Feature Based Customer Opinion Mining - A Modern Approach **

Abstract:

In a world where customers can buy products with a few clicks online, future customers must consider the opinions and satisfaction levels of previous customers. In order to allow one to understand what previous customers have said, the design of an automated technique that summarizes opinions of thousands of customers is desirable. A promising technique has been developed that combines continuous vector representation models, natural language processing techniques and statistical machine learning models. This technique has been tested on labelled datasets and it extracts over 80% of opinions correctly. Future research can focus on improving the technique's limitations on edge cases.

Summary of final report:

This research project was proven to be a modern approach to the problem of feature based opinion mining by proposing a new technique that solves the problem of opinion phrase detection differently than before. The main goal of the project was designing an automated technique that could analyze customer reviews, and gain valuable insight by summarizing opinions of previous customers.

A promising technique has been developed that uses a unique mixture of statistical machine learning models, linguistic deep learning models, natural language processing techniques and text mining to detect opinion phrases in customer reviews. This technique has been tested on labeled benchmark datasets and it extracts over 80% of opinions phrases with a precision of 78-80%. Most importantly, this whole research project shows a proof of concept that such a system of algorithms could detect opinion phrases in subjective customer review data. Future research can focus on improving the technique's limitations on edge cases.

In terms of significance and impact, both customers and businesses can benefit with the application of such a feature based opinion mining system. This technique can provide a summary of all opinions about a specific product, which serves as convenience for customers by giving a 'big picture' view of what previous customers have said. Businesses can benefit from such a system, since business intelligence about customer opinions and satisfaction levels is priceless information. Lastly, the use of this technique could enhance the relationship between businesses and customers by offering full transparency between expectations and actual opinions about products.

** I do not have my thesis written yet, but this is a summary of my undergraduate research award's research project. Full paper can also be found at https://github.com/norberte/Latex-Research-Paper/blob/master/Research%20Paper.pdf