題目：論文標題

Title：Thesis title

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課　程 Program	：	Program
專　業 Major	：	Major
指導教師 Supervisor	：	Your Supervisor
日　期 Date	：	YYYY/MM/DD

摘 要

本文研究離散事件繫統的監督控制問題。在使用該範本中有任何問題請聯繫覃濤 zhwli@ieee.org。澳門科技大學系統工程研究所感謝覃濤對設計此範本的貢獻。

The template can be used in online and offline ways. For the former (highly recommended), Overleaf (https://www.overleaf.com) is a collaborative cloud-based LaTeX editor used for writing, editing and publishing scientific documents, which is much easy to use and friendly. In overleaf, the compiling command is XeLatex.

For the latter, one can use Texstudio, which is a very popular yet free software package (https://www.texstudio.org/). When using Texstudio, the compiling command is XeLatex. To make Texstudio work, one need to first install Miktex, see https://miktex.org/. We happen to find, rather rarely, that a successful compiling may depend on the version of Texstudio. In any case, we recommend the latest version of Texstudio.

關鍵詞：離散事件繫統; 監督控制; 故障診斷.

Abstract

This research deals with the supervisory control problem of discrete event systems.

Do not say something like “This paper”.

(Use singular keywords. Keywords are separated by commas or semicolons, and there is often a period at the end.)

KeyWords：Discrete event system; supervisory control; fault diagnosis.

Table of Contents

List of Figures

If the logo of MUST disturbs your editing, it can be commented out. After the thesis is done, it can be exposed again.

List of Tables

List of Symbols

P	Set of places
G	Deterministic finite automaton
G_{nd}	Nondeterministic finite automaton
δ	Partial state transition function
x_0	Initial state
X_0	Set of initial states
Σ	Set of events

Remark: Articles are not needed in a nomenclature. For example, the counterpart of Σ reads as "Set of events", instead of "The set of events", although an article "a" or "the" is grammatically necessary.

List of Abbreviations

Abbreviations	**Full name in English**
AMS	Automated Manufacturing System
DES	Discrete Event System

Chapter 1 Introduction

緒論的主要作用是：要告訴讀者本文的研究主題、論證本研究主題的價值所在、提出作者對研究問題的主觀答案。通俗地講就是：研究動機、問題背景，選題原因和實際工作的關係、研究的重要性、研究目的、研究假設或待解決問題、名詞及定義以及研究範圍和限制等。

文獻綜述：是描述目前的研究現狀並作簡要分析。可以反映作者研究的功力和閱讀文獻的數量，是否找到研究問題的關鍵文獻及抓準文獻的重點。評述是否切中要害，是否有獨到見解。忌諱採用講義式將有關研究課題的理論和學派簡要地陳述一篇；忌諱輕率批評前人的不足和錯誤；忌諱含糊不清，採用的觀點和內容不清楚來源。

The main function of the introduction is to put forward the research topic of this paper, demonstrate the value of this research topic and put forward the author's subjective answer to the research questions [2].

As far as the authors know, no much attention is paid to the development of computationally efficient methods for siphons in a Petri net.

1.1 Cite in the text

註意：作者人數不同，在參考文獻在文中的引用格式也不同！

Fang develops a method for supervisor synthesis ... [1].

A plethora of computationally efficient methods are reported in [1, 2], which are polynomial with respect to the size of a plant and the number of fault types. However, the diagnosis strategy in [2] behaves more competitively if the number of controllable events is far more less than that of the uncontrollable events.

Wang and Li develop a method for supervisor synthesis ... [2].

Zhao *et al.* develop a method for supervisor synthesis ... [3]. (Three or more authors)

1.2 Format of references

1. 不要引用難於找到的文獻，如在英文論文中引用中文論文。

2. 不要遺漏重要和必要的文獻，以免評閱人對研究者的水平產生質疑。

3. 參考文獻的順序按作者姓的字母升序排列，同樣作者的年代前的在前。

註意: 關於期刊、會議、專著-書，博士論文和專利報告等等，都有不壹樣的格式。在引用時，應該多加留意！

E-books:

[1] L. Bass, P. Clements, and R. Kazman, *Software Architecture in Practice, 2nd ed. Reading, MA: Addison Wesley*, 2003. [E-book] Available: Safari e-book.

