Professional English Academic Writing - I

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Announcement

- Quiz TODAY!
- I will not attend the class on Nov. 29.
- To make it up, I will upload a course video on the course website on Nov 29.
- Also, in that video, I will assign a paper writing task. (The students perform oral presentations do not need to complete it.)

This rather naive way of performing machine translation has quickly become competitive with the state-of-the-art, and this raises serious doubts about whether understanding a sentence requires anything like the internal symbolic expressions that are manipulated by using inference rules.

It is more compatible with the view that everyday reasoning involves many simultaneous analogies that each contribute plausibility to a conclusion.

To correct for that, one idea is to augment the network with an explicit memory.

implicit

Unsupervised learning91–98 had a catalytic effect in reviving interest in deep learning, but has since been overshadowed by the successes of purely supervised learning.

Natural language understanding is another area in which deep learning is poised to make a large impact over the next few years.

Basic ideas of Academic Paper writing

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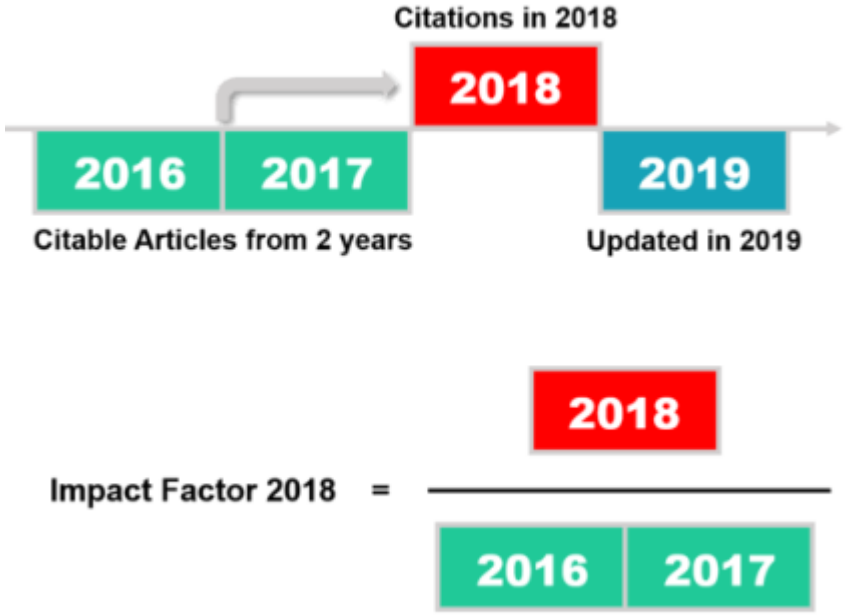
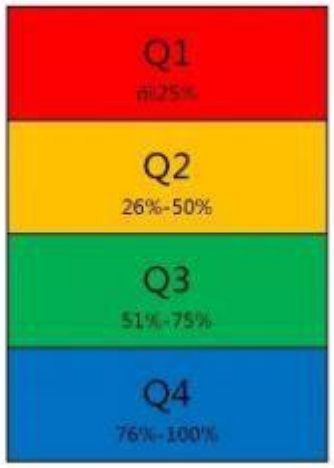
Impact Factor

- Impact factor of journal is the frequency of its citations.
- High impact factor journals are the ones which have high frequency of citations by others
- It is a superficial, but internationally accepted, measure of quality of journals
- Appears in Journal Citation Reports - Science Citation Index

