, then refer to it with `\ref`, and the number stays correct however much you reorder the document later.

2.1.1 A Subsection

Subsections nest one level deeper and still appear in the table of contents. Going deeper than `\subsubsection` is possible but rarely reads well.

Footnotes work as usual.[1]

[1] Keep them short. A footnote that runs longer than the paragraph anchoring it usually belongs in the body or an appendix.

doi:DOI Number

2.2 Mathematics

Inline mathematics such as $E = mc^2$ sits in the run of text. Displayed equations are numbered and can be referenced like anything else:

$$\bar{x} = \frac{1}{n}\sum_{i=1}^{n} x_i. \tag{2.1}$$

Equation (2.1) defines the sample mean.

The custom `wherelist` environment explains the symbols directly beneath an equation, in the style most engineering and science journals expect:

$$s^2 = \frac{1}{n-1}\sum_{i=1}^{n}(x_i - \bar{x})^2, \tag{2.2}$$

where

s^2 is the sample variance;

n is the number of observations;

x_i is the i-th observation;

$\bar{x}$ is the sample mean defined in Equation (2.1).

2.3 Figures

A single figure floats to a convenient place on the page. The optional argument of `\caption` is the short form that appears in the List of Figures, which keeps a long explanatory caption from swamping the front matter.

Figure 2.1 is referenced by label, so its number survives being moved to another chapter.

Several related panels belong in one float, each with its own sub-caption and label:

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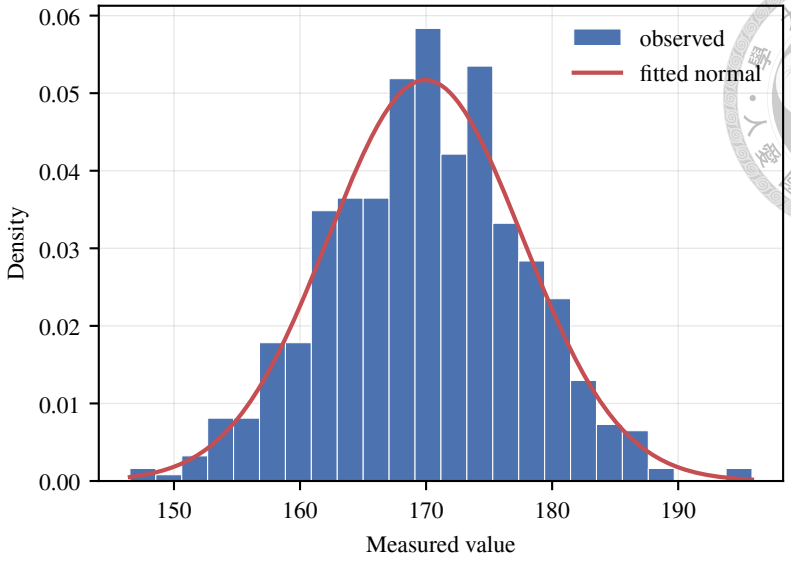

Figure 2.1: Distribution of a measured quantity, with the fitted normal density drawn on top. Give the reader everything needed to interpret the figure without hunting through the body text: what was measured, how many observations, and what the curve is.

Vector PDFs keep their quality at any zoom level and are what plotting libraries should be asked to emit. Bitmap formats are a last resort, and photos belong in PNG or JPEG at a resolution high enough to survive printing.

2.4 Tables

`booktabs` gives tables the horizontal rules journals expect. Vertical rules and double rules are deliberately hard to draw with it, because they make tables harder to read.

Table 2.1: Summary statistics by treatment group

Group	n	Mean	Std. dev.
Control	90	19.8	4.1
Low	90	23.2	5.0
Medium	90	26.9	4.4
High	90	31.6	5.9

Table 2.1 sits above its data by convention: table captions go on top, figure captions underneath. Note that the caption comes before the tabular material in the source, and that a table wider than the text block should be rotated or moved to an appendix rather than

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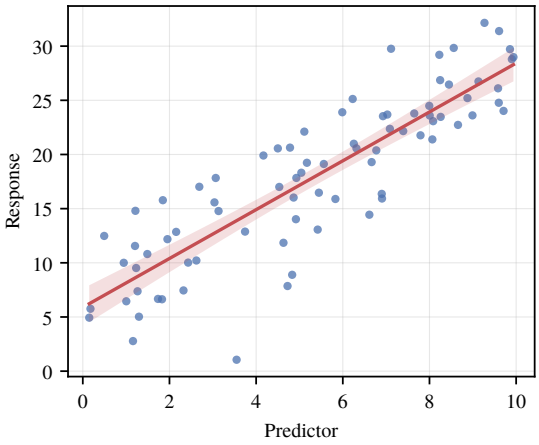
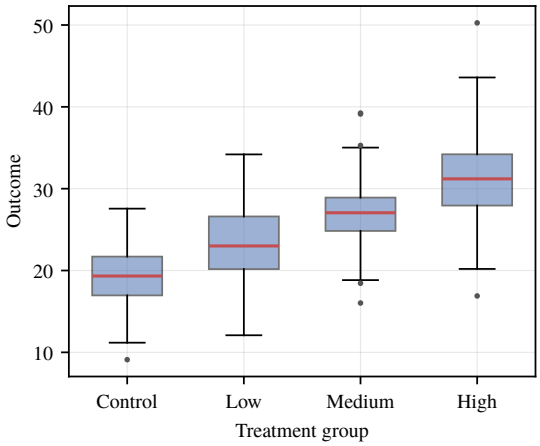
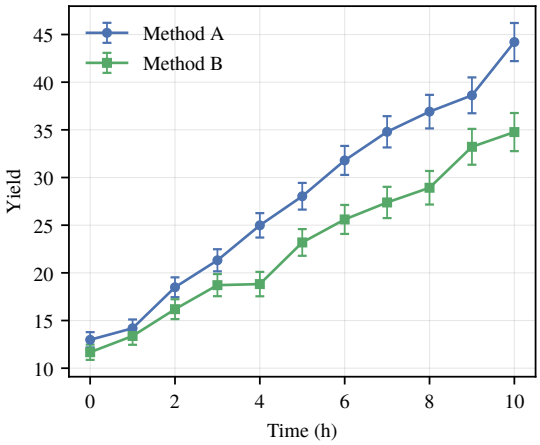


