

# 如何写文章

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## 写文章前（最重要）：

- 了解你关注的核心文章都做了什么，有什么不足（即充分的literature review）；
- 你的文章需要突出的创新点,做了哪些改进; (novelty and contributions)
- 需要做什么实验去验证你的方法的有效性 (experiments);

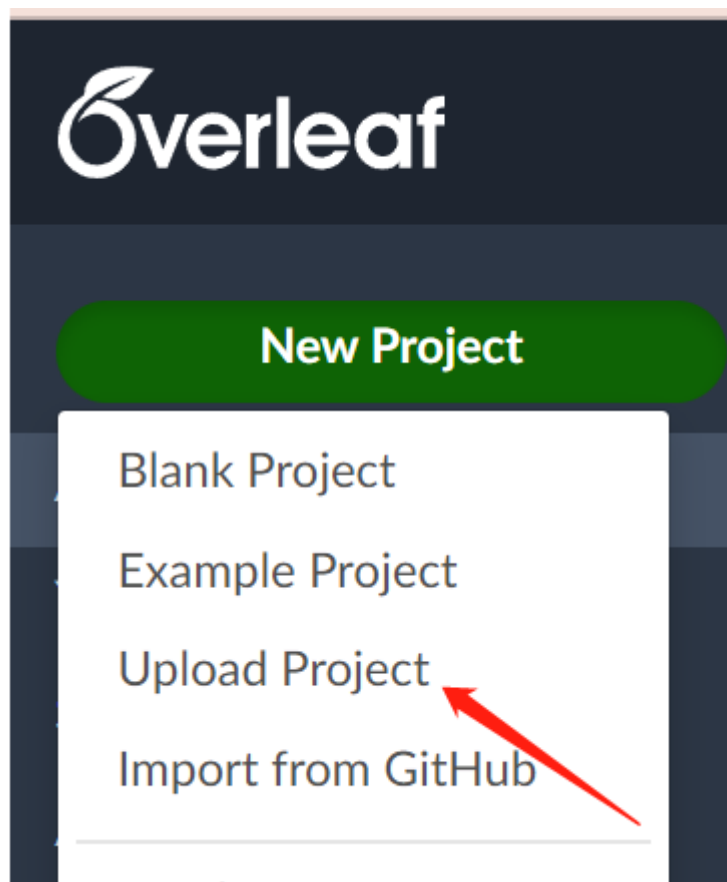
## 工作发表在哪：

[📖 实验室研究方向相关性较高的期刊与会议（投稿用）](#)


[📖 如何查看期刊分区等基本信息](#)

## 行文：

- 确定目标期刊，并去官网下载latex模板，仔细阅读格式要求，让导师建一个空白的Overleaf用于协同写作，将模板上传至Overleaf



- ；论文模板可以放置在NAS如下位置，我已经放了一个RAL的模板在里面可供参考。

public > 学术论文 > 论文模板			
新增 ▾	上传 ▾	操作 ▾	工具 ▾ 设置
名称	大小	文件类型	修改日期
 RAL_one_package_NAS.zip	21 MB	ZIP 文件	2023-09-28 17:10:24

- 有些axive的文章也会放出LaTeX源码，某些特别漂亮的图表可以注意平时积累收集，看看对方是如何编辑的
- 找到一篇跟自己做的方向内容相关性比较大的文章（一定要找目标刊物或同等级刊物上的文章，一般你关注的某篇核心文章可能就是最佳选择），仿照该文章框架划分章节（划分的时候跟导师讨论一下），再依次把自己的内容细节填入章节。
- 行文顺序：我自己的习惯是先写contribution，围绕contribution去写methods和experiments，再写introduction和related works，然后写abstract和conclusion
- 所有的claim都要有citation或者有实验证明

## 文章一般结构：

Abstract:

