Knowledge bocconi: A new tool detects emotions in Italian social media posts

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"Troppo contenta del mio nuovo X-Corp Xd817!" ("Too satisfied of my new X-Corp Xd817!"). Happy outlier or general opinion of X-Corp's Italian customer base?

Opinion mining and brand management companies now routinely run sentiment analysis on social media to understand what aspects of a brand

are perceived positively or negatively by customers. In the best-case scenario, Artificial Intelligence tools autonomously monitor social media to identify and classify conversations about a brand in seconds. In the worst case, the task still has to be painstakingly conducted by hand.

More advanced tools are able to identify not just the simple sentiment, but more nuanced emotions (anger, joy, sadness, etc.) expressed in a text. However, a severe limitation of most of these tools is that they work well in English—but other languages, including Italian, have been somehow neglected. As sentiment analysis has turned into a booming market, these tools are usually also quite expensive. Difficult times for small Italian startups wanting to monitor their online success.

Federico Bianchi, Debora Nozza, and Dirk Hovy, at the Bocconi Data and Marketing Insights (DMI), a research unit of the BIDSA research center, have now released FEEL-IT, a package for sentiment analysis and emotion recognition in Italian. The data set and model are freely available on the web and are described in a scholarly, peer-reviewed paper, to be presented on Monday, 19 April at WASSA 2021, the 11th Workshop on Computational Approaches to Subjectivity, Sentiment & Social Media Analysis. The tool (an open-source Python library available here) tackles both sentiment analysis and emotion recognition.

The researchers manually analyzed and classified more than 2,000 tweets in Italian from a series of trending Twitter topics, which cover a multitude of themes, and trained their system on these tweets. The emotions detected in the tweets were anger, joy, fear, and sadness. The researchers then tested the quality of their system's predictions on a set of comments of music videos and advertisements posted on YouTube and Facebook.

"Our tests show that the results are remarkable," explains Nozza, "With the high-quality data and a powerful neural model called umBERTo,

they achieve an accuracy of 84%."

The scientific community (and anyone with some coding knowledge) can now use the new dataset to build their own tools, or run the ready-to-use versatile model to detect sentiment and emotions in social media posts on a wide range of topics.

If you do not (yet) know how to code, fear not: the researchers are working on a web service that will make their work even more widely accessible.

More information: Open-source Python library: github.com/MilaNLProc/feel-it

Provided by Bocconi University

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