Proceedings of EMSASW2018 - 4th Workshop on Sentic Computing, Sentiment Analysis, Opinion Mining, and Emotion Detection

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Preface

As the Web rapidly evolves, people are becoming increasingly enthusiastic about interacting, sharing, and collaborating through social networks, online communities, blogs, wikis, and the like. In recent years, this collective intelligence has spread to many different areas, with particular focus on fields related to everyday life such as commerce, tourism, education, and health, causing the size of the social Web to expand exponentially.

To identify the emotions (e.g. sentiment polarity, sadness, happiness, anger, irony, sarcasm, etc.) and the modality (e.g. doubt, certainty, obligation, liability, desire, etc.) expressed in this continuously growing content is critical to enable the correct interpretation of the opinions expressed or reported about social events, political movements, company strategies, marketing campaigns, product preferences, etc.

This has raised growing interest both within the scientific community, by providing it with new research challenges, as well as in the business world, as applications such as marketing and financial prediction would gain remarkable benefits.

One of the main application tasks in this context is opinion mining [1], which is addressed by a significant number of Natural Language Processing techniques, e.g. for distinguishing objective from subjective statements [2], as well as for more fine-grained analysis of sentiment, such as polarity and emotions [9]. Recently, this has been extended to the detection of irony, humor, and other forms of figurative language [3]. In practice, this has led to the organisation of a series of shared tasks on sentiment analysis, including irony and figurative language detection (SemEval 2013, 2014, 2015, 2018), sometimes focused on the domain of financial technology [25, 26, 27, 28] with the production of annotated data and development of running systems. A similar challenge for irony polarity detection has been proposed for the Italian language at SENTIPOLC[1], indicating a growing interest about irony detection in the international NLP community. Similar challenges, not involving directly an irony detection task, but in which irony detection may prove useful, have been organized also for French (DEFT2015[2]) and Spanish (TASS2015[3]). In [10], the authors propose an algorithm for irony detection based on semantic similarity. Other studies such as [11, 12, 13, 14] consider features such as ambiguity, polarity etc.. However, the later also relies on decision trees.

However, existing solutions still have many limitations leaving the challenge of emotions and modality analysis still open. For example, there is the need for building/enriching semantic/cognitive resources for supporting emotion and modality recognition and analysis. Additionally, the joint treatment of modality and emotion is, computationally, trailing behind, and therefore the focus of ongoing, current research. Also, while we can produce rather robust deep semantic analysis of natural language, we still need to tune this analysis to-

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[1]http://www.di.unito.it/~tutreeb/sentipolc-evalita14/
[2]https://deft.limsi.fr/2015/
[3]https://gplsi.dlsi.ua.es/sepln15/en/node/36

wards the processing of sentiment and modalities, which cannot be addressed by means of statistical models only, currently the prevailing approaches to sentiment analysis in NLP. The hybridization of NLP techniques with Semantic Web technologies is therefore a direction worth exploring, as recently shown in [4, 6, 7, 8, 5, 17, 21, 24, 23, 22].

This workshop intends to be a discussion forum gathering researchers and industries from Cognitive Linguistics, NLP, Machine Learning, Semantic Web, Big Data, and related areas for presenting their ideas on the relation between Semantic Web and the study of emotions and modalities.

Opinion mining, sentiment analysis, analysis of emotions and modalities are popular topics in the Natural Language Processing and Linguistics research fields. Regular workshops and challenges (shared tasks) on these themes are organised as co-located events with major conferences, such as IJCAI and ACL. Another recently organised related event is the MOMA (Models for Modality Annotation), a workshop held in London (April 2015) in conjunction with the International Conference on Computational Semantics (IWCS 2015). Our workshop intends to complement these events, focusing on the relation between these topics and the Semantic Web.

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Contents