IJCNLP 2011

Proceedings of
the Workshop on
Sentiment Analysis where
AI meets Psychology (SAAIP)

November 13, 2011
Shangri-La Hotel
Chiang Mai, Thailand

AFNLP

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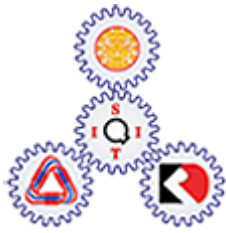Thailand Convention and Exhibition Bureau (TCEB)

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Preface

In recent times, research activities in the areas of Opinion, Sentiment and/or Emotion in natural language texts and other media are gaining ground under the umbrella of affect computing. Huge amount of text data are available in the Social Web in the form of news, reviews, blogs, chats and even twitter. Sentiment analysis from natural language text is a multifaceted and multidisciplinary problem. The existing reported solutions or available systems are still far from perfect or fail to meet the satisfaction level of the end users. There are many conceptual rules that govern sentiment and there are even more clues (possibly unlimited) that can map these concepts from realization to verbalization of a human being. Human psychology that relates to social, cultural, behavioral and environmental aspects of civilization may provide the unrevealed clues and govern the sentiment realization. In the present scenario we need constant research endeavors to reveal and incorporate the human psychological knowledge into machines in the best possible ways. The important issues that need attention include how various psychological phenomena can be explained in computational terms and the various artificial intelligence (AI) concepts and computer modeling methodologies that are most useful from the psychologist's point of view.

In addition to Question Answering or Information Retrieval systems, Topic-sentiment analysis can be applied as a new research method for mass opinion estimation (e.g., reliability, validity, sample bias), psychiatric treatment, corporate reputation measurement, political orientation categorization, stock market prediction, customer preference study, public opinion study and so on. Regular research papers continue to be published in reputed conferences like ACL, EMNLP or COLING. There have been an increasing number of efforts in shared tasks such as SemEval 2007 Task#14: Affective Text, TAC 2008 Opinion Summarization task, TREC-BLOG tracks since 2006 and relevant NTCIR tracks since 6th NT-CIR that aim to focus on different issues of opinion and emotion analysis. Several communities from sentiment analysis have engaged themselves to conduct relevant conferences, e.g., Affective Computing and Intelligent Interfaces (ACII) in 2009 and 2011 and workshops such as "Sentiment and Subjectivity in Text" in COLING-ACL 2006, "Sentiment Analysis – Emotion, Metaphor, Ontology and Terminology (EMOT)" in LREC 2008, Opinion Mining and Sentiment Analysis (WOMSA) 2009, "Topic-Sentiment Analysis for Mass Opinion Measurement (TSA)" in CIKM 2009, "Computational Approaches to Analysis and Generation of Emotion in Text" in NAACL 2010, Workshop on Computational Approaches to Subjectivity and Sentiment Analysis (WASSA) in ECAI 2010 and in ACL 2011, FLAIRS 2011 special track on "Affect Computing" and so on.

This workshop aims to bring together the researchers in multiple disciplines such as computer science, psychology, cognitive science, social science and many more who are interested in developing next generation machines that can recognize and respond to the sentimental states of the human users and serve the society.

The workshop starts with an invited keynote talk titled "What are Subjectivity, Sentiment, and Affect?" by Prof. Eduard Hovy. The talk outlines a model of sentiment/opinion and affect, and show that they appear in text in a fairly structured way, with various components. The proper understanding of a text in terms of sentiments, opinions, and affects requires the reader as well as the system to build some kind of person profile of the author. The talk concludes by opening the door to a whole new line of research with many fascinating and practical aspects.

Bermingham and Smeaton argue that a diverse range of political insight and commentary in Twitter can model political sentiment effectively enough to capture the voting intentions of a nation during an election campaign. The Plurk micro-blogging platform is used by Tang and Chen to model emotion

generation from writer and reader perspectives based on the combination of linguistic, social, behavioral and textual features in Support Vector Machine (SVM)-based classifiers. Munezero et al. introduce the antisocial behavior detection (ASBD) model for portraying the emotions pertaining to antisocial behavior.

Amgoud et al. concentrate on pairing opinion analysis with argument extraction in order to identify why opinions about a certain feature are positive or negative and also analyze the preferences of customers if the customer recommendations are given. Cambria et. al. have proposed the Sentic Corner, an intelligent user interface that dynamically collects audio, video, images and text related to the user's current feelings and activities as an interconnected knowledge base.

