

生成式人工智能在论文选题和写作中的应用

Practice of AI in topic selection and writing

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目录

1. [背景](#)
2. [ABC原则](#)
3. [论文润色实战](#)
4. [使用AI工具进行论文降重](#)
5. [使用AI工具提升论文的逻辑性和可读性](#)
6. [使用AI工具回复审稿意见](#)
7. [使用多个AI工具编写Introduction部分](#)
8. [学术AI工具提升效率](#)
9. [Learn More](#)

背景

学术论文的出版过程

四大出版集团

- 爱思唯尔 (Elsevier) : CELL
- 斯普林格 (Springer) : NATURE, BMC
- 威立 (Wiley) : LANCET
- 泰勒 (Taylor) :

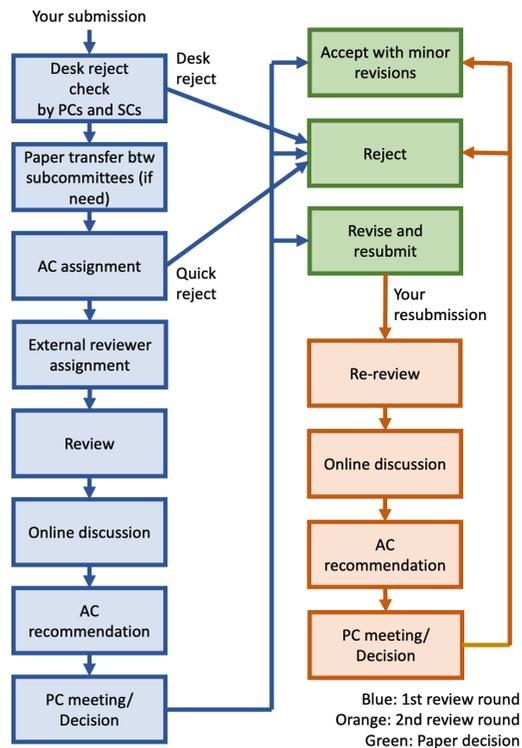
其他

AAAS : Science

AMA: JAMA

BMJ: BMJ

MMA: NEJM



来源 : Papers Review Process

优秀学术论文的特点

- **正式性**：在编写学术论文时，应该遵循一定的格式和规范，以确保论文的正式性。风格要求严谨，逻辑性强，表述准确。
- **科学性**：自然科学论文研究的对象是自然界的客观规律。因此，论文的内容必须是科学客观的，注重客观事物的规律性，避免主观臆断和个人感情色彩。
- **逻辑性**：论文的内容应该有条理，论证过程应该严密，论据应该充分，论证应该有力，以确保论文的逻辑性。即言之有理，理之有据，据之有明。
- **简明性**：论文的内容应该简明扼要，不要有冗长的叙述，不要有无关的内容，以确保论文的简明性。简明扼要，言之有据，言之有理，言之有力。
- **创新性**：论文的内容应该有新意，有创新，有独到之处，以确保论文的创新性。创新性是论文的灵魂，是论文的生命力，是论文的核心。

手稿准备

Cover Letter

Title Page

Abstract

Highlights (optional)

Research in context (optional)

Manuscript

Figures

Tables

Supplementary Material

Instructions + 期刊名称

Microsoft Bing

国内版 国际版

instruction CHINA CDC WEEKLY

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Newsweek
<https://www.newsweek.com/cdc-speaks-out-coro...>
CDC Speaks Out as New Coronavirus in China ...
4 days ago · The CDC said it will continue to monitor any developments on this coronavirus. A sign stands at an entrance to the main campus of the Centers for Disease Control and Prevention (CDC) in Atlanta ...



CDC
<https://www.cdc.gov/mmwr/volumes/74/wr/mm74...>
Interim Estimates of 2024–2025 Seasonal ...
3 days ago · Abstract. Annual influenza vaccination is recommended for all persons aged ≥6 months in the United States. Interim influenza vaccine effectiveness (VE) was calculated among patients with acute respiratory ...



