Aspect Based Sentiment Analysis on Consumer Reviews

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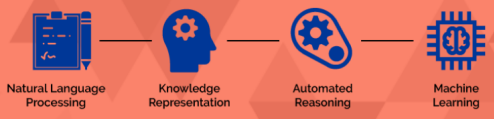
AGENDA

- Sentiment Analysis
- What is ABSA ?
- Base Paper description
- Task Description

Sentiment Analysis

"Sentiment analysis is critical because helps you see what customers like and dislike about you and your brand"

"It is a way to evaluate written or spoken language to determine if the expression is favorable, unfavorable, or neutral, and to what degree"



How is it done ?

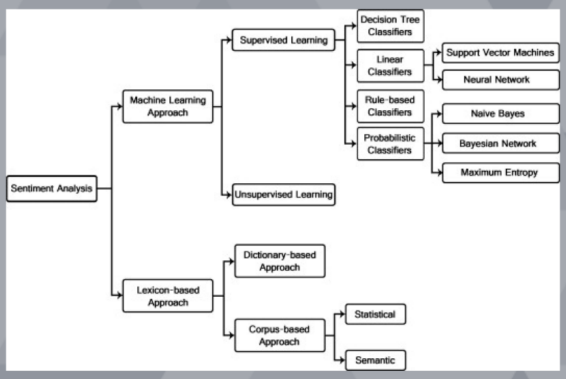
Approaches

How is it done ?

Some popular techniques

- Naive Bayes Theorem
- Negation dealing with bigrams
- n-grams
- Word Cluster

Approaches



ABSA

Base Paper

"Aspect Based Sentiment Analysis"
SemEval 2016: task-5
by, Dr. suresh Manandar,
University of York

Customer review about a restaurant	Basic Sentiment Analysis	ABSA
The waiter was really attentive. However, the meat was completely tasteless. Too expensive anyway.	66% negative 33% positive	Service: positive Food: negative Price: negative

Figure 1: An example of classical Sentiment Analysis vs. Aspect Based Sentiment Analysis

Description of present system

Algorithms / tools used in present Systems

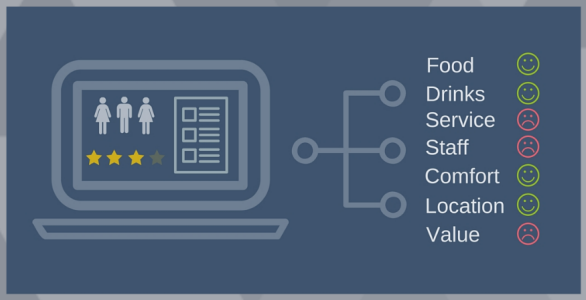
ABSA *Aspect Based Sentiment Analysis*

"It refers to determining the opinions or sentiments expressed on different features or aspects of entities, e.g., of a cell phone, a digital camera, or a bank."

A simple Visualization

A simple Visualization

- Entity
- Attribute
- Entity - Attribute pairs



Description of present system

- Review collection
- Aspect Categorization
- Opinion Target Expression
- Sentiment Polarity

Algorithms / tools used in present Systems

- Support Vector Machines
- BRAT annotation tool
- libSVM
- N-grams (unigrams, bigrams)

Challenges and Future Work

- Requires **manually labelled data** for training
- Cost is high
- Time consuming

Task Description

Algorithms to be used

Technology Stack

Task Description

- To develop an Deep Learning model to improve the performance.
- Improve the efficiency in domain specific ABSA

Algorithms to be used

- LSTM (Long Short Term Memory neural networks)
- Recurrent Neural Networks
- SVM
- Clustering

Technology Stack

- Python 2.7 / 3.6
- TensorFlow
- parseHub
- SciKit Learn
- ScyPy

References

- http://alt.qcri.org/semeval2016/task5
- http://deeplearning.org
- http://elsevier.com/locate/eswa
- https://nlp.stanford.edu/sentiment/
- SIEL:Aspect Based Sentiment Analysis by Satarupa Guha, Aditya Joshi, Vasudeva Varma