From the perspectives of multilingualism, Banea et al. explore the ability of senses aligned across languages to carry coherent subjectivity information. They have worked with two methods that are able to incorporate subjectivity information originating from different languages, namely co-training and multilingual vector spaces. Inui and Yamamoto describe a method for multilingual review classification by employing machine translation techniques to remove language gaps in the dataset. The sentiment-oriented sentence filtering module reduces translation errors that occur as a side-effect.

Das and Bandyopadhyay reports different interesting statistics of emotions based on individual as well as combinational roles of the general variables (intensity, timing and longevity) and physiological variables (psycho-physiological arousals) from the situational statements of the ISEAR (International Survey on Emotion Antecedents and Reactions) dataset. Chandra et al. seek to enhance the chat experience using an intelligent adaptive user interface exploiting semantics and leveraging Sentic Computing. Roshchina et al. have proposed a personality-based recommender system, TWIN ("Tell me What I Need"), that focuses on User Profile construction in the travelling domain. Ahmad et al. show that a diachronic study of the coverage of the named-entity dictionary crafted from electoral lists with key financial and economic terms added, supplemented by an affect dictionary from the General Inquirer system, helps to distinguish the winner from the losers in an election.

Lee and Renganathan present the use of Maximum Entropy technique for Chinese sentiment analysis to estimate the polarity of given comments on electronic products. Fang and Chen incorporate sentiment lexicons as prior knowledge with SVM technique and describe a method to automatically generate domain specific sentiment lexicons to improve the accuracy of sentiment analysis. The basic NLP techniques like NGram, POS-Tagged NGram along with several machine learning algorithms are used by Bakliwal et al. to identify the polarity of the movie and product reviews.

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Keynote Speaker:

Prof. Eduard Hovy, Information Sciences Institute of the University of Southern California

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Conference Program

Sunday, November 13, 2011

8:45–9:00   Opening Remarks

9:00–10:00   *Keynote: What are Subjectivity, Sentiment, and Affect?*
Eduard Hovy

Session 1:

10:30–10:50   *On Using Twitter to Monitor Political Sentiment and Predict Election Results*
Adam Bermingham and Alan Smeaton

10:50–11:10   *Taking Refuge in Your Personal Sentic Corner*
Erik Cambria, Amir Hussain and Chris Eckl

11:10–11:30   *Towards automatic detection of antisocial behavior from texts*
Myriam Munezero, Tuomo Kakkonen and Calkin Montero

11:30–11:45   *User Profile Construction in the TWIN Personality-based Recommender System*
Alexandra Roshchina, John Cardiff and Paolo Rosso

11:45–12:00   *Enriching Social Communication through Semantics and Sentics*
Praphul Chandra, Erik Cambria and Alvin Pradeep

Lunch: 12:00–14:00

Session 2:

14:00–14:20   *Emotion Modeling from Writer/Reader Perspectives Using a Microblog Dataset*
Yi-jie Tang and Hsin-Hsi Chen

14:20–14:35   *Introducing Argumention in Opinion Analysis: Language and Reasoning Challenges*
Leila Amgoud, Florence Bannay, Charlotte Costedoat, Patrick Saint-Dizier and Camille Albert

14:35–14:55   *Sense-level Subjectivity in a Multilingual Setting*
Carmen Banea, Rada Mihalcea and Janyce Wiebe

14:55–15:15   *Applying Sentiment-oriented Sentence Filtering to Multilingual Review Classification*
Takashi Inui and Mikio Yamamoto

15:15–15:30   *Chinese Sentiment Analysis Using Maximum Entropy*
Huey Yee Lee and Hemnaath Renganathan

Coffee/Tea Break: 15:30–16:00

Sunday, November 13, 2011 (continued)

Session 3:

16:00–16:20   *Analyzing Emotional Statements – Roles of General and Physiological Variables*
Dipankar Das and Sivaji Bandyopadhyay

16:20–16:35   *Incorporating Lexicon Knowledge into SVM Learning to Improve Sentiment Classification*
Ji Fang and Bi Chen

16:35–16:55   *What is new? News media, General Elections, Sentiment, and Named Entities*
Khurshid Ahmad, Nicholas Daly and Vanessa Liston

16:55–17:15   *Towards Enhanced Opinion Classification using NLP Techniques.*
Akshat Bakliwal, Piyush Arora, Ankit Patil and Vasudeva Varma