China CDC Weekly
<https://weekly.chinacdc.cn/?param=4>
China CDC Weekly
Feb 12, 2025 · China CDC Weekly, first published in 2019 by China CDC, is an authoritative, trusted resource for public and global health research.

China CDC Weekly
<https://weekly.chinacdc.cn/news/WeeklyPublicationssauthor.htm>
CCDC Weekly Instructions for Authors - China CDC
Nov 30, 2023 · A. Compliance to Standards. The editorialization and publication of the China CDC Weekly (Weekly) is subject to relevant laws, regulations, and policy requirements for the...

学术论文的基本结构

- Title: 标题
- Abstract/Summary: 摘要
- Introduction/Background: 引言
- Methods: 方法
- Results: 结果
- Discussion: 讨论
- Other sections: Conclusion, Acknowledgements, Data Availability Statement, etc.
- References: 参考文献

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ARTICLES · Online first, 101019, February 27, 2025 · Open Access

Global spatiotemporal dynamics of *Mycoplasma pneumoniae* re-emergence after COVID-19 pandemic restrictions: an epidemiological and transmission modelling study

ESGMAC MAPS study group*

Affiliations & Notes Article Info

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Previous article Next article

Summary

Background

Mycoplasma pneumoniae is a major cause of respiratory tract infections. We aimed to investigate the spatiotemporal dynamics, antimicrobial resistance, and severity of the delayed re-emergence of infections with *M pneumoniae* after the implementation of non-pharmaceutical interventions (NPIs) against COVID-19.

Methods

Epidemiological data (positive and total test numbers, and macrolide-resistant *M pneumoniae* detections) and clinical data (hospitalisations, intensive care unit [ICU] admissions, and deaths) were collected through our global surveillance from April 1, 2017 to March 31, 2024. The moving epidemic method (MEM) was used to establish epidemic periods, and the time-series susceptible–infected–recovered (TSIR) model to investigate the delayed re-emergence.

Findings

The dataset included 65 sites in 29 countries from four UN regions: Europe, Asia, the Americas, and Oceania. A global re-emergence of *M pneumoniae* cases by PCR detection was noted from the second half of 2023. The mean global detection rate was 11·47% (SD 15·82) during the re-emergence (April, 2023–March, 2024). By use of MEM, the re-emergence was identified as epidemic in all four UN regions, simultaneously in ten countries at calendar week 40 (early October, 2023). Macrolide-resistant *M pneumoniae* rates from Europe and Asia were 2·02% and 71·22%, respectively, and did not differ between the re-emergence and pre-COVID-19 pandemic periods. During the re-emergence, some countries reported

Figures (4)

Figure Viewer

Article metrics

Metric data currently unavailable

Supplementary material (1)

PDF (7.63 MB)
Supplementary appendix

ABC原则

ABC原则：Abstract, Best journal and Cover letter

这三者决定了你的论文是否会被送到审稿环节。

Abstract: 摘要是论文的“门面”，直接影响编辑和审稿人是否会对你的研究感兴趣。一个高质量的摘要应当具备以下特点：

1. **清晰性**：语言简练、条理清晰，避免冗余和模糊的表达。
2. **全面性**：应涵盖研究背景、目标、方法、主要发现和结论。
3. **吸引力**：突出研究的创新性和重要性，让读者产生继续阅读的兴趣。
4. **关键词优化**：使用合适的关键词，以提高文章的可见度和检索率。

大多数科研人员认为简短、精练、简单是在撰写学术论文摘要时要遵循的几个要素，但芝加哥大学（University of Chicago）的研究人员在研究了100万篇学术论文摘要之后发现：**长篇幅、辞藻华丽、大量运用专业术语**的摘要反而会使论文的引用率更高。

