论文写作指导

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课程简介

1. 任课老师：廖清、漆舒汉
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2. 参考教材及课程
   - 研究生学术道德与学术规范百问，复旦大学出版社
   - 如何写好研究生学位论文，哈工大徐文福
   - 研究生如何造就优秀的学术论文，清华大学高飞飞
   - Stanford: Writing in the Sciences
   - 本课程考核制度

教学目标、设计及课程安排

课程目的就是要解决学生们以下疑问：

- 为什么要学习这门课程？我能从本门课程学到什么？
- 什么是研究生的能力建设？
- 如何训练科研和学术论文写作能力？
- 如何撰写符合哈工大写作规范的学位论文
- 什么是学术道德规范？如何避免学术不端？

教学目标、设计及课程安排

课程设计及安排：共16学时

理论指导

哈工大学术/学位论文写作及答辩

- 共计8学时
- 从选题、写作内容、答辩三方面进行理论指导

哈工大学位论文写作规范&学术道德规范指导

- 共计8学时
- 从格式规范和道德规范两方面进行理论指导

案例讨论

优硕博案例

失败案例

国家出台学术不端行为标准

◆ 哈工大学术/学位论文写作及答辩

一、基本常识与基本要求

二、学术/学位论文的逻辑思路与框架

三、如何写好学术/学位论文

四、如何做好会议汇报/学位答辩

上半章

哈工大学术/学位论文写作及答辩

廖清

三、如何写好学术/学位论文

1. 论文撰写流程

论文章节	撰写顺序	备注
摘要（Abstract）	5	最后写，突出成果、意义
引言（Introduction）	4	获得满意结果，可以开始撰写
相关工作（Related Work）	4	获得满意结果，可以开始撰写
方法（Method）	1	基本确定数学模型就可以开始撰写，跑实验时可以继续完善，**需要不停修改**，花费时间最多的部分
实验（Experiments）	2	跑实验时开始撰写，先介绍数据集、实验设置、规划实验方向
结论（Conclusion）	3	获得满意结果，可以开始撰写

三、如何写好学术/学位论文

1. 论文撰写流程

一篇论文至少大改3遍，一般5-6遍的论文修改

- 初稿，只是把内容写出来，基本没法看
- 第二遍，逐句修改，每一句话的用词都要斟酌
- 第三遍，通读全文，确保逻辑通顺，修改语病
- 可以进行投稿，等待评审意见
- 补实验，完善模型，增加讨论

（冷静期）

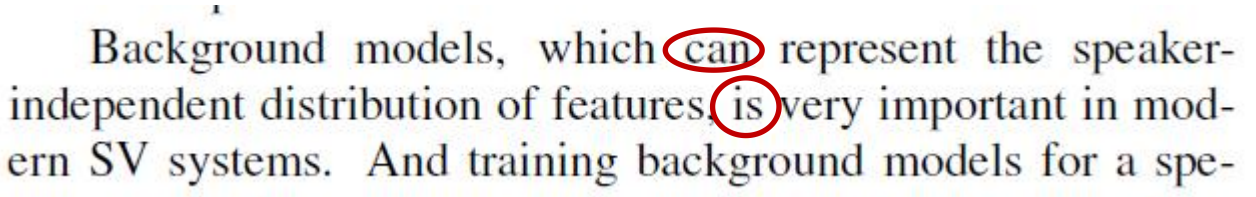
- 第四遍，隔一段时间重读论文，再进行大改

三、如何写好学术/学位论文

2. 撰写学术论文需要注意的地方

初学者也能够自己解决的错误

- 一个句子中出现多个谓语


Background models, which can represent the speaker-independent distribution of features, is very important in modern SV systems. And training background models for a spe-

- 单复数错误
- 参考文献格式错误: Google, Baidu 找的Bibtex 格式有错误，需要自己手动修改，根据选定的期刊、会议进行文献格式统一。

  [作者、标题、刊物/会议名称、卷号、页数、月份、年份]

三、如何写好学术/学位论文

2. 撰写学术论文需要注意的地方

论文写作的四个目标：

- 清晰（Clear）：看得懂
- 有针对性（Objective）：每句话要有目的性，不是废话
- 精准（Accurate）：描述事物要精准
- 简明（Concise）：句式要短

复杂的idea不一定要用复杂的语言，让读者enjoy to read

句子越长越看不懂
一篇文章，句子的平均长度一般在12-17字左右较为合适。

三、如何写好学术/学位论文

3. 撰写学术论文的铁律

不要冗余:初写者容易把论文写的又长又难懂

- 段落和逻辑冗余
  - 一个或多段话如果能合成一段，且不影响意思表达就合成一段
- 句子冗余
  - 如果删掉之后，不影响整个句子的表达，这个词就是多余的

I have only made this letter rather long because I have not had time to make it shorter
-Lettres provinciales, 1965

3. 撰写学术论文的铁律

➢ 论文写作-不要冗余

Speaker Verification (SV) is widely and successfully used in many applications (e.g., user identification), which needs higher levels of security and flexibility. SV aims to verify whether a speech input corresponds to a specific speaker, based on the speaker's known utterances.