简短介绍背景（当前存在什么没有解决的问题）->我们采用了什么方法解决了什么问题->最后效果/结果（如：实验证明，我们的速度、精度达到了什么。）

### 1. INTRODUCTION

介绍背景->当前存在什么不足（提出问题）->你提供什么改进（解决问题）->最后总结这篇文章你的contributions

### 2. RELATED WORK

注意广度、深度、时效性；引用高的（即影响力大的）文章要提到，最近几年的文章要提到

### 3. METHODOLOGY

主要介绍你的方法，先介绍整体系统，再分点详细论述

### 4. RESULTS

仿真、对比实验、消融实验等，用来证明你contribution

### 5. CONCLUTION AND FUTURE WORK

达成了什么效果，有哪些不足，后续工作是什么

### 6. ACKNOWLEDGE

哪些朋友提供了帮助，哪些基金提供了资助

## 引用

文章调研要做到充分全面，特别是针对最近5年的工作要更加重视。如果能找到同领域相似方向的优秀文章可以仿照着写并根据你自己文章的侧重点进行related work的增减。

Tips: 针对目标期刊投稿时可以适当增加此期刊的文献引用，editor其实都希望自己期刊impact factor能比较高。

## 润色

1. 使用grammarly(<https://app.grammarly.com/>)进行单词拼写与简单语法的修改；
2. 使用ChatGPT进一步润色，如：假设你是一名机器人学家，请对下面这段话进行润色；Can you act as a robotics professor to give some comments on this academic abstract's writing; make the comments more critical
3. 完成全文后还可以尝试让ChatGPT提一下修改意见，如：假设你是一名机器人学家/xxx刊物的reviewer，请对下面这篇文章做出点评与修改意见。但是此方法不一定靠谱，要辩证的去看待。
4. 一种访问ChatGPT的方法：POE <https://poe.com/>

## 格式

1. 图表：图表是一篇文章的门面，图表做的稀烂会给reviewer留下很差的印象。重点看Science Robotics、TRO上面文章的图表格式，学习使用Visio画图，注意配色，字体大小，字体格式、图表风格统一；
2. Reference：使用dblp或Google Scholar下载BibTex，再把BibTex内容加入到Overleaf模板的xxx.bib文件中。注意严格遵守投稿文章的参考文献格式（使用对应的格式文件xxx.bst）



Google Scholar

Reaching the limit in autonomous racing: Optimal control versus reinforcement learning

Articles

Any time  
Since 2023  
Since 2022  
Since 2019  
Custom range...

Sort by relevance  
Sort by date

Any type  
Review articles

☐ include patents  
☒ include citations

Reaching the limit in autonomous racing: Optimal control versus reinforcement learning  
Y Song, A Romero, M Müller, V Koltun, D Scaramuzza  
Science Robotics, 2023 · science.org

A central question in robotics is how to design a control policy for autonomous drone racing. This paper studies this question systematically, focusing on the performance of reinforcement learning (RL) outperformed optimal control (OC). We then investigated which fundamental factors have limited OC. Our study indicates that the fundamental factors have limited OC. Our study indicates that the fundamental factors have limited OC.

SHOW MORE

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Showing the best result for this search. See all results

Cite

MLA Song, Yunlong, et al. "Reaching the limit in autonomous racing: Optimal control versus reinforcement learning." *Science Robotics* 8.82 (2023): eadg1462.

APA Song, Y., Romero, A., Müller, M., Koltun, V., & Scaramuzza, D. (2023). Reaching the limit in autonomous racing: Optimal control versus reinforcement learning. *Science Robotics*, 8(82), eadg1462.

Chicago Song, Yunlong, Angel Romero, Matthias Müller, Vladlen Koltun, and Davide Scaramuzza. "Reaching the limit in autonomous racing: Optimal control versus reinforcement learning." *Science Robotics* 8, no. 82 (2023): eadg1462.

Harvard Song, Y., Romero, A., Müller, M., Koltun, V. and Scaramuzza, D., 2023. Reaching the limit in autonomous racing: Optimal control versus reinforcement learning. *Science Robotics*, 8(82), p.eadg1462.

