



选修课 论文阅读与写作

开课吧教研团队

内容

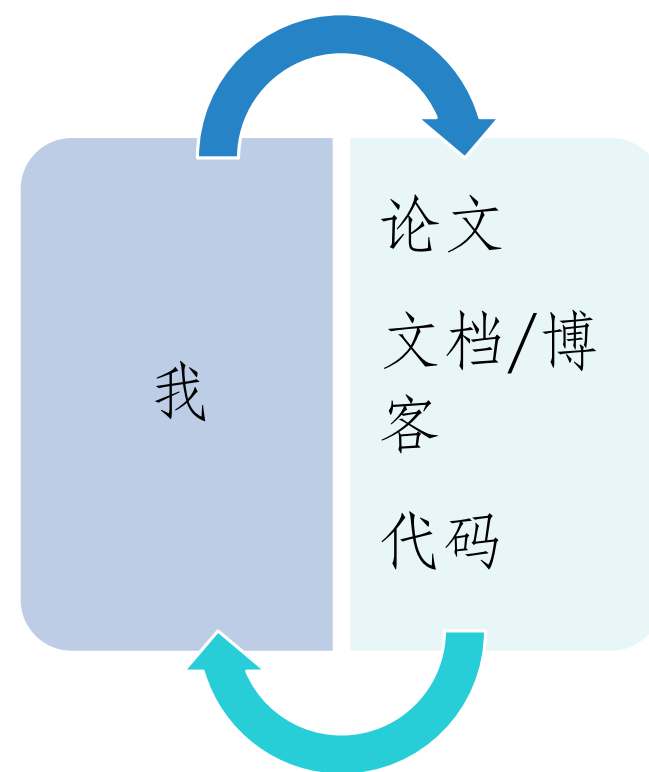
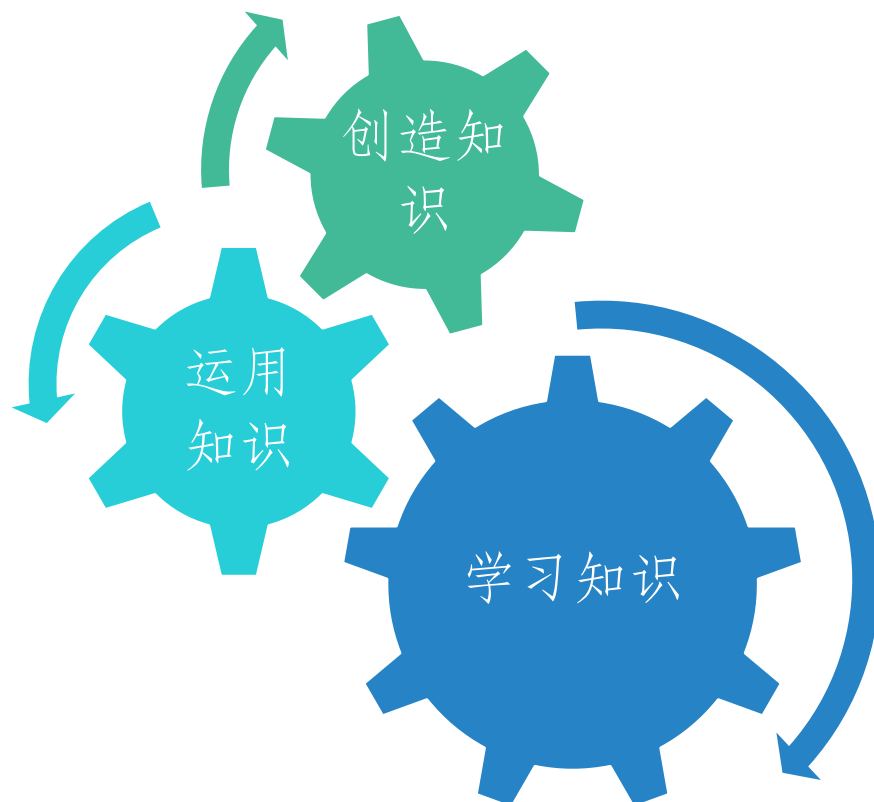
我们为什么要读/写论文

