Sentimental Analysis of Various News Channels based on Health Tweets

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Sentiment Analysis?

Identifying and categorizing opinions expressed in a piece of text, especially in order to determine whether the writer's attitude towards a particular topic, product, etc., is positive, negative, or neutral.
Problem Statement

To filter health news twitter data on basis of news channel, year, keyword and further perform sentiment analysis on filtered data.
Why Trending?

Widely used in areas like:

➔ City Planners, Business manager and Social Scientists
  Strategic Planning and Decision Making

➔ Analyst
  Improve advertisement strategies and Reputation.

➔ Government
  Monitor people reactions on significant events.
How it works?

- Assess the polarity of comments, highlighting the emotional state (joy, pain, disgust, anger).
- The emotional state is visually represented in the form of a graph.
Model

- **Data Harvesting**: Extracting information from popular news channels.
- **Analysis**: Based on keyword extraction, clustering and sentiment analysis.
- **Data Visualization**: Generates graphs for visualizing the analysed results.
Data Set:

- Health news data from more than 15 major health news agencies such as BBC, CNN, and NYT is used.
- Each line contains tweet id|date and time|tweet.
Implementation Tools

➔ Back end
   SQLite

➔ Front end
   Javascript, HTML, w3.css

➔ Library
   D3.js, TextBlob

➔ Server Side
   Python with Bottle.py framework
Application Criteria:

- **Input**: Channel Name, Year, Health Topic
- **Output**:
  - Grid: Year and Tweets
  - Graph: Positive, Negative & Neutral Polarity
Pseudocode

1. Initialize health news channel tweets dataset.
2. Populate Channel Name and Year.
3. Enter Channel Name, Year, Keyword.
4. Filter table on basis of Channel Name.
5. Filter records such that Year and Keyword are contained in DateTime and Twitter Text column respectively.
6. Display filtered records in grid.
7. Perform Sentiment Analysis using TextBlob on filtered records.
8. Display sentiment polarity via histogram.
Sentiment Analysis based on news channels and health

Select channel:
- BBC

Select year:
- 2015

Enter a topic:
cancer

SUBMIT
<table>
<thead>
<tr>
<th>Date and time</th>
<th>Tweets</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>Breast cancer risk test devised <a href="http://bbc.in/1CmpJF">http://bbc.in/1CmpJF</a></td>
</tr>
<tr>
<td>2015</td>
<td>VIDEO: Skin cancer spike ‘from 60s holidays’ <a href="http://bbc.in/1C9Gy3o">http://bbc.in/1C9Gy3o</a></td>
</tr>
<tr>
<td>2015</td>
<td>Skin cancer ‘linked to holiday boom’ <a href="http://bbc.in/1Pb4Xjb">http://bbc.in/1Pb4Xjb</a></td>
</tr>
<tr>
<td>2015</td>
<td>Personal cancer vaccines ‘exciting’ <a href="http://bbc.in/1ENwsMD">http://bbc.in/1ENwsMD</a></td>
</tr>
<tr>
<td>2015</td>
<td>Fitness linked to lower cancer risk <a href="http://bbc.in/1MB4gwo">http://bbc.in/1MB4gwo</a></td>
</tr>
<tr>
<td>2015</td>
<td>Preventive surgery for cancer genes <a href="http://bbc.in/1Gcd0IA">http://bbc.in/1Gcd0IA</a></td>
</tr>
<tr>
<td>2015</td>
<td>VIDEO: Could cannabis oil cure cancer? <a href="http://bbc.in/1DPcgcE">http://bbc.in/1DPcgcE</a></td>
</tr>
<tr>
<td>2015</td>
<td>Ashya King ‘free of brain cancer’ <a href="http://bbc.in/1G3XMW6">http://bbc.in/1G3XMW6</a></td>
</tr>
<tr>
<td>2015</td>
<td>MPs criticise England cancer services <a href="http://bbc.in/1HFzjoP">http://bbc.in/1HFzjoP</a></td>
</tr>
<tr>
<td>2015</td>
<td>Frankie the dog ‘sniffs out cancer’ <a href="http://bbc.in/1CO/VMH">http://bbc.in/1CO/VMH</a></td>
</tr>
<tr>
<td>2015</td>
<td>VIDEO: ‘Cancer target missed for 20,000 people’ <a href="http://bbc.in/1KiQ26q">http://bbc.in/1KiQ26q</a></td>
</tr>
<tr>
<td>2015</td>
<td>Cancer drug patient’s England move <a href="http://bbc.in/1EiZifB">http://bbc.in/1EiZifB</a></td>
</tr>
<tr>
<td>2015</td>
<td>The blind breast cancer detectors <a href="http://bbc.in/1BCWyAe">http://bbc.in/1BCWyAe</a></td>
</tr>
<tr>
<td>2015</td>
<td>NHS misses a year of cancer targets <a href="http://bbc.in/1AEAyVK">http://bbc.in/1AEAyVK</a></td>
</tr>
<tr>
<td>2015</td>
<td>VIDEO: Orange juice breach <a href="http://bbc.in/1AoB4A4">http://bbc.in/1AoB4A4</a></td>
</tr>
</tbody>
</table>
Visualization Output:

Graphical Analysis of BBC’s report on cancer in 2015

positive: 31

neutral: 80

negative: 12
Thank You !!!