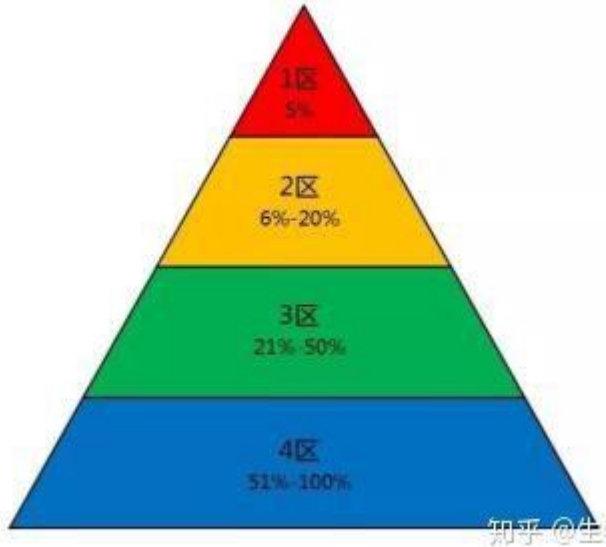


Quartile Ranking

- JCR



- CAS



Some Impact Factor

- Nature

40

- Science

37

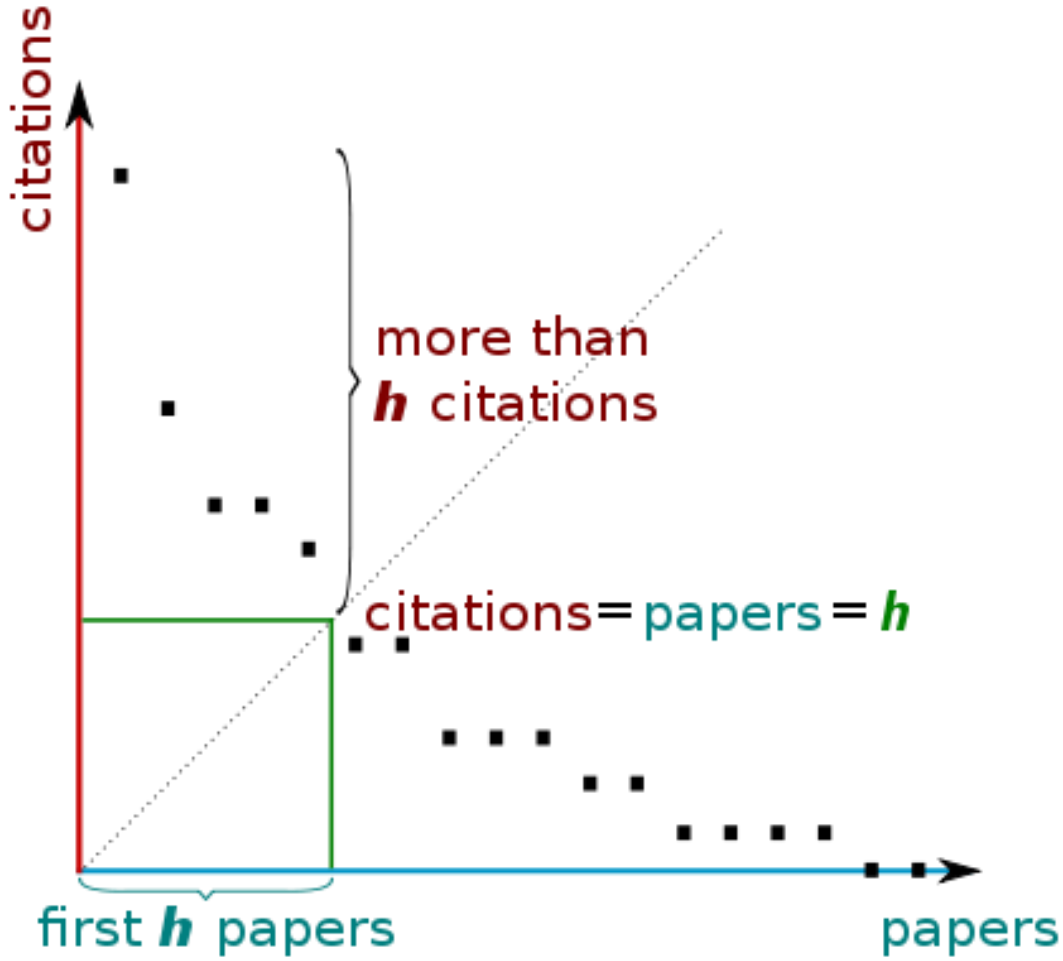
Rank	Journal Title	IF2017	IF2018	
1	IEEE Industrial Electronics Magazine	10.429	13.241	↑
2	Proceedings of the IEEE	9.107	10.694	↑
3	Renewable & Sustainable Energy Reviews	9.184	10.556	↑
4	IEEE Transactions on Smart Grid	7.364	10.486	↑
5	Applied Energy	7.900	8.426	↑
6	IEEE Transactions on Sustainable Energy	6.235	7.650	↑
7	IEEE Transactions on Industrial Electronics	7.050	7.503	↑
8	IEEE Transactions on Industrial Informatics	5.430	7.377	↑
9	IEEE Transactions on Power Electronics	6.812	7.224	↑
10	Energy Conversion and Management	6.377	7.181	↑
11	IEEE Transactions on Power Systems	5.255	6.807	↑
12	IEEE Journal of Emerging and Selected Topics in Power Electronics	5.177	5.972	↑

