# Writing a Paper in 12 Hours

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# Outline

- Sketching your paper
  - Sections
  - Paragraphs
- Fleshing it out
  - Sentences
  - Wording
- Conclusion

# Sections of a Paper

- Introduction

- Related Work

- Approach

- Experiments

- Conclusion

- Introduction

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- Experiments

- Related Work

- Conclusion

# Introduction

- What is your task? Why is it important?

- What are the existing approaches? What are the problems?

- What is your solution? Why does it solve the above problems?

- What is your experiment? How does your model perform?

# Examples

# Related Work

- On the task

- On the model


- Categorize related work according to a certain criterion.

- State the difference and weakness
  - If impossible for major related work, put this section at the end of the paper.

# Examples

# Remaining parts

- Approach

  – Describe your approach as clearly as possible

- Experiments

  – Dataset, settings, evaluation metrics

  – Overall performance

  – In-depth analysis

# Conclusion and Abstract

- Nobody reads it (as long as your paper is clear enough).

- Write these two parts in 5 min., but **make them different**

- Conclusion

  – Proposal → Merits → Overall results → Analysis

- Abstract

  – Background → Proposal → Merits → Overall results

# Examples

# Composing a Paragraph

- Each paragraph contains **exactly one** topic.

  - But what is a topic is vague.

  - Connecting sentences may be an exception.

- A topic sentence is mandatory for a paragraph.

  - Usually the first sentence

  - The last sentence could further conclude the paragraph

    State your intention first
    Then describe the details

# The logic flow between sentences

- Cause and effect
  - Therefore, thus, hence, so
- Sequential in time
  - Then, next, after that, thereafter
- Progressive
  - Further, furthermore, moreover, etc.
- Turning
  - But, however, nevertheless, nonetheless, although, despite
- Parallel
- 花开两朵各表一枝 (Independent) → Worst case

# But the logic flow should be implicit whenever possible

Automatic dialog systems have served humans for a long time. In the last few decades, dialog systems play an important role in specific domains such as reservation and guiding systems to replace humans as customer service. In that situation, predefined templates and rules could handle query understanding and reply generation problems. Recently, dialog systems have been evolving from customer service to emotional partners of humans and those rule-based sentence generation systems lose their effective in the open domain. With the rise of on-line talking platforms on the internet, large number of corpus between humans is available now. Then the retrieval-based methods become the main stream in dialog systems. The statistical machine translation could also be an alternative way to generate sentences in the open domain.

Using natural language to query a knowledge base is an important task in NLP and has wide applications in question answering (QA) [Yin *et al.*, 2016a], human-computer conversation [Wen *et al.*, 2016], etc. Table 1 illustrates an example of a knowledge base (a table) and a query "How long is the game with the largest host country size?" To answer the question, we shall first find a row with the largest value in the column *Area*, and then select the value of the chosen row with the column being *Duration*.

Explanatory

A typical approach is to convert a natural language sentence to an "executable" logic forms for table/knowledge base querying, known as *semantic parsing* [Long *et al.*, 2016; Pasupat and Liang, 2016]. Such approaches require extensive human engineering. With the fast development of modern neural networks, Dong and Lapata [2016] and Xiao *et al.* [2016] apply sequence-to-sequence (seq2seq) neural models to generate a logic form conditioned on an input sentence. However, seq2seq models need strong supervision of groundtruth logic forms, which are labor-intensive to obtain and *ad hoc* to a specific dataset; they cannot be trained in an end-to-end fashion with denotations[1] only.

# More Examples

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# Write in Active voice

Previously, many unsupervised methods have been developed for the extraction work and almost all of them rank the sentences or assess the weights of n-grams and then generate summary based on the previous result.

XXX propose an unsupervised method that generates a summary by assessing the weights of n-grams.

# Cut the clutters

- Use short words
  - Firstly → First
  - Furthermore → Further
  - In order to → To
  - In spite of → Despite
- Use adverbs of degree only if necessary
  - XXX is ~~very~~ important
  - XXX is ~~extremely~~ difficult

# Cut the clutters

- We try to → We

- We think we need → We need

- Despite the fact that → Although

  (use *although* instead of *though*)

- Based on the above observation → Thus/Therefore/Hence

- On the one hand, On the other hand → Use it occasionally

# Cut the clutters

- The remainder of this paper is organized as follows.

  - Only when you have additional space.

- In this section, we describe xxx

  - Only when necessary

# Avoid Spoken English

- It's → It is

- It is just xxx → It is xxx

- And xxx → XXX

# Wording

- Countable/uncountable?
  - Approach, experiment, result, accuracy, evaluation, performance
  - Study, work, research
  - Data, dataset, data sample
- Transitive/Intransitive?
  - Investigate, research
  - Comprise, consist, compose
- Preposition?
  - Contrary/Contrast

# Wording

- Punctuation
  - But/So: usually conjunction; If adverb, no comma.
    - XXX, but/so XXX
    - XXX. But/So XXX
  - However: adverb only; comma mandatory
    - XXX. However, XXX.
    - XXX. XXX, however, XXX
  - Thus/Therefore/Hence: adverb only, comma encouraged
    - Thus/Therefore/Hence, XXX.
    - Thus/Therefore/Hence XXX. (ok)
    - We therefore xxx (no comma)

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# Conclusion

- Write precise, logical, easy-to-read, and interesting papers