论文阅读新手指南

论文领读：《Adam - A METHOD FOR STOCHASTIC OPTIMIZATION》

浅谈论文写作

我们为什么要读/写论文



获取知识的途径比较

知识载体	可读性	即时性	深度	耗时	语言
技术博客 公众号等	高	低	中	低	中/英
代码	低	中	高	高	-/-
文档	中	中/高	中	中	英/中
论文	中	高	高/中	高	英
教材、专著	高	低	高/中	高	英/中

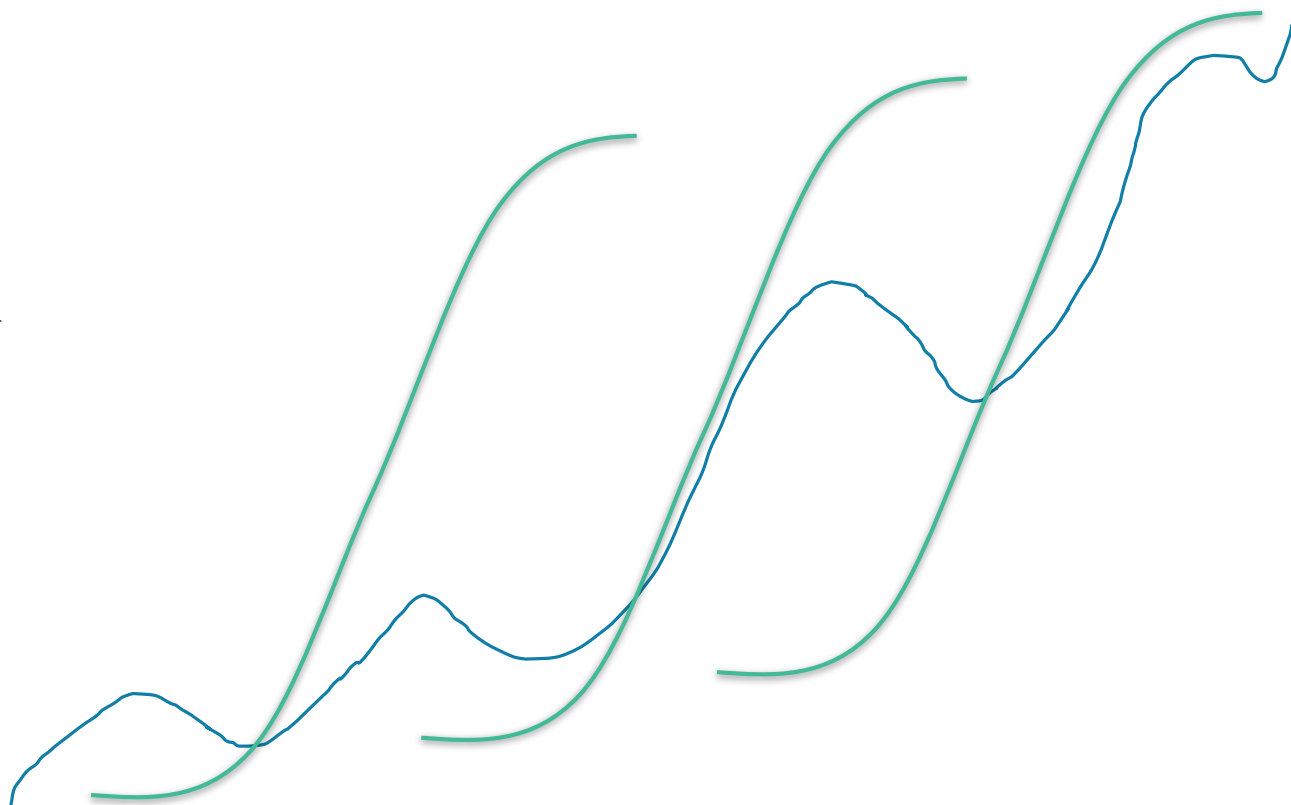
学习的规律

理解能力

应用能力

创新能力

1. 螺旋上升
2. 批判性思维
3. 博观而约取，厚积而薄发
4. 开卷有益





论文阅读新手指南



论文的种类

同行评议

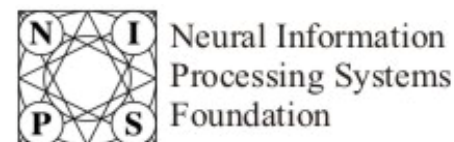
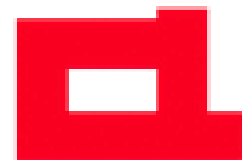
- 期刊
- 会议