Vancouver Song Y, Romero A, Müller M, Koltun V, Scaramuzza D. Reaching the limit in autonomous racing: Optimal control versus reinforcement learning. *Science Robotics*. 2023 Sep 13;8(82):eadg1462.

BibTeX EndNote RefMan RefWorks

Menu Upgrade

Disturbance Observer Based Hovering Control of Quadrotor Tail-sitter VTOL UAVs Using H<sub>∞</sub> Synthesis

Code Editor Visual Editor

Figures

IEEEtran.bst

IEEEtran.cls

RAL2018\_final\_sub\_lyu.pdf

RAL2018\_final\_sub\_lyu.tex

RAL2018\_reference.bib

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930     journal={IEEE Transactions on Magnetics},
931     volume={45},
932     number={6},
933     pages={2675--2678},
934     year={2009},
935     publisher={IEEE}
936 }
937
938 @inproceedings{fan2010robust,
939     title={Robust disturbance observer design for a power-assist electric bicycle},
940     author={Fan, Xuan and Tomizuka, Masayoshi},
941     booktitle={American Control Conference (ACC), 2010},
942     pages={1166--1171},
943     year={2010},
944     organization={IEEE}
945 }
946
947 @article{yun2014design,
948     title={Design of a disturbance observer for a two-link manipulator with flexible joints},
949     author={Yun, Jong Nam and Su, Jian-Bo},
950     journal={IEEE Transactions on Control Systems Technology},
951     volume={22},

```

3. 所有简写第一次出现要写全称，并用括号标准简写，后面行文可直接用简写 Unmanned Aerial Vehicle (UAV).
4. 注意空格使用，如：
  - a. Fig. 5
  - b. Tabel. 1
  - c. Unmanned Aerial Vehicle (UAV).

5. 大小写保持一致：如所有章节都是大写

## I. INTRODUCTION

## II. MODELING AND BASELINE FEEDBACK CONTROL

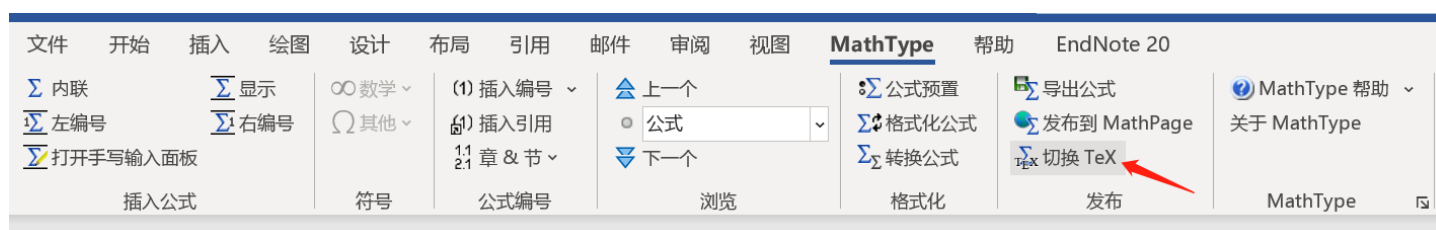
## III. DOB DESIGN

6. 前后符号定义保持一致，单个符号不能重复定义

7. 待补充

## 工作发表所需工具

1. 视频压缩: Video Compressor | Reduce Video File Size Online : [Video Compressor](#) | [Reduce Video File Size Online](#)
2. Mathtype: 可以在word中先敲公式，再把公式转成latex所需的公式（针对不太熟悉latex的同学）：



$$x_B^d = \frac{f_i}{\|f_i\|}$$

$$y_C^d = \begin{bmatrix} -\sin(\psi_d) & \cos(\psi_d) & 0 \end{bmatrix}^T$$

$$z_B^d = \frac{x_B^d \times y_C^d}{\|x_B^d \times y_C^d\|}$$

$$y_B^d = z_B^d \times x_C^d$$

$$R_d = \begin{bmatrix} x_B^d & y_B^d & z_B^d \end{bmatrix}$$

↵

\\begin{align}↵

& x\_{B}^d=\frac{{{f}\_{i}}}{\left\| {{f}\_{i}} \right\|}↵

& y\_{C}^d=\left[ \begin{matrix} \end{matrix} \right.↵

-\sin \left( {{\psi }\_d} \right) & \cos \left( {{\psi }\_d} \right) & 0 \quad \backslash↵

\end{matrix} \right]^T}↵

& z\_{B}^d=\frac{{x\_B}^d\times {y\_C}^d}{\left\| {x\_B}^d\times {y\_C}^d \right\|}↵

& y\_{B}^d={z\_B}^d\times {x\_C}^d↵

& {{R}\_d}=\left[ \begin{matrix} \end{matrix} \right.↵

{x\_B}^d & {y\_B}^d & {z\_B}^d \quad \backslash↵

\end{matrix} \right]↵

\end{align}↵

Mathtype在word/ppt中敲的公式可以直接复制到Visio中；

