

Emotion Patterns in Music Playlists

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First Project meeting

Table of Contents

- 1 Sentiment analysis
- 2 Emotion Detection: a SA task
- 3 References

Table of Contents

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- 2 Emotion Detection: a SA task
- 3 References

Table of Contents

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- 2 Emotion Detection: a SA task**
- 3 References

ED: What

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

ED: Why

Emotion detection has useful applications, such as:

- Measure citizens happiness
- Pervasive computing
- Understanding the consumer

ED: Challenges

Some of the biggest challenges in ED:

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

ED: Feature Selection

Which textual features are we interested in?

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

ED: 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

Table of Contents

- 1 Sentiment analysis
- 2 Emotion Detection: a SA task
- 3 References**

References

- ▶ Microsoft Developer Blog (2015)
Emotion detection and recognition from text using Deep Learning
[link](#)
- ▶ Walaa Medhat, Ahmed Hassan, and Hoda Korashy (2014)
Sentiment Analysis Algorithms and Applications: A Survey.
Ain Shams Engineering Journal