

Guidelines for Annotation of Sentiment Corpus

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1 Introduction

Welcome. In this assignment your task is to annotate sentiments in a corpus of Twitter messages.

1.1 Annotation Tool

For annotation, you will use **MMA2** – a freely available annotation tool which can be downloaded under the following link:

http://sourceforge.net/projects/mmax2/files/mmax2/mmax2_1.13.003/MMA2_1.13.003b.zip/download

After you have downloaded and unpacked the archive, change to the newly appeared directory `1.13.003/MMA2` in your shell and execute the following commands:

```
> chmod u+x ./mmax2.sh  
> nohup ./mmax2.sh &
```

If you have never used **MMA2** before, please read the document `mmax2quickstart.pdf` which you can find in the subdirectory `MMA2/Docs`.

1.2 Corpus Files

You should also have received a copy of corpus' project files as a tar-gzipped archive. Please unpack this archive using the command:

```
> tar -xzf twitter-sentiment.tgz
```

After that, a directory called `mmax-prj` will appear in your current folder. Change to your **MMA2** window and click on the menu **File -> Load**. Select path to the unpacked `mmax-prj` folder in the appeared popup menu¹ and select one of the `*.mmax` files there. Now, source data will be loaded into **MMA2** program.

2 Tags and Attributes

In this annotation, we will use following tags with following attributes:

1. *sentiment*-tag with attributes:

- (a) polarity,
- (b) intensity,
- (c) sarcasm,
- (d) sentiment-ref;

2. *source*-tag with attributes:

- (a) anaph-ref,
- (b) sentiment-ref;

¹Be sure the path itself contains no white spaces. Otherwise **MMA2** will fail to load the project file with the error message `java.net.MalformedURLException.no protocol: words.dtd`

3. *target*-tag with attributes:

- (a) anaph-ref,
- (b) sentiment-ref;

4. *emo-expression*-tag with attributes:

- (a) polarity,
- (b) intensity,
- (c) emo-expression-ref,
- (d) sentiment-ref;

5. *intensifier*-tag with attributes:

- (a) degree,
- (b) sentiment-ref;

6. *diminisher*-tag with attributes:

- (a) degree,
- (b) sentiment-ref;

7. and the *negation*-tag.

A more detailed description of the meaning of these tags and attributes is given in the next subsections.

2.1 sentiment

sentiments are our most important markables. In these tags you should include statements which express some polar opinions about some subject as well as comparisons of two subjects. We DO NOT regard as sentiments opinions which do not convey any polarity nor do we consider as such polar expressions which are not related to any particular subject. In other words, simple informative statements, apologies, commands or hesitations should not be marked with these tags.

For determining the boundaries of a sentiment, look by which grammatical means given sentiment is expressed – if it is a single noun phrase (e.g. “*Auf dem Tresor lag <sentiment>ein hässliches Buch</sentiment>.*”), mark this noun phrase; if it’s a clause (e.g. “*<sentiment>Ich hasse Bücher ohne Inhaltsangabe.</sentiment>*”), mark the whole clause; if a sentiment is expressed by multiple clauses (e.g. “*<sentiment>Sie denken, reden, riechen, lieben, schmecken, ficken Plastik. Sie haben das so gelernt in der Plastik-Werbewelt.</sentiment>*”), include all pertaining clauses in the span.

The attributes of the **sentiment** tag with their respective values and meanings are specified in the table below:

Attribute	Value	Value's Meaning
polarity	<i>positive</i>	this sentiment expresses positive attitude to its respective target
	<i>negative (default)</i>	this sentiment expresses negative attitude to its respective target
	<i>comparison</i>	this sentiment expresses comparison of two targets with preference given to some of them
intensity	<i>0</i>	stylistically weakly marked expression which tends more towards a neutral sentence
	<i>1 (default)</i>	middle stylistic expressivity
	<i>2</i>	stylistically very expressive sentiment
sarcasm	<i>true</i>	this polar attitude is meant as a derision, i.e. its actual polarity is the opposite of its apparent form (that means that an apparent praise is in fact meant as rebuke and vice versa - but this actual sense can only be derived on the basis of outside context or common knowledge)
	<i>false (default)</i>	no sarcasm present - polar attitude has literal meaning
sentiment-ref	<i>- > (directed edge)</i>	in case a single sentiment is not a contiguous text span but rather split into parts, you can draw an edge with this label from additional parts of a sentiment to its main part

