

Annotation Guidelines for Natural Language Inference

Goal of the annotation task

The annotation task is about to identify semantic relations between English sentences. In natural languages (e.g., English, Dutch, Chinese, etc.) sentences can be related in different ways: having similar, opposite or unrelated meanings. We would like to teach computer systems to understand such relations between natural language sentences. For this we need to train them on initial data where sentence pairs are annotated with relations. You can help us to annotate such initial training data.

What to annotate

During the annotation, we will show you one or several *premise* sentences paired with a single *hypothesis* sentence. A premise(s)-hypothesis pair will be formatted as:

```
ID: an_id_of_a_pair

Premise sentence
Other premise sentences (if there is more than one premise)
===== LABEL
Hypothesis sentence
```

Your task is to read and understand the premise and hypothesis sentences. Based on the meaning of the sentences, you will need to decide to what extent the hypothesis is true/false, given that the premises are true. Then you select LABEL keyword and annotate it with the corresponding annotation label (see [Figure 1](#)).

Choosing annotation labels

When annotating a premise-hypothesis pair, think about premise sentences as true facts. Given that the premises are true (and what you know about the world), use your best judgment and evaluate how likely it is that the hypothesis sentence is also true. For evaluation you can choose one of these labels:

- **Definitely True:** the hypothesis is definitely, necessarily true. You are sure and completely certain that the hypothesis is true.
- **Most Likely True:** it is not completely certain that the hypothesis is true, but with a high certainty you would assume that it is true.
- **Unknown:** it is not clear whether the hypothesis is definitely or most likely true/false. Assuming truth/falsity of the hypothesis won't be sufficiently justified.
- **Most Likely False:** it is not completely certain that the hypothesis is false, but with a high certainty you would assume that it is false.
- **Definitely False:** the hypothesis is definitely, necessarily false. You are sure and completely certain that the hypothesis is false.

Figure 1: An annotation window that appears after selecting or double-clicking the LABEL keyword

- **Difficult:** when you understand all sentences, but it is still difficult for you to assign one of the above-mentioned labels to the pair. This label is expected to be chosen rarely, but when choosing it, it is mandatory to provide an explanatory note (see Figure 1).
- **Skip:** If you think none of the previous label is suitable, then choose this label. For example, one of the reasons for choosing it could be that one of the sentences are ungrammatical or don't make sense. You need to provide an explanatory note for this label.

You are also welcome to provide notes for other labels, but this is not required and usually not necessary as those labels are expected to be self-explanatory.

Examples

We hope that several examples of annotated pairs will help you to better understand the annotation task.

```
A little girl is playing with a puppy
===== Definitely True
A person is playing with a dog
```

Knowing that every *little girl* is a *person* and that every *puppy* is a *dog*, the hypothesis is definitely true given that the premise is true.

```
A little girl is throwing a stick to a dog
===== Most Likely True
A little girl is playing with a dog
```

Usually *throwing a stick* is a sort of playing with a dog, but this is not necessarily true. For example, this could be a rare case where a little girl is crying and throwing a stick to the dog as she is afraid of and wants to get rid of the dog.

A little girl is playing with a dog
===== Unknown
A girl is playing with a puppy

Based on the premise, it is unknown whether the dog is a puppy. Because the little girl is playing with the dog (and taking into account that playing with a puppy is usually safer for kids), one might think that there is more chance that the dog is a puppy rather than not, but such assumptions are not reliable enough even for evaluating the hypothesis with **Most Likely True**.

Another example of the **Unknown** label is:

A little girl is playing with a dog
===== Unknown
It is a hot sunny day

A little girl is playing with a cat
===== Most Likely False
The girl is playing with a mouse

It is very unlikely that the girl is playing with a mouse while she is also playing with the cat.

A little girl is playing with a cat
===== Definitely False
The girl is tired and sleeping

It is impossible to play with a cat and sleep at the same time. Yet another example for the **Definitely False** label is:

A little girl is playing with a cat
===== Definitely False
No girl is playing with a cat

The girl is not playing in the park
===== Difficult
The girl is in the park

The premise sentence is a bit vague. It might mean that the girl is in the park but she is not playing there or that she is not in the park and therefore not playing there. This little vagueness in the meaning of the premise is crucial for evaluating truth/falsehood of the hypothesis. A good explanatory note for this pair would be *the premise is vague wrt the girl being in the park*.

The girl is playing in the park
===== Skip
is in the park

The hypothesis is not a proper sentence, therefore it is difficult to interpret it and evaluate it wrt the premise. A good explanatory note for this pair would be *the hypothesis is not a sentence*.

Using the annotation environment

For annotation we use the brat annotation tool.¹ You will be provided with the account details, the URL to the online annotation tool, and the path to your annotation directory. When you visit the URL, first thing you need to do is to close the pop-up windows and log in the annotation environment. Hover the cursor over the brat logo at the top-right corner of the page to see the login option. After you are logged in, press TAB or the **collection** button at the top menu.² Navigate to your annotation directory and open one of the documents.

Each document contains a single premise(s)-hypothesis pair. You can switch to the next and previous documents via the left and right arrows at the top menu or on the keyboard. Obviously, you are free to annotate the pairs in any order. You can also edit your annotation labels later. Annotation labels are added by double-clicking on or selecting the LABEL keyword. This triggers an annotation window, see **Figure 1**. To delete or modify the existing annotation, double-click on the label to trigger the annotation window.

Checklist for finalizing the annotation

Before finishing the annotation task, make sure that the annotations are well-formed:

- ✓ Each premise(s)-hypothesis pair is annotated with a single label.
- ✓ **Difficult** and **Skip** labels (if any) come with explanatory notes.
- ✓ All labels are applied to the keyword LABEL (without any extra whitespace).

¹<https://brat.nlplab.org>

²There are other options in the main menu but you don't need those options for the annotation.