Single Author:

[1] W. K. Chen, *Linear Networks and Systems*. Belmont, CA: Wadsworth Press, 2003.

Edited Book:

[2] J. L. Spudich and B. H. Satir, Eds., *Sensory Receptors and Signal Transduction*. New York: Wiley-Liss, 2001.

Selection in an Edited Book:

[3] E. D. Lipson and B. D. Horwitz, "Photosensory reception and transduction," in *Receptors and Signal Transduction*, J. L. Spudich and B. H. Satir, Eds. New York: Wiley-Liss, 2001, pp. 1–64.

Three or More Authors:

[4] R. Hayes, G. Pisano, and S. Wheelwright, *Operations, Strategy, and Technical Knowledge*. Hoboken, NJ: Wiley, 2007.

Manual:

[5] Bell Telephone Laboratories Technical Staff, *Transmission System for Communication*, Bell Telephone Lab, 2005.

Application Note:

[7] Hewlett-Packard, Appl. Note 935, pp.25–29.

Technical Report:

[8] K. E. Elliott and C. M. Greene, "A local adaptive protocol," Argonne National Laboratory, Argonne, France, Tech. Report. 916-1010-BB, 7 Apr. 2007.

Patent/Standard:

[9] K. Kimura and A. Lipeles, “Fuzzy controller component,” U. S. Patent 14, 860,040,14 Dec., 2006.

Paper Published in Conference Proceedings:

[12] J. Smith, R. Jones, and K. Trello, “Adaptive filtering in data communications with self improved error reference,” in *Proc. 16th IEEE International Conference on Wireless Communications*, Taipa, Macau SAR, China, 2004, pp. 65–68.

Papers Presented at Conferences (unpublished):

[13] H. A. Nimr, “Defuzzification of the outputs of fuzzy controllers,” presented at *5th International Conference on Fuzzy Systems*, Cairo, Egypt, 2006.

Thesis or Dissertation (unpublished):

[14] H. Zhang, “Delay-insensitive networks,” M. S. thesis, University of Chicago, Chicago, IL, 2007.

Article in Journal:

[15] K. A. Nelson, R. J. Davis, D. R. Lutz, and W. Smith, “Optical generation of tunable ultrasonic waves,” *Journal of Applied Physics*, vol. 53, no. 2, pp. 1144–1149, Feb. 2002.

Chapter 2 Figures and Tables

2.1 Figures

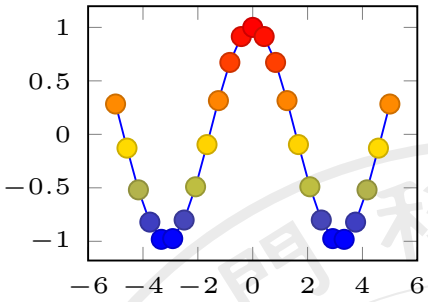

Fig. 2.1: A figure.

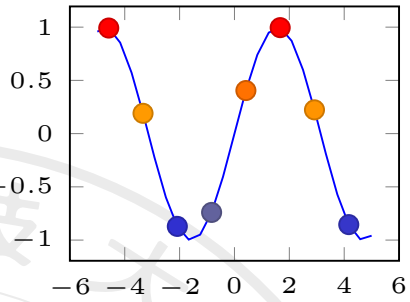

Fig. 2.2: Another figure.

Fig. 2.1 and Fig. 2.2 represent two figures. In what follows, we draw an automaton using LaTeX. All the sizes of elements in a drawing can be controlled.

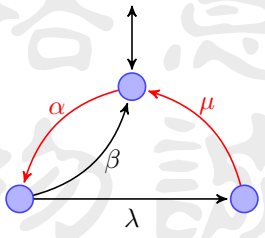

Fig. 2.3: This is an automaton.