Hirsch Index

- It measure both the productivity and impact of the published work of a researcher.
- The index is based on the set of the scientist's most cited papers and the number of citations.
- The index can also be applied to the productivity and impact of a group of scientists, such as a department or university or country

H-index

The h-index is based on a list of publications ranked in descending order by the Times Cited. The value of h is equal to the number of papers (N) in the list that have N or more citations.



Publish in High Impact Factor / Top-tier Journals

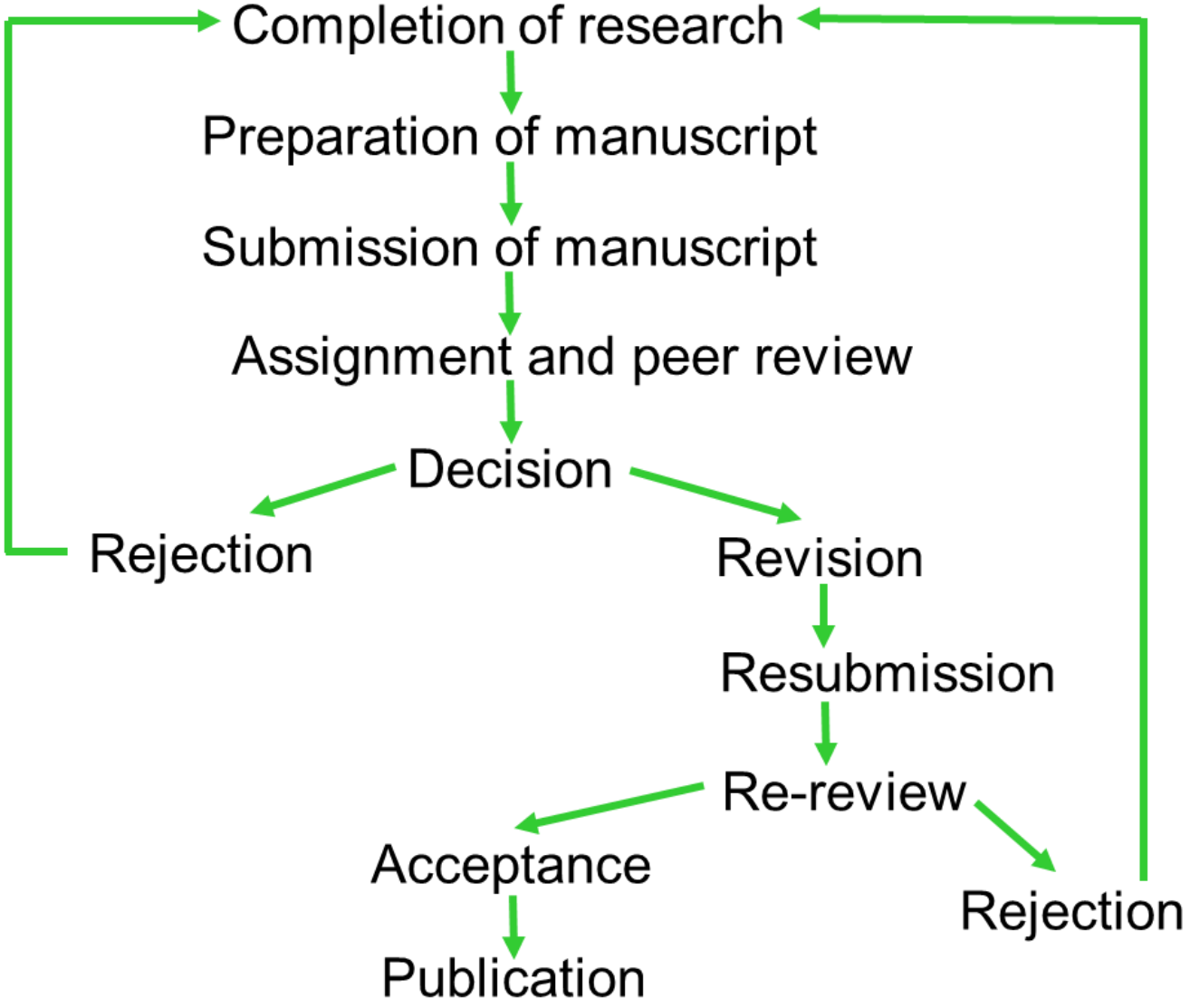
- *Publish or perish*
- Greater visibility of research findings
- More critical reviewers → high paper quality
- Increase chances of citations
- Greater recognition among peers
- Associated benefits such as promotions, productivity allowances, etc