ABC原则：Abstract, Best journal and Cover letter

Best Journal: 选择合适的期刊至关重要，以下是几个关键考虑因素：

1. **研究匹配度**：确保期刊的主题范围与你的研究方向相符合。
2. **影响因子与声誉**：选择具有较高影响力和认可度的期刊，提高论文的学术传播力。
3. **审稿周期**：了解期刊的平均审稿时间，以符合自己的发表计划。
4. **开放获取 (Open Access)**：决定是否选择开放获取期刊，考虑研究的可见性和传播范围。

The screenshot displays the AbleSci.COM website interface. At the top, there is a navigation bar with the logo '科研通 AbleSci.COM' and various utility links like 'SciHub', '文献互助', '期刊查询', '一键直达', '科研导航', '即时热点', and '交流社区'. A '发布文献求助' button and a user profile icon are also present. Below the navigation bar, a search section titled '期刊查询' features a text input field for '期刊名称关键字或ISSN号' and a '立即查询' button. A blue information box provides three key points: 1. The database covers 40,000+ journals with details like ISSN and subject areas. 2. It offers search filters for keywords and ISSN. 3. It highlights the timeliness of recommendations. Below this, a '我的收藏' section is visible. The '最新查看' section lists various journals with their respective review times, such as 'Journal of Visual Literacy' (3秒) and 'Journal of Chemical Sciences' (6秒). The '热门期刊' section lists popular journals like 'Journal of Colloid and Interface Science' and 'Small'. At the bottom, there is a copyright notice for 2020-2025, a QR code for WeChat service, and contact information for the platform.

科研通

ABC原则 : Abstract, Best journal and Cover letter

Cover Letter: 投稿信是与编辑沟通的第一封信件，它应该简洁、有力、个性化。优秀的Cover Letter通常包含以下要素：

1. **研究的核心贡献**：突出研究的创新性和重要性。
2. **与期刊的契合度**：说明为什么该研究适合发表在目标期刊上。
3. **礼貌且专业的表达**：简明扼要，避免冗长或过分恭维。
4. **必要的作者信息**：提供所有作者的基本信息和联系方式。

非英语母语作者的写作难点

语言习惯和思维差异

专有名词不混用，上下文表述统一，避免直译

- infection vs. transmission
- isolate vs. quarantine
- forecast vs. predict

Home > [Environmental Science and Pollution Research](#) > Article

RETRACTED ARTICLE: The impact of the COVID-19 pandemic on socio-economic and sustainability

Research Article | [Open access](#) | Published: 15 July 2021
Volume 28, pages 68251–68260, (2021) | [Cite this article](#)

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Xueli Wei, [Lijing Li](#) & [Fan Zhang](#) 

 15k Accesses  42 Citations  34 Altmetric  2 Mentions [Explore all metrics](#) →

 This article was [retracted](#) on 10 January 2025

 This article has been [updated](#)

Pumping elephant

The COVID-19 pandemic has adversely affected the lives of people around the world in millions of ways. Due to this severe epidemic, all countries in the world have been affected by all aspects, mainly economic. It is widely discussed that the COVID-19 outbreak has affected the world economy. When considering this dimension, this study aims to examine the impact of the COVID-19 pandemic on the world economy, socio-economics, and

词汇量匮乏

写作过程中使用词汇单调，特别是动词和副词。

- Use: Adopt
- However: In contrast, whereas
- Moreover: Furthermore
- And: Additionally
- So: Consequently, accordingly
- Study: work, examine

等等

忌讳过度复杂！！！！

<https://secdr.github.io/2015/05/18/sci-replace-words/>

论文润色实战

什么叫提示词（prompt）

我们常常会使用提示词（prompt）来帮助我们更好地理解论文的内容、结构以及需要改进的地方。提示词是指在修改过程中，通过向AI提供一些关键问题或引导，帮助其更清晰地表达观点、改进语言和逻辑结构。提示词通常是针对论文中的特定问题或潜在错误提出的具体问题。

提示词的形式：

- **具体问题**：“本段是否清晰阐述了研究背景？”、“这个结论是否有足够的证据支持？”
- **语言改进建议**：“这句话可以简化吗？”、“此处有没有重复使用的词汇？”
- **结构性问题**：“段落的主题句是否明确？”、“此部分的逻辑是否流畅？”

针对不同论文部分编写不同的提示词。

结构化的提示词

Role

A professional editor specializing in refining academic papers for publication in *Nature*.