Background models, which can represent the speaker-independent distribution of features, are very important in modern SV systems. And training background models for a specific user typically consumes a large amount of speaker data from different speakers. The traditional method for training an efficient background model for SV is conventional user-server based speaker verification, where user data are aggregated and utilized on centralized servers. This mean that the server has the access to speech patterns of all users' who participate, which is ripe with privacy risks. The privacy problem in SV should be paid more attention than in the traditional method of authentication because speech pattern is non-revocable, and privacy compromised. Regulations, e.g., EU General Data Protection Regulation (GDPR), preclude uploading speech data of speakers to a server and utilizing them in a centralized approach. Thus, SV faces two challenges: data scarcity and data privacy.

185个字，两段话

Speaker verification aims to verify whether a speech belongs to a specific speaker based on speakers' utterances. However, traditional speaker verification systems require to collect a large amount of user data from multiple mobile clients to train an efficient speaker verification model in a center server. With the General Data Protection Regulation(GDPR), California Consumer Privacy Act(CCPA) and China's Cyber Security Law have been proposed by European Union, United States and China, respectively. It becomes illegal to aggregate speakers' records and train a speaker verification model in a third-party due to patterns of speakers are sensitive and private. Therefore, existing speaker verification models face data scarcity and privacy leakage problem.

109个字，一段话

三、如何写好学术/学位论文

3. 撰写学术论文的铁律

- 论文写作-不要冗余

"This paper provides a review of the basic tenets of cancer biology study design, using as example studies that illustrate the methodologic challenges or that demonstrate successful solution to the difficulties inherent in biological research."

↓

"This paper ~~provides a~~ review~~of the basic tenets of~~ cancer biology study design, using ~~as~~ example ~~studies~~ that illustrate the ~~methodologic~~ challenges ~~or that demonstrate successful~~ solution ~~to the difficulties inherent in biological research~~."

s

and

↓

修改后

"This paper reviews cancer biology study design, using examples that illustrate specific challenges and solutions."

3. 撰写学术论文的铁律

- 论文写作-不要冗余

“Anti-inflammatory drugs may be protective for the occurrence of Alzheimer’s Disease.”

↓

“Anti-inflammatory drugs may ~~be protective for the occurrence~~ protect against of Alzheimer’s Disease.”

↓

修改后

“Anti-inflammatory drugs may protect against Alzheimer’s Disease.”

3. 撰写学术论文的铁律

- 论文写作-不要冗余

"The expected prevalence of mental retardation, based on the assumption that intelligence is normally distributed, is about 2.5%"

↓

"The expected prevalence of mental retardation, ~~based on the assumption that~~ intelligence is normally distributed, is about 2.5%"

↓

修改后

"The expected prevalence of mental retardation, if intelligence is normally distributed, is about 2.5%."

3. 撰写学术论文的铁律

- 论文写作-不要冗余

长版	短版
A majority of	most
A number of	many
Are of the same opinion	agree
Less frequently occurring	rare
All three of the	the three
Due to the fact that	because
Give rise to	cause
Have an effect on	affect

3. 撰写学术论文的铁律

- 论文写作-不要冗余

信息量很少的句子
As it is well known
As it has been shown
It can be regarded that
It should be emphasized that
Basic tenets of

信息量很少的副词
Very, really, quite, basically, generally, etc.

三、如何写好学术/学位论文

4. 撰写学术论文的一般性建议

- 论文写作-少用被动语态（不是不用）
- 主动语态可以缩短句子长度，并且使读者更感兴趣

It is found that xxx

We find that xxx

句式更短，语气更肯定

读者容易抓住你的工作部分

4. 撰写学术论文的一般性建议

- 论文写作-少用否定词组
- 句子更短，语义更直接

Not honest	Dishonest
Not harmful	Safe
Not important	Unimportant
Does not have	Lacks
Did not remember	Forgot
Did not pay attention to	Ignored
Did not succeed	failed

4. 撰写学术论文的一般性建议

- 论文写作-少用否定词组
- 句子更短，语义更直接

She was not often right.

↓

She was usually wrong.

She did not want to perform the experiment incorrectly.

↓

She wanted to perform the experiment incorrectly.

4. 撰写学术论文的一般性建议

- 论文写作-减少不必要的“There are/there is”

There are many ways in which we can arrange the xx

↓

We can arrange the xx in many ways

用这种句式要注意不要出现多个谓词

There are many researchers who like to write

↓

Many researchers like to write

The data confirm that there is an association between xx and xx.