Publish in High Impact Factor / Top-tier Journals

- Novelty of findings (very useful)
- Results of general interest
- Good performance for engineering
- Concise and well written
  - Free of grammatical and stylistic errors
  - Recognizing contributions of others
  - Technically and theoretically correct

Review Process

- Exciting the reviewer's mind is far more important then exciting the reader's mind.
- It is likely that no one will ever read your paper more thoroughly than the reviewer.
- Suggest referees that appreciate your work (political)



Reasons for Acceptance or Rejection

- Originality
  - Novel or creative research methodology/important research findings
- Scientific Quality (It is impossible to write a good paper on the basis of lousy science!!!!)
- Research data representation
- Depth of the investigation
- Thorough and logical discussion of results

- The study is just confirmation of previous research i.e. not novel
- Poor experimental design
- Targeted journal is not suitable
- Weakly written/presentation and language

- Combination=Innovation ?

Ethics in Scientific Writing

- Authorship issues
- Acknowledging past and present contributions of others
- Registered Clinical Trials
- Acknowledge Grants/funding
- Avoid Fragmentary or duplicate publications
  - **Falsification and Data alteration**
  - **Plagiarism:** Intentional use of another persons work with reference to your name without proper citation of the original source

General Structure of a Scientific Paper

- Title
- Abstract
- Introduction
- Methods & Innovations
- Results
- Discussion
- Acknowledgements
- References
- Title, key words and abstracts are used for electronic searches

Write in the following order:

- Figures and tables
- Methods, Results and Discussion
- Conclusions and Introduction
- Abstract and title

Title

- The opportunity to attract the reader's attention
  - Especially in conference
- Keep it informative and concise
  - Reviewers and editors would not like titles make no senses or fail to represent the subject matter adequately.
- Traditionally, technical jargon and abbreviations are not allowed.
- You include some performance data

Title Example

- Cited by 33548 since 2016

Deep Residual Learning for Image Recognition

Kaiming He Xiangyu Zhang Shaoqing Ren Jian Sun
Microsoft Research
{kahe, v-xiangz, v-shren, jiansun}@microsoft.com

- Cited by 50898 since 2012

ImageNet Classification with Deep Convolutional Neural Networks

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Title Example

IROS 2019 Best Paper Final list

- **Planning Reactive Manipulation in Dynamic Environments**
  Philipp Sebastian Schmitt, Florian Wirnshofer, Kai M. Wurm, Georg v. Wichert, Wolfram Burgard

- **Bounded-Error LQR-Trees**
  Barrett Ames, George Konidaris

- **Interaction-aware Decision Making with Adaptive Strategies under Merging Scenarios**
  Yeping Hu, Alireza Nakhaei, Masayoshi Tomizuka, Kikuo Fujimura

- **Bee+: A 95-mg Four-Winged Insect-Scale Flying Robot Driven by Twinned Unimorph Actuators**
  Xiufeng Yang, Ying Chen, Longlong Chang, Ariel, A Calderon, Nestor O Perez-Arancibia