非同行评议

- 预印本arXiv

对于AI会议：

1. 会议>期刊
2. 预印本需要辩证的看
3. 大部分会议论文不要钱（有arXiv）











一些网站替你选择

<http://www.guide2research.com/>

Top Computer Science Conferences

Ranking is based on *Conference H₅-index* >=12 provided by Google Scholar Metrics

Hindex	Publisher	Conference Details
1 240		CVPR : IEEE/CVF Conference on Computer Vision and Pattern Recognition Jun 16, 2020 - Jun 18, 2020 - Seattle , United States http://cvpr2020.thecvf.com/
2 169		NeurIPS : Neural Information Processing Systems (NIPS) Dec 10, 2019 - Dec 12, 2019 - Vancouver , Canada https://nips.cc
3 137		ECCV : European Conference on Computer Vision Aug 23, 2020 - Aug 28, 2020 - Glasgow , United Kingdom https://eccv2020.eu/ Deadline : to be confirmed
4 135		ICML : International Conference on Machine Learning (ICML) Jul 13, 2020 - Jul 18, 2020 - Vienna , Austria https://icml.cc/Conferences/2020 Deadline : to be confirmed
5 129		ICCV : IEEE/CVF International Conference on Computer Vision Oct 27, 2019 - Nov 3, 2019 - Seoul , South Korea http://iccv2019.thecvf.com/
6 106		ACL : Meeting of the Association for Computational Linguistics (ACL) Jul 5, 2020 - Jul 10, 2020 - Seattle , United States https://acl2020.org/
7 95		AAAI : AAAI Conference on Artificial Intelligence Feb 7, 2020 - Feb 12, 2020 - Hilton New York Midtown , United States https://aaai.org/Conferences/AAAI-20
8 88		EMNLP : Conference on Empirical Methods in Natural Language Processing (EMNLP) Dec 3, 2019 - Dec 7, 2019 - Hong Kong , Hong Kong https://www.emnlp-jcnlp2019.org/

<https://www.ccf.org.cn/xspi/gym/>

中国计算机学会推荐国际学术会议 (人工智能)

A类

序号	刊物名称	刊物全称	出版社	地址
1	AAAI	AAAI Conference on Artificial Intelligence	AAAI	http://dblp.uni-trier.de/db/conf/aaai/
2	NeurIPS	Annual Conference on Neural Information Processing Systems	MIT Press	http://dblp.uni-trier.de/db/conf/nips/
3	ACL	Annual Meeting of the Association for Computational Linguistics	ACL	http://dblp.uni-trier.de/db/conf/acl/
4	CVPR	IEEE Conference on Computer Vision and Pattern Recognition	IEEE	http://dblp.uni-trier.de/db/conf/cvpr/
5	ICCV	International Conference on Computer Vision	IEEE	http://dblp.uni-trier.de/db/conf/iccv/
6	ICML	International Conference on Machine Learning	ACM	http://dblp.uni-trier.de/db/conf/icml/
7	IJCAI	International Joint Conference on Artificial Intelligence	Morgan Kaufmann	http://dblp.uni-trier.de/db/conf/ijcai/