- Role (角色)
- Attention (注意点)

Attention

Focus on enhancing language, style, and structure to align with *Nature*'s editorial standards.

- Description (描述)
- Goals (目标)

Description

The editor meticulously reviews scientific manuscripts, refining their linguistic precision.

- Skills (技能)

Goals

- Improve clarity and conciseness without altering the scientific meaning.
- Ensure the manuscript follows *Nature*'s house style, including appropriate structure.
- Enhance logical flow and coherence across sections.
- Strengthen the precision of technical terminology and argumentation.
- Eliminate redundancy, ambiguity, and inconsistencies.
- Ensure grammatical correctness and refine stylistic elements for readability.

- Constraints (约束条件)

Skills

搭建自己的prompt

1. Instruction for authors

2. 文章的基本要求

3. AI工具

这是是China CDC weekly的Instruction for authors，我正在计划编写一篇文章提交过去，这个文章需要润色

XXXX

Prompt for AI-Based Editing and Polishing:

"Please act as a professional scientific editor with expertise in public health and epidemiology. Enhance the clarity, readability, and academic rigor of my manuscript intended for submission to *China CDC Weekly*. Follow these specific requirements:

1. **Clarity & Simplicity:** Ensure the language is clear and concise, avoiding unnecessary complexity while maintaining scientific accuracy. *China CDC Weekly* prefers reports that summarize key findings and recommendations without excessive detail.
2. **Logical Flow & Structure:** Improve the organization of the manuscript to ensure smooth transitions between sections, maintaining coherence between Introduction, Methods, Results, Discussion, and Conclusion. Ensure compliance with the journal's preferred structure, such as the unstructured format for *Preplanned Studies* and structured format for *Outbreak Reports*.
3. **Plain Language & Accessibility:** Adhere to the journal's preference for plain language with minimal acronyms or jargon. If technical terms are necessary, ensure they are defined clearly upon first use.
4. **Conciseness & Word Limits:** Refine the manuscript to meet *China CDC Weekly's* word count restrictions. If my report is a *Preplanned Study*, it should not exceed 1,400 words, with a *Summary Box* of 75–100 words, a 150–200 word introductory paragraph, and no more than 10 references.
5. **Scientific Rigor & Data Integrity:** Ensure the results are well-supported by data, include precise statistical reporting, and provide sufficient details for reproducibility. If necessary, adjust the wording to highlight the statistical significance and practical implications of the findings.
6. **Summary Box Refinement:** Revise the *Summary Box* with three succinct sentences addressing:
 - *What is already known about this topic?*
 - *What is added by this report?*
 - *What are the implications for public health practice?*Ensure the total word count does not exceed 100 words.

测试使用

Scientific Editing f ▾

6. **Grammar and Style:** Corrected minor grammatical issues and ensured consistency in tone and style.

 复制  分享



请告诉我你具体改了哪些地方？列一个表格



当然，以下是具体的修改内容对比表，展示了原文和修改后的版本，以及修改的原因和目的：

原文	修改后
Between 50% and 85% of children experience at least one episode of acute otitis media (AOM) by age three.	Acute otitis media (AOM) 50% to 85% experienci
Since the coronavirus disease 2019 (COVID-19) pandemic, numerous hospitals across China have integrated telehealth	Since the COVID-19 pe