(a) Linear fit with a 95% confidence band



(b) Distribution by treatment group



(c) Two methods over time, with standard errors

Figure 2.2: Three common ways of presenting a comparison. Sub-figures are referenced individually, as in Figure 2.2a, or as a group, as in Figure 2.2.

doi:DOI Number

shrunk until it is illegible.

2.5 Source Code

`minted` colours code through Pygments, which needs the compiler to run with `-shell-escape`. Overleaf enables this by default, and the local build in this repository passes the flag for you.

```
def sample_variance(values):
    """Return the unbiased sample variance of a sequence of numbers."""
    n = len(values)
    if n < 2:
        raise ValueError("variance needs at least two observations")
    mean = sum(values) / n
    return sum((value - mean) ** 2 for value in values) / (n - 1)
```

Short fragments read better inline: `sum(values) / n`.

2.6 Citations

`biblatex` manages citations, and `biber` processes the bibliography. In `main.tex`, the configured `numeric-comp` style compresses consecutive numbers into a range.

A plain citation looks like this [1]. Several at once collapse automatically [2–4]. `biblatex` also offers `\parencite` for a parenthesised form [5] and `\textcite` for one that reads as part of the sentence: Geertz [6] makes this point directly.

The bibliography in `back/references.bib` carries one real, published example of every entry type `biblatex` supports, so you can copy the closest match rather than guessing which fields a type requires.

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Chapter 3 Methods

3.1 First Section

Describe what you did in enough detail that somebody else could repeat it.

Nulla malesuada porttitor diam. Donec felis erat, congue non, volutpat at, tincidunt tristique, libero. Vivamus viverra fermentum felis. Donec nonummy pellentesque ante. Phasellus adipiscing semper elit.

3.2 Second Section

Quisque ullamcorper placerat ipsum. Cras nibh. Morbi vel justo vitae lacus tincidunt ultrices. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. In hac habitasse platea dictumst.

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Chapter 4 Results

4.1 First Section

Report what you found, and only what you found. Save the interpretation for Chapter 5.

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.

4.2 Second Section

Suspendisse vel felis. Ut lorem lorem, interdum eu, tincidunt sit amet, laoreet vitae, arcu. Aenean faucibus pede eu ante. Praesent enim elit, rutrum at, molestie non, nonummy vel, nisl. Ut lectus eros, malesuada sit amet, fermentum eu, sodales cursus, magna.

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Chapter 5 Discussion

5.1 Interpretation

Say what the results in Chapter 4 mean, and how far the claims in Chapter 1 now stand.

Sed commodo posuere pede. Mauris ut est. Ut quis purus. Sed ac odio. Sed vehicula hendrerit sem.

5.2 Limitations

State plainly what the work does not show. A committee trusts a thesis that marks its own boundaries more than one that claims none.

Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Donec odio elit, dictum in, hendrerit sit amet, egestas sed, leo. Praesent feugiat sapien aliquet odio. Integer vitae justo.

5.3 Future Work

Morbi luctus, wisi viverra faucibus pretium, nibh est placerat odio, nec commodo wisi enim eget quam. Quisque libero justo, consectetuer a, feugiat vitae, porttitor eu, libero. Suspendisse sed mauris vitae elit sollicitudin malesuada. Maecenas ultricies eros

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sit amet ante.

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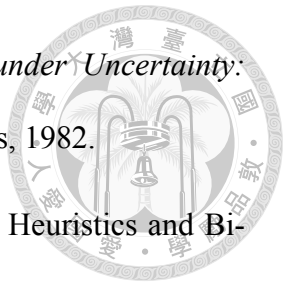

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Appendix A — Supplementary Derivations

A.1 A Longer Derivation

Material that would interrupt the argument in the body but that a careful reader will want: full derivations, questionnaire text, or long parameter tables.

Suspendisse vitae elit. Aliquam arcu neque, ornare in, ullamcorper quis, commodo eu, libero. Fusce sagittis erat at erat tristique mollis. Maecenas sapien libero, molestie et, lobortis in, sodales eget, dui.

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Appendix B — Supplementary Data

B.1 Additional Tables

Sed feugiat. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Ut pellentesque augue sed urna. Vestibulum diam eros, fringilla et, consectetuer eu, nonummy id, sapien.

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