预印本网站



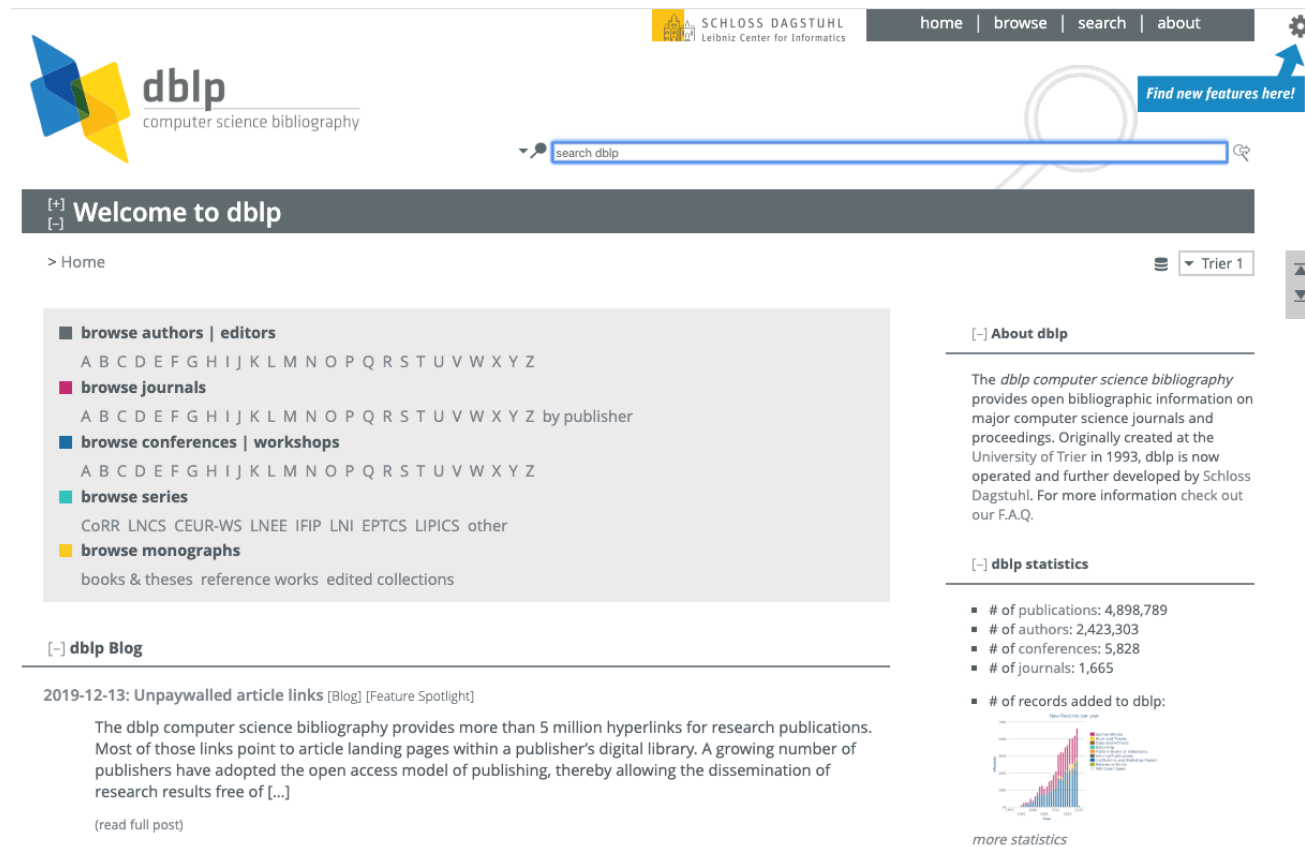
[arXiv](#) / [CoRR](#) / Welcome to the Computing Research Repository (CoRR)

Welcome to the Computing Research Repository (CoRR)

CS搜索引擎

<https://dblp.uni-trier.de/>

Microsoft academic
Semantic scholar
Scihub



The screenshot shows the dblp website homepage. At the top, there's a navigation bar with links for home, browse, search, and about. A search bar is prominently displayed with the placeholder text 'search dblp'. Below the search bar, a welcome message reads 'Welcome to dblp'. The main content area is divided into several sections: 'browse authors | editors' with an alphabetical index (A-Z); 'browse journals' with an alphabetical index and a 'by publisher' option; 'browse conferences | workshops' with an alphabetical index; 'browse series' listing various series like CoRR, LNCS, etc.; and 'browse monographs' listing books and theses. On the right side, there's a sidebar with 'About dblp' (describing the project's history and mission) and 'dblp statistics' (showing publication counts: 4,898,789 publications, 2,423,303 authors, 5,828 conferences, and 1,665 journals). At the bottom, there's a 'dblp Blog' section with a post titled '2019-12-13: Unpaywalled article links'.