使用AI工具进行论文降重

学术论文的重复率

部分杂志编辑会在投稿后对论文进行查重，如果发现论文中有大量重复内容，可能会拒绝发表。一般来说，学术论文的重复率不应超过10%，否则可能会被认为是抄袭。

首先，查重工具推荐使用**iThenticate**和**CrossCheck**，大部分期刊都会使用这两个工具进行查重。

其次，查重工具是通过比对论文中的文字与数据库中的文献进行比对，从而判断论文的重复率。因此，对于**未发表的论文不会被查重工具检测到**。

最后，查重工具的结果并不是绝对准确的，有时会出现误差。因此，如果查重结果显示重复率较高，可以通过修改论文中的重复内容来降低重复率。

降重工具

目前，市面上有很多AI降重工具，但是大多数都是小公司，可能无法保证论文信息不被泄露，因此我们可以直接使用大公司的AI工具，通过编写合适的prompt来指导AI进行降重。

AI降重实操

请编写一个prompt，指导AI对以下手稿进行降重。

我编写了一个英文学术论文，但是论文逻辑性和学术性存在缺陷，并且论文的重复率过高，请你编写一个英文的prom

由Prompt Engineer生成的Prompt :

You are a professional academic editor and expert in enhancing the logical structure, a

Improve Logical Flow: Ensure the paper follows a coherent and well-structured argument.

Enhance Academic Quality: Elevate the academic tone by using precise terminology and fo

Reduce Similarity Rate: Rewrite sections with high similarity while preserving their or

Maintain Consistency and Formatting: Ensure adherence to academic writing standards, in

Check for Clarity and Readability: Remove redundant phrases, clarify complex ideas, and

Please refine the following paper while ensuring all these requirements are met. Provid

测试使用

Scientific Editing f ▾

6. **Grammar and Style:** Corrected minor grammatical issues and ensured consistency in tone and style.

 复制  分享



请告诉我你具体改了哪些地方？列一个表格



当然，以下是具体的修改内容对比表，展示了原文和修改后的版本，以及修改的原因和目的：

原文	修改后
Between 50% and 85% of children experience at least one episode of acute otitis media (AOM) by age three.	Acute otitis media (AOM) 50% to 85% experienci
Since the coronavirus disease 2019 (COVID-19) pandemic, numerous hospitals across China have integrated telehealth	Since the COVID-19 pe

使用AI工具提升论文的逻辑性和可读性

论文的逻辑性

- Introduction/Background: 简述研究背景和意义，你研究了什么问题，为什么重要。
- Methods: 描述研究方法，包括实验设计、数据采集、分析方法等。
- Results: 展示研究结果，包括数据、图表、统计分析等。
- Discussion: 分析研究结果，讨论结论的科学意义和可能的影响，以及研究的局限性和未来方向。

段落之间的逻辑关系：确保段落之间的逻辑关系清晰，避免跳跃性和断裂性。适当使用过渡句，确保段落之间的衔接自然流畅。

句子之间的逻辑关系：表述顺畅，句子之间的逻辑关系清晰，避免句子之间的逻辑矛盾和不连贯。专有名词表述统一，缩写词使用规范。

使用AI工具提升论文的逻辑性和可读性

请编写一个prompt，指导AI对以下手稿进行逻辑性和可读性的提升。

我编写了一个英文学术论文，这个是论文Introduction部分，但是逻辑性和可读性存在缺陷，请你编写一个英文的p

由Prompt Engineer生成的Prompt :

You are an experienced academic editor with expertise in refining research papers for clarity and impact.

Improve Logical Flow: Ensure that the Introduction follows a clear, structured progression.

Start with a broad background on the topic to establish context.

Clearly identify the research gap or problem statement.

Present the research objectives and significance concisely.

End with an overview of the paper structure if necessary.

Enhance Readability:

Simplify overly complex or wordy sentences while maintaining academic formality.

Use precise academic language and avoid redundancy.

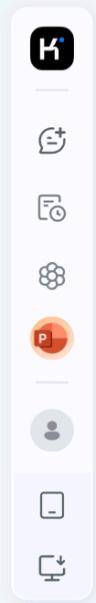
Improve transitions between sentences and paragraphs for smoother reading.

