

Category: 4
School of Computer Engineering

Student: Ahuja Shailesh Project ID: SCE12068

## Sentiment Analysis using Natural Language Processing and Machine learning

Objective

- Be able to automatically classify reviews of various services as positive, neutral or negative
- Achieve high accuracy, recall and F1 score

• Motivation

- Current techniques are not very accurate
- Finding the perfect solution is impossible, so there is always scope for improvement in any existing solution

### **Problems**

- Many solutions exist, but nothing is directly applicable
- For the sub-problems, there are many algorithms, techniques and data available
- The challenge is to choose the solution that will have the maximum positive impact on the overall system

#### **Observations**

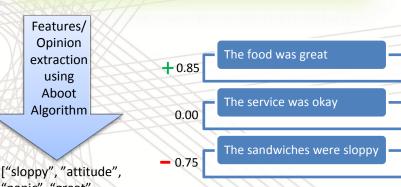
- The current system has very low accuracy, especially for negative reviews
- The proposed system on the right has to be implemented, refined and tested

#### **Future Work**

- Experimentation and research till the optimal amount of accuracy is achieved
- Extensive testing using a variety of real data sets

# **Sentiment Analysis Process Flow**

to be added (walnut for example), there is a sense of panic. The young guy who sometimes takes order has an attitude. This is one place where the customers actually initiate a smile and greeting and the guy doesnt even look up or respond.



["sloppy", "attitude",
"panic", "great",
"expensive", "delicious",
...]

Data cleansing, filtering, and stemming using nltk

["sloppy"] => - 0.75 ["expensive"] => - 0.6 ered opinion words> ["great"] => + 0.85

Sentence/

reviews

classifier

<Filtered opinion words>

Sentiment scoring using WordNet 3.0, Senti-WordNet 3.0 and graph techniques

Project Title: ROSE - RESTFUL Services for Android/IOS/PC clients

Supervisor: Asst Prof Chang Kuiyu Co-supervisor/Collaborators: None