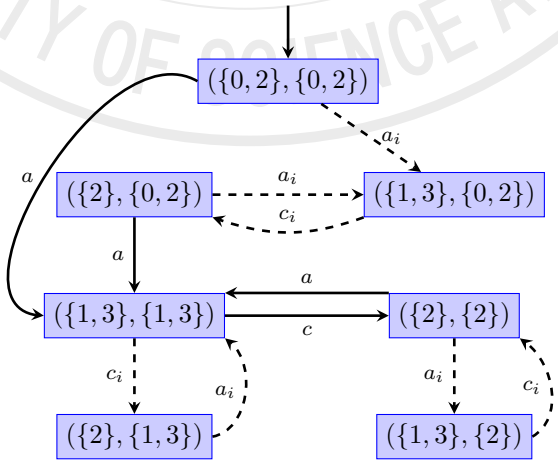

Fig. 2.4: Indicator automaton and verifier of the NFA in Fig. 2.3

2.2 An example of table

The table title is at the top of the table.

Table 2.1: A table.

Class[a]	γ_1	γ_2[b]	$\langle\gamma\rangle$	G	$\lvert f\rvert$	θ_c
BL Lacs	5	36	7	-4.0	1.0×10^{-2}	10°
FSRQs	5	40	11	-2.3	0.5×10^{-2}	14°

Table 2.2: Another table.

i	x_i	n_i	i	x_i	n_i
1	0.5∼0.64	1	8	1.48∼1.62	53
2	0.64∼0.78	2	9	1.62∼1.76	25
3	0.78∼0.92	9	10	1.76∼1.90	19
4	0.92∼1.06	26	11	1.90∼2.04	16
5	1.06∼1.20	37	12	2.04∼2.18	3
6	1.20∼1.34	53	13	2.18∼2.38	1
7	1.34∼1.48	56			

Chapter 3 Research Method

Our approach is based on ...

The next step is to use mathematical formulas. The format of mathematical formulas is as follows.

3.1 Mathematical rigour

形式化是數學嚴密性的主要內容, 簡單地說, 形式化就是符號化。

公式的運用十分重要！

公式：式子居中，編號靠右。

Example 1:

$$e^{\pi i} + 1 = 0 \tag{3.1}$$

Example 2:

$$a^2 + b^2 = c^2 \tag{3.2}$$

If no equation number is needed, we can use double dollars at the beginning and end of the equation.

$$\cos x + \sin y = 1.$$

Example 3:

$$\binom{n}{m} = \binom{n}{n-m} = C_n^m = C_n^{n-m} \tag{3.3}$$

Example 4:

$$(a+b)^3 = (a+b)(a+b)^2 = a^3 + 3a^2b + 3ab^2 + b^3 \tag{3.4}$$

Here are more examples of mathematics equations or expression.

$$x = a_0 + \cfrac{1}{a_1 + \cfrac{1}{a_2 + \cfrac{1}{a_3 + \cfrac{1}{a_4}}}} \tag{3.5}$$

$$\frac{(x_1 x_2)}{\times (x_1' x_2') \over (y_1 y_2 y_3 y_4)}$$

$$P\left(A = 2 \middle| \frac{A^2}{B} > 4\right)$$

$$M = \begin{bmatrix} \frac{5}{6} & \frac{1}{6} & 0 \\ \frac{5}{6} & 0 & \frac{1}{6} \\ 0 & \frac{5}{6} & \frac{1}{6} \end{bmatrix}$$

$$M = \begin{array}{c} \\ A \\ B \end{array} \begin{array}{c} \begin{array}{cc} x & y \end{array} \\ \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} \end{array}$$

$$f(n) = \begin{cases} n/2 & \text{if } n \text{ is even} \\ -(n+1)/2 & \text{if } n \text{ is odd} \end{cases}$$

$$\binom{n}{r} = \frac{n!}{r!(n-r)!}$$

Here are some logic expressions:

$$(\forall s \in \overline{K})(\forall \sigma \in \Sigma)(\forall s' \in \overline{K}) s\sigma \in L(G) \,\&\, s'\sigma \in L(G) \,\&\, Ps = Ps' \implies s' \in \overline{K}.$$

For more details about mathematics equations or expressions, see https://en.wikibooks.org/wiki/LaTeX/Mathematics.

