Emotion Patterns in Music Playlists

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First Project meeting

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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

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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