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FACULTE DES SCIENCES DHAR EL MAHRAZ FES

CENTRE D'ETUDES DOCTORALES
«SCIENCES ET TECHNOLOGIES»
مركز الدراسات الدكتوراه
"العلوم والتكنولوجيا"

AVIS DE SOUTENANCE DE THESE

Le Doyen de la Faculté des Sciences Dhar El Mahraz –Fès – annonce que

Mme (elle) **: GRISSETTE Hanane**

Soutiendra **: le 11/12/2021 à 10H**

Lieu : Centre polyvalent des Etudes doctorales (Salle 4)

Une thèse intitulée :

Learnig Sentiment and Affects from Large Scale Patients' Narratives and Biomedical Documents using Neural Netwotks and Sentic Computing COVID-19 Case Study

En vue d'obtenir le Doctorat
FD : Sciences et Technologies de l'Information et de la Communication (STIC)
Spécialité : Informatique
Devant le jury composé comme suit :

	NOM ET PRENOM	**GRADE**	**ETABLISSEMENT**
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LEARNING SENTIMENT AND AFFECTS FROM LARGE SCALE PATIENTS' NARRATIVES AND BIOMEDICAL DOCUMENTS USING NEURAL NETWORKS AND SENTIC COMPUTING: COVID-19 CASE STUDY

Abstract:

Social networks have become widely used for understanding patients shared experiences, and reaching a vast audience in a matter of seconds. Patient narratives posted on social networks and health-related platforms may reflect a patient's health status in terms of observations and contain much objective information, such as descriptions of examinations and interventions. Sentiment Analysis is the study that aims at recognizing, interpreting, processing, and simulating human emotions and affects.

Beginning with a brief review of the general area of sentiment analysis and an examination of the work undertaken so far in the bio-medical domain, this thesis posits a case for constructing depend-domain comprehension of different bio-medical components within text, as a means to better understand the natural language of generated patients narratives on social networks.

The automatic generation of features without human intervention is the most critical task for biomedical sentiment analysis. Regarding the high dynamicity of shared patient narrative data, the lack of formal medical language sentiment dictionaries prevents retrieval of the appropriate sentiment, which is unapproachable and can be prone to annotator bias. By designing affective approaches to model both unstructured texts and structured bio-medical knowledge, we can incorporate additional evidence from drug-related patterns structures beyond texts. To achieve our goals, we present different approaches to construct medication-related information by incorporating the existing concept-based bio-medical relations, as well as performing deep content analysis with some of the well-developed neural networks methods. As this detailed analysis will demonstrate, while some problems in performance remain despite the development and implementation of the different neural networks methods, sentiment analysis of patient-generated narratives is indeed viable and achieves a classification accuracy of 91.4% on the gathered data from varied social networks platforms such as Twitter. Furthermore, the models and data can serve as a great tool to automatically report treatment issues, drug misuse, new infectious disease symptoms, especially for detecting different drug reaction descriptions from patients generated narratives on social networks.

This thesis examines how sentiment analysis methods emphasize correctly on bio-medical entities related to the extraction of different data-object properties, and contextual-semantics dependencies for a given aspect. The relevant encoding of affective information conveyed regarding medication subjects clearly reveals defined roles and expectations that can have a positive impact on public health.

Keywords: Sentiment Analysis, Affective Analysis, Sentic Computing, Neural networks, Patients' Narratives, Social Networks.