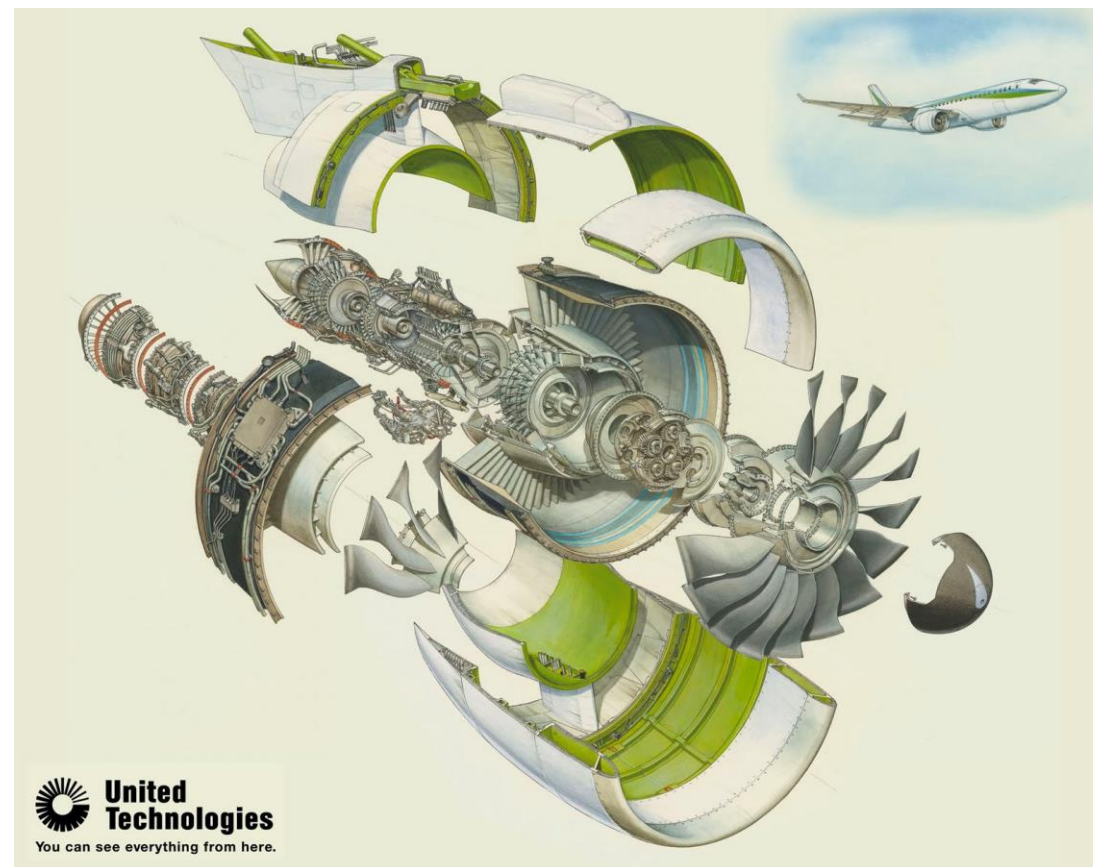
读论文的时候我们在读什么？

论文的筋骨

- **Introduction:**
 - what has been done,
 - what is left,
 - what we do
- **Related Work:**
 - Literature review
- **Method:**
 - algorithm or theory
- **Experiments:**
 - figure or table
- **Conclusion**

