

NLP TOOL

(Natural Language Processing)

User Case: iSocialCube (Social Networks Campaign Management)

What does the Customer need?

iSocialCube's (ISC) helps companies manage their marketing campaigns using as target audience Social Networks. By introducing Business Intelligence philosophy within their Technology they monitor and control the "Conversion" from prospect to sale using live data and Digital Marketing Analytics. Within these processes ISC feeds the decision-making process of the Customer with Sentiment Analysis provided by AyniTech's NLP Tool.

What does our NLP do?

NLP (Natural Language Processing) is a field in Computer Science related to artificial intelligence and linguistics that analyzes several phenomena within the human language. Some of the items that NLP gets into are: words lemmatization, syntax's phrase structure, extracting the meaning of a phrase, analyzing text beyond the limits of the phrase, and others. Its objective is determine context, sentiment and emotion in a phrase(s)

What Technologies do we use for our NLP?

NER (Named-Entity Recognition)

It is an extraction process based on the semantic structure. It's goal is to locate and classify the elements in the text on pre-defined categories such as: people names, organizations, places, timed expressions, quantities, monetary values, percentages, and others.

Machine Learning (ML)

It's a field within Artificial Intelligence that develops techniques for machines to "learn". Summarizing it creates computer programs that are capable of generalizing behaviors from unstructured information in the form of "examples". We use ML to carry out the sentiment analysis and emotions detection in documents.

Web Scraping

It's a technique used to extract information from websites through programming languages. Usually these programs simulate the navigation behavior of a human being on the web and then they go around the content on a web page (based on a group of rules pre-defined in the software). Generally it is used to compare pricing on web stores, integrate data from websites and collect information to train specific sets of data.

How do we do it?

Sentiment Analysis

With it we identify and extract subjective information from texts. Using this information we can determine the general contextual polarity of a document. To enhance text quality the program includes an orthographic corrector within the process.

Learning (Training Sets)

Our algorithm uses a group of supervised learning algorithms called Support Vector Machines (SVMs). They are currently considered robust, generalized and capable of supporting mix data entry (meaning having text and numeric characteristics together). It works comparing it with an example set (sample) for training, which is previously tagged (categorized) as positive or negative.

How do we obtain the models?

We use web scrapping techniques and third party APIs to extract and classify in topics our samples (Like online news, blog articles, product reviews, movies reviews, technology articles, twitter tendencies, Facebook tendencies, YouTube comments, and others). The models are mainly tagged by our SVMs, in order to enhance context some are classified by a Human Team.

What is the Outcome?

Sentiment Analysis

Will calculate the sentiment (positive, neutral or negative) of a document oriented to specific objectives set by the user. The document could be a: URL, Post, Tweet, Comment, Article, or others. We have several tailored models of expressions online, its application allows our customers to understand conversations, identify relevant content and act intelligently based on analytical results.

The resulting information can be used in a variety of cases that range from just monitoring to tendency analysis in social media.

Entity Extraction

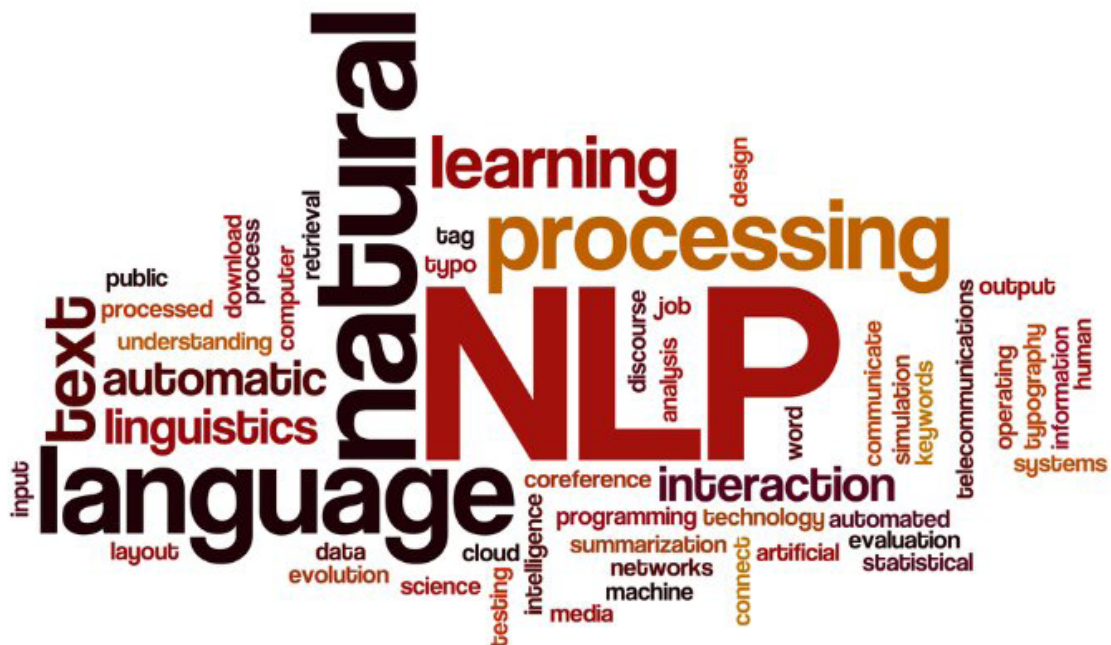
Our Named Entity Recognition process (NER) focuses on locating and classifying atomic elements on the text over predefined categories like: people names, organizations, locations, hourly expressions, quantities, values, percentages, and others. We use these categories to determine context and locate the text under a certain topic.