Chapter 4 An example

An example of the Algorithm 1.

Algorithm 1: identifyRowContext

Input: r_i, $Backgrd(T_i)$=$T_1, T_2, \ldots, T_n$ and similarity threshold θ_r
Output: $con(r_i)$

```
con(r_i) = Φ;
for j = 1; j ≤ n; j ≠ i do
    float maxSim = 0;
    r^maxSim = null;
    while not end of T_j do
        compute Jaro(r_i, r_m);
    con(r_i) = con(r_i) ∪ r^maxSim;
return con(r_i);
```

There are many sources for Latex editing, see https://latexref.xyz/.

Chapter 5 Conclusions

結論由研究結果引伸而來，相同的研究結果，不同的研究者可能引伸出不同的結果，作者可表達對此結果具有的理論和實際價值的看法, 具體要求如下：

（1）包括研究過程中所遇到或引發的種種現象思考、根據研究成果，提出解決問題的方向，以及未來值得研究的方向。

（2）結論要根據論文寫出總結性內容，觀點需具體明確，要有自己的創見。

（3）應直接回答研究問題。論據充分，層次清楚，觀點明確，要點分明，評論合理可信。提示進一步研究的問題，交待本研究是否具體可行，提示亟待改進之處，詳細地交待研究限制。建議應具參考價值。

Review the main research purpose or hypothesis, discuss whether the results meet the expectations, and briefly explain the reasons.

Summarize the main research results, discuss the consistency or inconsistency with other scholars' conclusions and the reasons.

Point out the limitations of the research and the possible impact of the limitations.

Point out the theoretical significance or potential engineering application value of the results.

References

[1] M. Fang, “A journey to the west,” *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, vol. 46, no. 1, pp. 23–45, 2019.

[2] M. Wang, and S. Li, A journey to the west,” *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, vol. 46, no. 1, pp. 23–45, 2019.

[3] L. Zhao, Q. Liu, and B. Yang, “A journey to the west,” *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, vol. 46, no. 1, pp. 23–45, 2019.

[4] L. Zhao, Q. Liu, and B. Yang, “A journey to the east,” in *Proc. IEEE International Conference on Systems, Man, and Cybernetics*, Bari, Italy, Oct. 2020, pp. 345–349.

References are ordered alphabetically by the first author’s last name. If the first item is the same, check the last name of the second author, and so on. If two papers shared the same author list, the paper first listed is the one published earlier.

Appendix

主要是冗長結論如定理的證明, 以及實驗中裝置的冗長描述及參數等。

A.1 An appendix

Acknowledgements

I would like to express my deep gratitude to Professor xxx and Professor xxx, my research supervisors, for their patient guidance, enthusiastic encouragement and useful critiques of this research work.

I would also like to extend my thanks to the technicians of the laboratory of the xxx department for their help in offering me the resources in running the program. Finally, I wish to thank my parents and brothers for their support and encouragement throughout my study.

Your Name
The Institute of Systems Engineering
YYYY/MM/DD

Resume

<table>
<tr><td colspan="2">姓　　名</td><td>Your name</td><td>入　學　時　間</td><td>2014.09</td></tr>
<tr><td rowspan="2">教育背景</td><td>起　止　年　月</td><td colspan="2">就　讀　學　校</td><td>取　得　學　位　名　稱</td></tr>
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2014.09–2017.06</td><td colspan="2">ＸＸＸ大學
ＸＸＸ大學</td><td>ＸＸ學士學位
ＸＸ碩士學位</td></tr>
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