论文的脉络

论文的气





论文领读

ADAM

ADAM: A METHOD FOR STOCHASTIC OPTIMIZATION

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Jimmy Lei Ba*

University of Toronto
jimmy@psi.utoronto.ca

Citation: 3.5×10^4

Appeared 2014

Presented as the poster in ICLR 2015

<https://arxiv.org/pdf/1412.6980.pdf>



Leo Gao 一鸣、泽南、蛋酱
作者 参与

告别2019：属于深度学习的十年，那些我们必须知道的经典

<https://www.jiqizhixin.com/articles/2020-01-01>

论文的骨

REFERENCES

- Amari, Shun-Ichi. Natural gradient works efficiently in learning. *Neural computation*, 10(2):251–276, 1998.
- Deng, Li, Li, Jinyu, Huang, Jui-Ting, Yao, Kaisheng, Yu, Dong, Seide, Frank, Seltzer, Michael, Zweig, Geoff, He, Xiaodong, Williams, Jason, et al. Recent advances in deep learning for speech research at microsoft. *ICASSP 2013*, 2013.
- Duchi, John, Hazan, Elad, and Singer, Yoram. Adaptive subgradient methods for online learning and stochastic optimization. *The Journal of Machine Learning Research*, 12:2121–2159, 2011.
- Graves, Alex. Generating sequences with recurrent neural networks. *arXiv preprint arXiv:1308.0850*, 2013.
- Graves, Alex, Mohamed, Abdel-rahman, and Hinton, Geoffrey. Speech recognition with deep recurrent neural networks. In *Acoustics, Speech and Signal Processing (ICASSP), 2013 IEEE International Conference on*, pp. 6645–6649. IEEE, 2013.
- Hinton, G.E. and Salakhutdinov, R.R. Reducing the dimensionality of data with neural networks. *Science*, 313(5786):504–507, 2006.
- Hinton, Geoffrey, Deng, Li, Yu, Dong, Dahl, George E, Mohamed, Abdel-rahman, Jaitly, Navdeep, Senior, Andrew, Vanhoucke, Vincent, Nguyen, Patrick, Sainath, Tara N, et al. Deep neural networks for acoustic modeling in speech recognition: The shared views of four research groups. *Signal Processing Magazine, IEEE*, 29(6):82–97, 2012a.
- Hinton, Geoffrey E, Srivastava, Nitish, Krizhevsky, Alex, Sutskever, Ilya, and Salakhutdinov, Ruslan R. Improving neural networks by preventing co-adaptation of feature detectors. *arXiv preprint arXiv:1207.0580*, 2012b.
- Kingma, Diederik P and Welling, Max. Auto-Encoding Variational Bayes. In *The 2nd International Conference on Learning Representations (ICLR)*, 2013.
- Krizhevsky, Alex, Sutskever, Ilya, and Hinton, Geoffrey E. Imagenet classification with deep convolutional neural networks. In *Advances in neural information processing systems*, pp. 1097–1105, 2012.
- Maas, Andrew L, Daly, Raymond E, Pham, Peter T, Huang, Dan, Ng, Andrew Y, and Potts, Christopher. Learning word vectors for sentiment analysis. In *Proceedings of the 49th Annual Meeting of the Association for Computational Linguistics: Human Language Technologies-Volume 1*, pp. 142–150. Association for Computational Linguistics, 2011.
- Moulines, Eric and Bach, Francis R. Non-asymptotic analysis of stochastic approximation algorithms for machine learning. In *Advances in Neural Information Processing Systems*, pp. 451–459, 2011.
- Pascanu, Razvan and Bengio, Yoshua. Revisiting natural gradient for deep networks. *arXiv preprint arXiv:1301.3584*, 2013.
- Polyak, Boris T and Juditsky, Anatoli B. Acceleration of stochastic approximation by averaging. *SIAM Journal on Control and Optimization*, 30(4):838–855, 1992.
- Roux, Nicolas L and Fitzgibbon, Andrew W. A fast natural newton method. In *Proceedings of the 27th International Conference on Machine Learning (ICML-10)*, pp. 623–630, 2010.
- Ruppert, David. Efficient estimations from a slowly convergent robbins-monro process. Technical report, Cornell University Operations Research and Industrial Engineering, 1988.
- Schaul, Tom, Zhang, Sixin, and LeCun, Yann. No more pesky learning rates. *arXiv preprint arXiv:1206.1106*, 2012.
- Sohl-Dickstein, Jascha, Poole, Ben, and Ganguli, Surya. Fast large-scale optimization by unifying stochastic gradient and quasi-newton methods. In *Proceedings of the 31st International Conference on Machine Learning (ICML-14)*, pp. 604–612, 2014.
- Sutskever, Ilya, Martens, James, Dahl, George, and Hinton, Geoffrey. On the importance of initialization and momentum in deep learning. In *Proceedings of the 30th International Conference on Machine Learning (ICML-13)*, pp. 1139–1147, 2013.
- Tieleman, T. and Hinton, G. Lecture 6.5 - RMSProp, COURSE: Neural Networks for Machine Learning. Technical report, 2012.
- Wang, Sida and Manning, Christopher. Fast dropout training. In *Proceedings of the 30th International Conference on Machine Learning (ICML-13)*, pp. 118–126, 2013.
- Zeiler, Matthew D. Adadelta: An adaptive learning rate method. *arXiv preprint arXiv:1212.5701*, 2012.
- Zinkevich, Martin. Online convex programming and generalized infinitesimal gradient ascent. 2003.

论文的气：WHAT'S NEXT?