2.2 source

The **source** tag is used to mark the immediate author(s) or experiencer(s) of a respective sentiment expression. For example, in sentence – *Sie mag ihr neues Outfit nicht* (*She doesn't like her new outfit*) – “Sie” (“She”) should be considered as opinion’s experiencer and marked as *source* of this sentiment relation. Sources are usually expressed by pronouns, nouns or multiword expressions (e.g. *Neue Züricher Zeitung*). When marking **sources**, please always include complete noun phrases in this tag, i.e. nouns with all their respective dependent attributes.

The attributes of the **source** tag with their respective values and meanings are specified in the table below:

Attribute	Value	Value's Meaning
sentiment-ref	<i>- > (directed edge)</i>	directed edge pointing from an outside source element to its respective sentiment, or in case of multiple overlapping sentiments when one source element is included in both of sentiment element - in that case this edge should point from source to its respective sentiment span
anaph-ref	<i>- > (directed edge)</i>	directed edge pointing from source element expressed by pronoun or pronominal adverb to their respective antecedents

2.3 target

2.4 emo-expression

2.5 intensifier

2.6 diminisher

2.7 negation

2.8 target

target-tag denotes subjects you should mark persons, things, events or actions the opinion is made about.

Coordinatively connected noun phrases both of which represent targets should be marked separately. In cases the sentiment is a comparison, you should also mark two separate targets. One target

should comprise the object that is preferred in comparison and the other one should encompass the dispreferred object. You should also set corresponding *preference* attributes in the respective <target> tags.

Targets are usually expressed by noun phrases or clauses. You are asked to mark complete noun phrases (that means nouns and all their respective attributes). Clauses should also be marked completely.

2.8.1 Examples

Elements you SHOULD mark as targets:

- Persons, things or objects the opinion is made about, e.g. *Ich hasse **lange Schlangen*** (*I hate **long queues***);
- Descriptions of actions or events, e.g. *Ich hasse es, **wenn Stärkere Schwächere drangsaliieren*** (*I hate it **when stronger people bully weaker ones***);
- Compared elements of a comparison, e.g. *Ältere Handys halten länger als **moderne Smartphones*** (*Older mobile phones outwear **modern smartphones***).

2.8.2 Attributes

target attributes fully correspond to the attributes of *source* elements. So please refer to section ?? for the description of possible attributes for targets.

2.9 <emo-expression>

<emo-expression>s are lexical elements that bear some polarity meaning on their own. Usually this are words like *gut* (*good*), *schlechter* (*worse*), *mögen* (*like*), or *hassen* (*hate*). Such elements can be expressed either as single words or as complex expressions (in case of idiomatic expressions or support verbs).

2.9.1 Examples

Elements you SHOULD mark as emo-expressions:

- Adjectives and adverbs bearing polar attitudes *Peter hatte **bessere** Noten in der Schule als sein Bruder* (*Peter had **better** grades at school than his brother.*);
- Verbs expressing attitude of a speaker to target, e.g. *Mir **gefiel** die neue House-Staffel* (*I **liked** the new House series*);
- Idiomatic expression including support verbs e.g. ***Zum Teufel** soll die neue Regierung **gehen*** (*The new government should **go to hell***).
- Smileys in case they really express an emotional attitude and are not used for politeness or without any particular meaning e.g. *Gleich in Braunschweig mit Kameraden treffen :)* (*Will soon meet friends in Braunschweig :)*).

2.9.2 Attributes

<emo-expression> tags have the following attributes with their corresponding values:

Attribute	Value	Value's Meaning
polarity	<i>positive</i>	this emotional expression has positive polar meaning about sentiment's target
	<i>negative (default)</i>	this emotional expression has negative polar meaning
intensity	<i>0</i>	stylistically weakly marked emotional expression
	<i>1 (default)</i>	middle stylistic expressivity
	<i>2</i>	stylistically very expressive emotional expression
emo-expression-ref	<i>– >(directed edge)</i>	in cases when a single emotional expression is not represented as a contiguous span but rather split into separate parts, this edge should point from parts to the main part of emo-expression (choose whatever part you want as main and connect all the other parts to it - it does not matter which part you consider as main)
sentiment-ref	<i>– >(directed edge)</i>	in cases multiple sentiments overlap each other and the emo-expression element is located in an overlapping span of both of them this edge should point to sentiment on which this emo-expression has immediate impact