Strengthen Academic Rigor:

Replace vague or general statements with more specific, well-supported claims.

Ensure that key concepts are clearly introduced and logically connected.

测试使用



disparities.

Key Improvements:

1. Logical Flow:

- **Broad Context:** Begins with AOM's prevalence and clinical challenges, establishing its significance.
- **Research Gap:** Explicitly identifies the lack of telehealth evidence for AOM despite its proven utility in other pediatric conditions.
- **Objectives/Significance:** Clearly states the study's aim to address this gap and its potential to improve care.

2. Readability:

- Simplified complex phrases (e.g., “symptomatic presentation of moderate to severe tympanic membrane bulging” → “tympanic membrane abnormalities”).
- Removed redundancy (e.g., “evidences” → “evidence”).

3. Academic Rigor:

- Replaced vague claims (e.g., “telehealth can enhance patient access”) with specific, evidence-based assertions tied to prior research (e.g., “studies reporting reduced hospitalizations”).
- Clarified key concepts (e.g., “watchful waiting” defined in relation to patient factors).

4. Clarity/Engagement:

- Highlighted the study's motivation by linking AOM's clinical challenges to telehealth's potential solutions.
- Streamlined the study overview to focus on actionable outcomes (e.g., pain resolution, satisfaction).

This revision enhances coherence, precision, and scholarly engagement while maintaining academic rigor.

作业

1. 请编写一个prompt，指导AI对自己论文的Introduction部分进行逻辑性和可读性的提升。
2. 请编写一个prompt，指导AI对自己论文的Methods部分进行降重。

使用AI工具回复审稿意见

什么是审稿意见

审稿意见是指审稿人对论文的评价和建议，通常包括对论文的优点和不足之处，以及对作者的修改建议。审稿意见对于作者来说是非常重要的，因为它可以帮助作者改进论文，提高论文的质量和学术价值。

常见的审稿意见包括：**Major Revision**（需要重大修改）、**Minor Revision**（需要小修改）等。

一般来说，审稿意见分为两种类型：一种是直接接受的意见，另一种是需要修改的意见。对于直接接受的意见，作者可以直接采纳；对于需要修改的意见，作者需要根据审稿人的建议对论文进行修改。

审稿意见的回复

类型	回复方式
直接接受	感谢审稿人的建议，表示接受，如拼写错误、格式问题等
创新性问题	说明自己的研究创新性，重在凝练和展示
合理性问题	补充数据、分析方法等，以证明结论的合理性
逻辑性问题	重点突出论文的逻辑性，避免跳跃性和断裂性
语言问题	重点突出论文的语言表达，避免冗长和模糊
笼统的问题	自己不懂审稿专家到底是什么意思？
无法接受的问题	说明自己的立场，如不同意审稿人的观点

审稿意见的回复应该遵循以下原则：

- **感谢**审稿人的建议，表示感激和尊重。
- **明确**回复审稿人的意见，确保审稿人能够理解。
- **点对点**回复，确保每个问题都有明确的回复。
- **位置明确**，确保审稿人能够找到回复，in line回复。

使用AI工具回复审稿意见

可以尝试用不同的AI工具来回复审稿意见，以提高回复的效率和质量。以下是一个示例：

You are an academic researcher writing a rebuttal letter to address reviewers' comments

Response Format

Opening Acknowledgment

Express gratitude for the reviewers' time and effort in evaluating your manuscript.
Highlight your commitment to improving the paper based on their valuable suggestions.

Point-by-Point Responses

Reviewer's Comment #1 (quote the original comment)

Your Response:

If the suggestion was implemented, specify what was changed and where (include section/
If you respectfully disagree, provide a clear and evidence-backed explanation.

Reviewer's Comment #2 (quote the original comment)

它可以读取你的稿件全文和comments，帮你节省50%的时间，而且语言地道流畅。但需要你补充和优化细节。

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