↓

The data confirm an association between xx and xx.

三、如何写好学术/学位论文

5. 撰写学术论文其他注意事项

论文写作-必备工具

C:\Users\Nature\OneDrive\Finished Work\Publish Work\[2015 ICDM]LogdetNMF\lds-icdm_8pages.tex - TeXstudio

File Edit Idefix Tools LaTeX Math Wizards Bibliography Macros View Options Help

Structure

lds-icdm_8pages.tex

- LABELS
- BIBLIOGRAPHY
- Introduction
- NMF Variants
- LogDet Divergenc…
- Experiments
- Conclusion
- Acknowledgement
- Appendices

lds-icdm_8pages.tex

```
\documentclass[conference]{IEEEtran}

\usepackage{times}
\usepackage{graphicx}
\usepackage{amsmath,amsfonts,amssymb}
\usepackage{algorithm,algorithmic}
\usepackage{multirow}
\usepackage{subfigure}
\usepackage{hyperref}
\usepackage{epstopdf}
\usepackage{url}

\epstopdfsetup{update}
\newtheorem{definition}{Definition}
\newtheorem{lemma}{Lemma}
\newtheorem{theorem}{Theorem}

\title{Logdet Divergence Based Sparse Non-negative Matrix Factorization for Stable
Representation}

\author{
    \IEEEauthorblockN{Qing Liao{\small $~^{1}$}, Naiyang Guan{\small $~^{2}$}, Qian
    Zhang{\small $~^{1}$}}
    \IEEEauthorblockA{\itshape$^{1}$\,Department of Computer Science and Engineering, The Hong
    Kong University of Science and Technology}
    \IEEEauthorblockA{\itshape$^{2}$\,Science and Technology on Parallel and distributed
    Processing, College of Computer, National University of Defense Technology}
    \IEEEauthorblockA{\ttfamily qnature@ust.hk, ny\_guan@nudt.edu.cn, qzhang@ust.hk}
}
```

Logdet Divergence Based Sparse Non-negative Matrix Factorization for Stable Representation

Qing Liao [1], Naiyang Guan [2], Qian Zhang [1]
[1] *Department of Computer Science and Engineering, The Hong Kong University of Science and Technology*
[2] *Science and Technology on Parallel and distributed Processing, College of Computer, National University of Defense Technology*
qnature@ust.hk, ny_guan@nudt.edu.cn, qzhang@ust.hk

```
\begin{equation}\label{eq:5}
\mathop{\min}\limits_{W\in{\rm{R}}_+^{m\times r},H\in{\rm{R}}_+^{r\times
n}}\sum\limits_{i=1}^m{\sum\limits_{j=1}^n{(1-g({X_{ij}}-\sum\limits_{k=1}^K{{U_{ik}}{V_{jk}},\
sigma}))}},
\end{equation}
```

$$\min_{W\in\mathrm{R}_+^{m\times r},H\in\mathrm{R}_+^{r\times n}} \sum_{i=1}^{m}\sum_{j=1}^{n}(1-g(X_{ij}-\sum_{k=1}^{K}U_{ik}V_{jk},\sigma)), \quad (5)$$

5. 撰写学术论文其他注意事项

论文写作-三大要素

不会因为语法拒稿，一定会因为逻辑拒稿

三、如何写好学术/学位论文

5. 撰写学术论文其他注意事项

论文写作-结果展示很重要

- 每个实验结果都要有解释和结论，反常现象要讨论
- 根据你想要展示的重点，有意识的选择更美观和直观的方式展示图表
- 展示结果需多样性

三、如何写好学术/学位论文

5. 撰写学术论文其他注意事项

论文写作-文字处理

- 新在哪：新材料、新现象、新方法、新原理、系统集成、组合借鉴
- 实验有讨论，结果有提升
- 无法解释的部分，进行合理假设
- 找几篇可以借鉴的文章风格，进行模仿
- 反复修改

三、如何写好学术/学位论文

6. 投稿注意事项

- 找发表过和你相关论文的会议和期刊，调研期刊和会议接收情况
- 返修很正常，认真对待审稿人的意见，审稿人提出的任何问题都不能回避和忽略，对待审稿人态度尊敬
- Cover Letter: 强调创新性
- Conflicts: 审稿人不要是同单位或者是你的合作者

三、如何写好学术/学位论文

8. 撰写学术论文需要不停的训练

论文写作训练

- 针对逻辑、语气、语法不停的修改，让自己的文章目的地更强
- 硕士期间能够自己撰写论文的次数不多，不论写的多差，都要抓住机会锻炼
- 博士生要把论文写作训练成一种本能