<https://arxiv.org/abs/1912.02292>



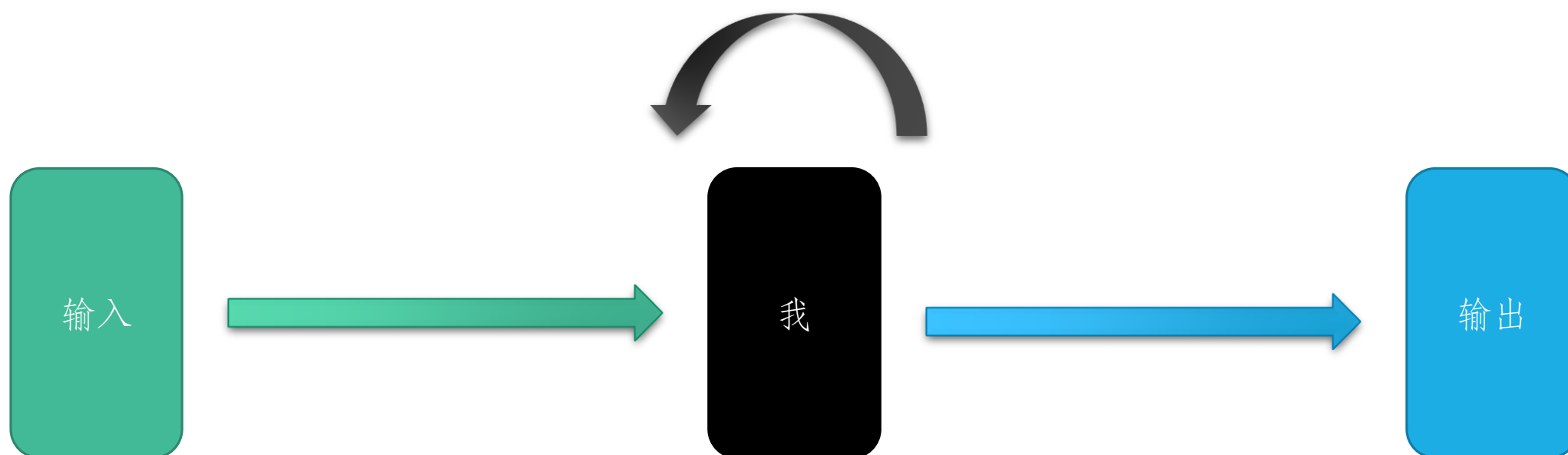


论文写作浅谈



我们为什么要写论文

写作是为了更好的思考



人类写作的两种思维

1. 创造性思维

2. 批判性思维

不要“一心二用”

先写再改

我们如何写

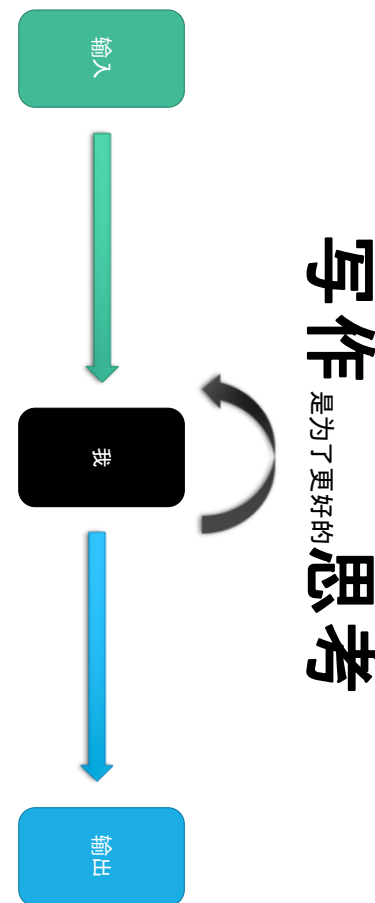
写好论文的筋骨

- Introduction:
 - what has been done,
 - what is left,
 - what we do,
- Related Work:
 - Literature review
- Method:
 - algorithm or theory
- Experiments:
 - figure or table
- Conclusion



他人的工作

自己的工作



我们如何写论文

战 (fei) 略 (hua) 上

立意高远

理论扎实

实验充分

图像生动

文字优美

工具:

LaTeX

Grammarly

matplotlib/seaborn

另一方面:

可以从模仿写作开始

例如

<https://arxiv.org/pdf/1512.03385.pdf>

一点多说的话

投稿论文的门槛越来越低

多尊重他人的工作

多讲人话，实事求是，莫当民科