

Currently known:

1. Definition of ICL ability
 - a. Copying ability
 - b. Rule Learning ability
2. Metamorphic testing for evaluation
3. The two most important factors affecting ICL performance.
 - a. Selection
 - b. Ordering

My opinion:

1. Metamorphic relation construction
Requirement: perturbation of examples. Foreseeable (desirable properties).
 - a. **Order**
 - b. Shot quantity
 - i. 3->4 3->2
 - c. Format: (e.g., table → natural language, JSON → plain text)
 - d. **Paraphrase**
 - e. Blind Copying: Truncate, mask,
ABC AB>C
A -> C
....

To do:

1. How to ensure that the testing task is not affected by the model's own language ability and internal knowledge.
 - a. Example ordering is an important factor affecting ICL performance, which makes it difficult for us to predict the results of perturbation.
2. Test case construction.
 - a. Fairness
3. ICL method
4. Baseline

Next step:

1. **Specific perturbation for 5**
2. **Formal definition**

Unstructured Text

Prompt:
The Baptist Mission Union censured 521351caba13f591 for abandoning his post without authorization and going to Rangoon; he resigned from the Missionary Union and accepted, unpaid, the affiliation of American Baptist Free Mission Society ... In 1872, long after the death of 521351ca
Label: ba13f591

Structured Text

Prompt:
c5f3b8 : On August 15, a convention in Atlanta, ...
5baa0d : Moreover, cloudy days are often warm and ...
79bbc3 : In this period, the band won several prizes ...
71df7d : In winning the ... Gold Cups in the 1930s.
340b02 : Nevertheless, it has ... in eukaryotic cells.
71df7d :
Label: In winning the ... Gold Cups in the 1930s.

Copying

ICLEval

Learning

Format rules

Prompt:
(n-shot examples...)
Input:
[Index	name	age	city
1	Elijah Morgan	36	Pittsburgh
Output:
Label:
<person>
<name>Elijah Morgan</name>
<age>36</age>
<city>Pittsburgh</city>
</person>

Statistics rules

Prompt:
(n-shot examples...)
Input:
588 and 823 are friends.
885 and 823 are friends.
795 and 588 are friends.
890 and 823 are friends.
885 and 588 are friends.
890 and 588 are friends.
795 and 823 are friends.
Query: Who are the friends of 885?
Output:
Label: 823, 588

Order rules

Prompt:
Input: activity, brief, wonder, anger
Output: anger, wonder, activity, brief
Input: market, forever, will, curve
Output: curve, will, market, forever
Input: pain, leading, drag, shoot
Output: shoot, drag, pain, leading
Input: shopping, drama, care, start
Output:
Label: start, care, shopping, drama

Tips: convert the original order
[1, 2, 3, 4] to [4, 3, 1, 2]

List Mapping

Prompt:
Input: [1, 3, 6, 1, 83]
Output: [3]
Input: [5, 6, 35, 3, 67, 41, 27, 82]
Output: [6, 35, 3, 67, 41]
Input: [8, 45, 6, 18, 94, 0, 1, 2, 7, 34]
Output: [45, 6, 18, 94, 0, 1, 2, 7]
Input: [2, 7, 66, 6, 93, 4, 47]
Output:
Label: [7, 66]

Tips: elements 2 through N + 1,
N = element 1