Sentiment Analysis for Enterprise Tracking and Rating Services

For Persian language

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1. Aims Of the project:

Create a Web Service for classification for Sentiment Persian language.

Sentiment Analysis?!!

Determine the attitude of a speaker or a writer as positive, negative or neutral.

Why Persian language?

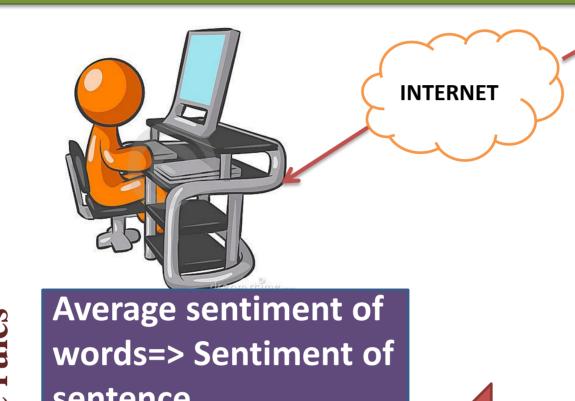
- > So many Persian web users No any Persian API.
- > So many Persian websites, Not any sentiment analysis system

2. Persian Sentiment Analysis WEB service structure

- **❖** Using GATE for Natural Language Processing.
- Using lexicon-based approach For understanding the sentiment.
- ❖ Do the processing steps as
 - ✓ tokenizing the text
 - tagging its part
 - ✓ splitting the sentences
 - ✓ Running jape rules
- Calculating the sentiment of whole document with using the average sentiment of its sentences.

3. WEB Service Structure

- 1. Eclipse: for running pipeline resource processing in GATE
- 2. Apache tomcat : for creating JavaServer Pages in eclipse.



Sentence level jape rules sentence Positive average +

Negatuve sentiment Negative average + **Negative verb =>**

Positive sentiment

Negative verb =>

eclipse Java class Web Service **Apache** └(Ba) + Noun => Posetive adjetives <= (Bi) + Noun => **Negative adjetives** 다(Na) + Noun => **Negative adjetives** jape <= Ne) + verb =>

for text engineering **Tokenizer Sentence Splitter POS** tagger

general architecture

Jape Rules Groovy

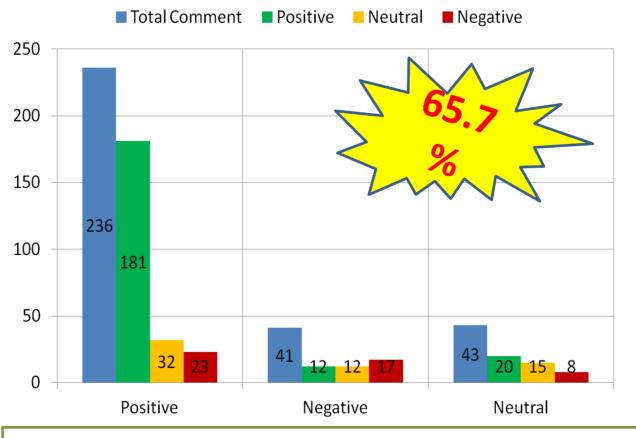
Gazetteer

6000 Persian adjectives and phrases with

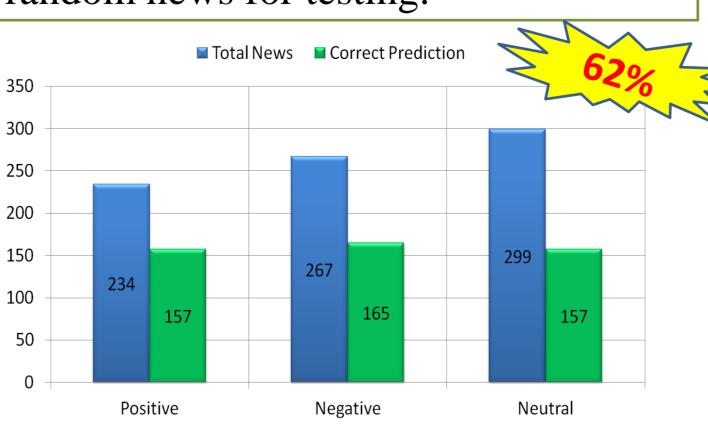
their sentiment negative verb

4. Performance testing:

1. Using a Persian website's star base comments (<u>www.iran-booking.com</u>) to compare and test.



2. Using 4 Persian News website and ask Persians to vote on their 800 random news for testing.



5. How To Use In VM

- i. Log in to VM and run eclipse
- ii. In server tab in eclipse run Tomcat
- iii. In browser go to this address: http://localhost/sentiment/dem o.php
- i. In Textbox insert your persian text
- ii. see the result under the text box.

6.Virtual Machine Description



Hostname: vm-**Software installed:**

Installed on: EIS3 XAMPP Package: MySQL 5.6.16 Apache 2.4.9, PHP 5.5.11 Eclipse Standard/

GATE_Developer_8.0 Apache tomcat 7

Local Access: OS User: Mohammad Password: mh0037kh



