

Emotion Patterns in Music Playlists

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First Project meeting

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Sentimental Analysis (SA)

Definition

Sentiment Analysis (SA) is the computational study of people's opinions, attitudes and emotions toward an entity.

Entity = individuals, events or topics.

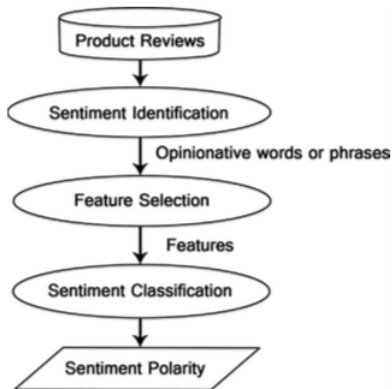


Figure 1: Sentiment analysis process on product reviews

Sentiment analysis: a classification problem

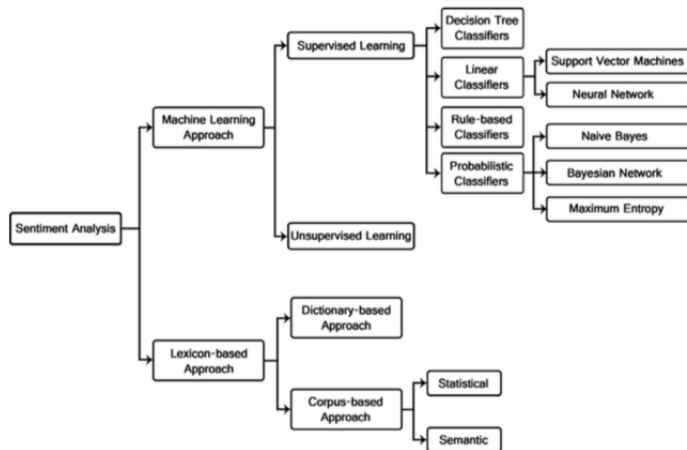


Figure 2: Sentiment classification techniques

Emotion Detection (ED)

Definition

Emotion detection is the process of identifying human emotions.

Remark

Emotion Detection (ED) is a SA task.

SA: detects positive or negative feeling from text.

ED: detects various emotions.

As a SA task, ED can be implemented using:

- ML approach
- Lexicon-based approach

Emotion Detection: Why

Emotion detection has useful applications, such as:

- Measure citizens happiness
- Pervasive computing
- Understanding the consumer

Our goal

Unravel emotion patterns in the playlists

Emotion Detection: Challenges

(Some of the) Biggest challenges in ED:

- Context-dependence of emotions \Rightarrow people use different emotion regulation strategies in different social contexts
- Word-sense disambiguation \Rightarrow identifying which sense of a word (i.e. meaning) is used in a sentence, when the word has multiple meanings
- Co-reference resolution \Rightarrow pronouns and other referring expressions must be connected to the right individuals
- Lack of labelled emotion database

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Feature Selection

Which textual features are we interested in?

- Terms presence and frequency
- Adjective
- Opinion Words and Phrases
- Negation expressions

Feature Selection Methods

- Strings
 - Phrases representing emotional patterns
- Bag of Words (BoW)
 - Sort of keywords list
 - Make the classification process simpler

Classification Levels (I)

Three possible classification levels:

- Document Level
 - The whole document is the classification unit
- Sentence Level
 - Sentences are the basic classification units
- Aspect Level
 - Classify sentiments with respect to entities and their aspects

Classification Levels (II)

Document level classification suits our problem

- We will analyze lyrics
- Lyrics are (usually) small documents focused on a single topic
- We can treat lyrics as our classification unit

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