2.10 <negation>

<negation>s are lexical or syntactic elements that reverse the primary polar meaning of emo-expressions to the opposite, so that the overall polarity of the whole sentiment is different to the polarity of emo-expressions belonging to it. A typical example of negation is *nicht* in sentences like *Ein guter Schritt war diese Entscheidung **nicht***. (*This decision was **not** a good move.*).

2.10.1 Examples

You SHOULD only mark negative elements that have impact on sentiment's polarity. Negating elements having no such impact should not be marked. Negation elements are usually represented by:

- Negation particle *nicht* (*not*), e.g. *Klug ist dieser Hund sicherlich **nicht*** (*This dog is certainly **not** clever*);
- Negative article *kein* e.g. *Er war **kein** Vorbild für seine Kinder* (*He was **not** a good role model for his children*);
- Indefinite pronouns like *niemand*, *keiner* etc., e.g. ***Niemand** hielt ihn für einen ehrlichen Menschen*. (***Nobody** considered him an honest man*);
- Any lexical or idiomatic unit in case they turn sentiment's polarity to the opposite, e.g. *Ich **zweifle**, dass das neue iPhone ein besseres Display hat*. (*I **doubt** the new iPhone has a better display*).

2.10.2 Counter-Examples

DO NOT mark as negations elements that have no effect on sentiment's polarity. For example, in the sentence *Ich mag Leute, die nicht nur an sich selbst denken*. (*I like people who not only care about themselves.*) *nicht* (*not*) should not be marked as negation, since it does not change the positive polarity expressed by *mögen* (*like*).

2.10.3 Attributes

Negations only have one possible attribute, namely *sentiment-ref* that is a directed edge pointing from negation to sentiment it belongs to. You should only draw this edge in cases multiple sentiment relations overlap each other and it's not obvious to which of these sentiments the given negation belongs to, i.e. in cases the given negation is included in both sentiment spans.

2.11 <intensifier>

<intensifier>s are elements that increase the polar meaning of emotional expressions. Intensifiers are usually expressed by adjectives or adverbs like *sehr* (*very*), *ziemlich* (*rather*) etc.

2.11.1 Attributes

Intensifiers have following attributes and values:

degree	1 (<i>default</i>)	degree by which this intensifier increases polar sense of respective emotional expression (1 means slight increase), e.g. <i>ziemlich</i> , <i>recht</i> etc.
	2	this intensifier strongly increases polar sense of emotional expression, e.g. <i>sehr</i> , <i>super</i> , <i>stark</i> etc.
sentiment-ref	– > (<i>directed edge</i>)	a directed edge pointing from the intensifier to the sentiment it belongs to. By analogy to negations, you should only draw this edge in cases multiple sentiment relations overlap each other and it's not obvious to which of these sentiments the given intensifier belongs to, i.e. in cases when the given intensifier is included in both sentiment spans

2.12 <diminisher>

<diminisher>s are elements that decrease the polar meaning of emotional expressions. Like intensifiers diminishers are usually expressed by adjectives or adverbs. Typical examples of such adverbs are *wenig*, *kaum*, *ein bisschen* etc.

2.12.1 Attributes

Diminishers have the same attributes as intensifiers with the only difference in values of *degree* attribute. So here is once again a summary table of diminisher's attributes:

sentiment-ref	– > (<i>directed edge</i>)	a directed edge pointing from diminisher to sentiment it pertains to. You should only draw this edge in cases when multiple sentiment relations overlap with each other and it's not obvious to which of these sentiments given diminisher belongs to, i.e. in cases when given diminisher is included in both sentiment spans
degree	-1 (<i>default</i>)	degree by which this diminisher decreases polar sense of respective emotional expression (1 means slight decrease), e.g. <i>wenig</i> , <i>bisschen</i> etc.
	-2	this diminisher strongly decreases polar sense of emotional expression almost turning the sense of emo-expression to the opposite, e.g. <i>kaum</i> etc.