3. Grammarly: 简单语法与用词修正

4. POE: 接入了ChatGPT, 但是更好用 <https://poe.com/>

5. Visio: 画漂亮的流程图

6. Overleaf: 在线协同Latex, HI LAB 写学术论文指定工具

7. Croppdf: pdf文件裁剪 <https://croppdf.com/>

## 如何评价一篇文章的好坏

下图为RAL reviewer的打分表，主要从下面6个维度进度评价，

- 1. Paper contribution
- 2. Technical quality
- 3. Originality
- 4. Thoroughness of results
- 5. Adequacy of citation
- 6. Relevance to field

其它IEEE Robotics方向的期刊评价体系同上（如：[T-RO review form regular](#)）。因此，在写文章的时候应多从上述6个方面去完善内容。

ASSESSMENT/EVALUATION SECTION

\*Required field

Paper contribution*	Major
Technical quality*	Exceptional
Originality*	Major
Thoroughness of results*	Minor
Clarity of presentation*	Questionable
Adequacy of citation*	None
Relevance to field*	Good

RECOMMENDATION SECTION

\*Required field

Overall Recommendation\*

☐ Accept

☐ Revise and resubmit

☐ Reject

☐ Unsuitable due to scope

Please check if you wish to see the revision

☐

How do you rate your own level of confidence in the subject of the submission that you have been asked to review?\*

If the paper has a multimedia attachment, should this be included in the final acceptance?\*

☐ Yes

☐ No

Please enter brief comments justifying your decision about multimedia attachment.

This paper should be considered as a finalist of an RA-L best paper award\*

☐ Yes

☐ No

## 扩展阅读

[How to write a paper by Vladlen Koltun](#)

NAS讲座链接：

# 一个工作怎么投稿

- 工作可以挖的深度一般，想投完后研究其他，直接RAL，比较快速出结果
- 工作可以挖的很深，可以先做一部分投IROS、ICRA，再做一些改进后投Trans

## [Information for Authors - IEEE Robotics and Automation Society](#)

### Submitting a previously published Conference paper and the “evolutionary paradigm”:

The RA-Letters will not consider submissions that are currently under review for a conference (except under the Conference Option scheme).

In principle, RA-L may consider submissions that have been published in the Proceedings of an IEEE conference, provided that the manuscript follow the “evolutionary paradigm” of IEEE, i.e., if it incorporates substantial improvements and it openly discloses the source(s) and discusses the changes. However, because the length of a Letter is comparable to that of most Conference papers and RA-L are intended to publish novel results rapidly and concisely, application of such “evolutionary paradigm” to Letters is difficult. Submission to Transactions of an evolved version of a previous conference paper is instead considered natural. Notice that the “evolutionary paradigm” does not apply between Letters and Transactions, because they are both archival Journal publications.

## Overleaf 协同共识

同步一下修改动作：我的comment(标黄)，你如果修改好了，就在comment下回复。我确认问题解决，我来点Resolve。我的修改记录（标绿），你如果觉得有道理就Accept，觉得有问题就添加comment。同理，你的comment和修改由我来操作。