Emotional Analysis

This process carries out a subjective classification of the document, focusing on measuring sadness, happiness, anger, neutrality, inspiration, fun or fear.

Word Cloud

Based on the information obtained there several ways to present it, one of them is Word Cloud. An example of its applications is showing the words we extracted from its semantic root and cross the polarity and sentiment to present the terms that influenced on the sentiment or emotion.



Target Popular Phrases

We can detect those phrases that are influential and determinant in order to classify a text. These sentences can be graded with a sentiment or emotional score showing its relevance in the document. This score contributes on the key phrases analysis to be included on a marketing campaign, since we can build a clear image on how to construct and communicate our message more effectively.

Examples

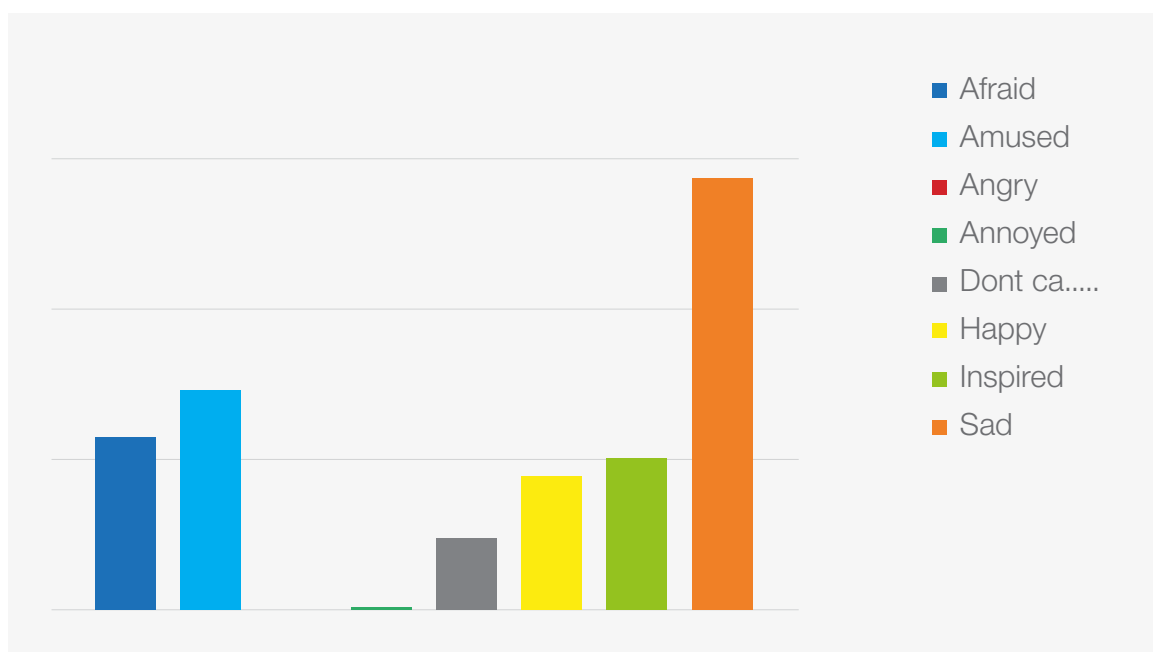
Emotional Analysis

Lets analyze the following text:

“100 years after the sinking of luxury cruise ship Titanic on April 14, several memorials all over the world were unveiled and various tributes held to commemorate one of the most tragic maritime disasters in history.

Titanic, though, is not the “worst” peacetime sea tragedy, but the sinking of the passenger ferry MV Doña Paz in the Philippines 25 years ago. While big-budget Hollywood movies have been made about the ill-fated maiden voyage of RMS Titanic, only small-production documentaries on the more than 4,000 Filipinos rushing to get home to their loved ones just in time for Christmas in 1987 have been produced.”

Result::



Sentiment Analysis

Text:

“On May 15th, Korean racing model Joo Da Ha passed away in a tragic car accident in an intersection located in Yeongam. While on her way to the 206 Asia Speed Festival, she was involved in a car accident; and although she was rushed to the hospital by paramedics, she was eventually declared deceased at 8:40AM KST. Five others involved in the accident were gravely injured and in critical condition. Joo Da Ha had previously won the award in the racing model section of the 2012 Asia Model Awards.”

Sentiment	Score
Negative	-0.104

Entity Extraction

This process extracts from the document all entities (individuals, organizations, dates, places, money, percentages, time, and

Pharrell Williams parodies his goofy *Grammys* hat with new viral video in all *USA*. This video is trending on platforms *Youtube* and *Vimeo*.

ID	Tag	Entity
1	Pharrell	Person
2	Williams	Person
3	Grammys	Organization
4	USA	Location
5	Youtube	Organization
6	Vimeo	Organization



Stay in touch

+51 1 2422786

sales@aynitech.com

Avenue Benavides 1238, Miraflores, Office No. 301