1st International Workshop on Automatic Sentiment Analysis in the Wild (WASA'15)

Organisation

Chairs:

Maja Pantic   (Imperial College London, UK)

Björn Schuller   (University of Passau, DE,
                              Imperial College London, UK)

Elnar Hajiyev   (RealEyes, EE/UK)

Florian Eyben   (audEERING UG, DE)

Organisation

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Sponsors

Motivation & Scope

Motivation:

- Forum for research on technologies for analysis of human sentiment, and empathic and social behaviour observed in the wild.

- Machine analysis of human sentiment in response to multimedia content, and automatic estimation of sentiment, rapport and empathy shown by people involved in unscripted face-to-face or computer-mediated interaction

- Progressing rapidly with new or pending applications:
  Next-gen computing & multimedia, e.g.,
  affective multimodal interfaces / intelligent HCI,
  entertainment technology / interactive multi-party games,
  user-centric healthcare and online services,
  automatic market research analysis, etc.
  psychology, politics,, …

Motivation & Scope

Scope:

- Social Intelligence and Sentiment Modeling
- Sentiment, empathy and social behavior analysis from facial, vocal and bodily expressions recorded in the wild
- Expressive speech analysis in social interactions in the wild
- Human gesture and action recognition in social interactions
- Perceptual, empathic, and socially-aware user interfaces
- Empathic multimedia recommendation systems
- Databases for training and testing
- Empathic and socially-aware computing and applications

- Many related topics…

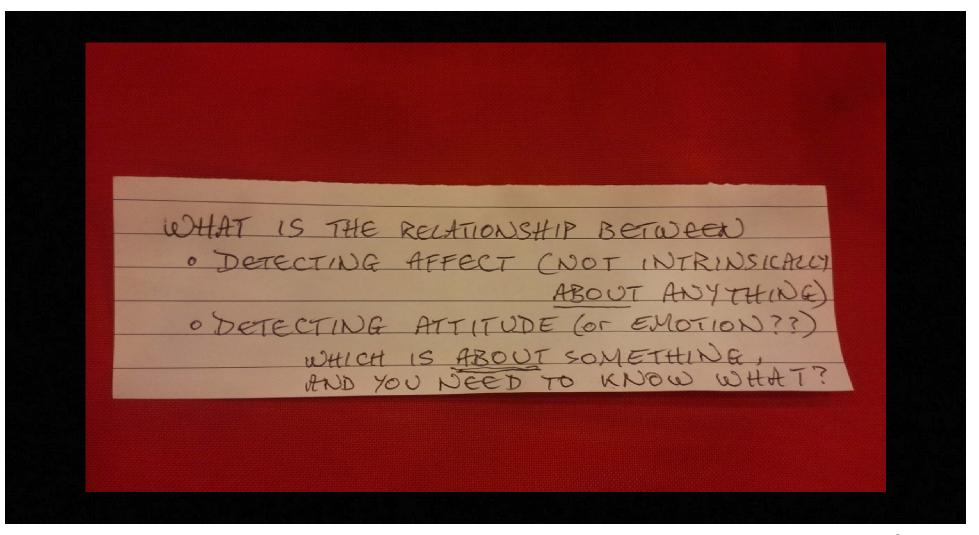| Time	
09:00-9:15	**Opening**
	Session 1 - Vision, Chair: Maja Pantic
9:15-10:00	Keynote 1: Jeffrey Cohen
10:00-10:25	**Sentiment Apprehension in Human-Robot Interaction with NAO** Jie Shen, Ognjen Rudovic, Shiyang Cheng and Maja Pantic
10:25-11:00	Coffee break
	Session 2 Sentiment and affect recognition, Chair: Jeffrey Cohen
11:00-11:25	**An Ensemble Convolutional Echo State Networks for Facial Expression Recognition** Guihua Wen, Huihui Li and Danyang Li
11:25-11:50	**Detection of Negative Emotions in Speech Signals Using Bags-of-Audio-Words** Florian Pokorny, Franz Graf, Franz Pernkopf and Björn Schuller
11:50-12:15	**Neural Conditional Ordinal Random Fields for Agreement Level Estimation** Nemanja Rakicevic, Ognjen Rudovic, Stavros Petridis and Maja Pantic
12:30-13:50	Lunch break
	Session 3 - In the wild, Chair: Björn Schuller
13:50-14:35	Keynote 2: Gábor Szirtes
14:35-15:00	**iHEARu-PLAY: Introducing a game for crowd-sourced data collection for affective computing** Simone Hantke, Tobias Appel, Florian Eyben and Björn Schuller
15:00-15:25	**GOAALLL!: Using sentiment in the World Cup to explore theories of emotion** Jonathan Gratch, Gale Lucas, Jeffrey Nichols and Nikolaos Malandrakis
15:25-16:00	Coffee break
	Session 4 Final remarks, Chair: Björn Schuller
16:00-16:45	Keynote 3: Roddy Cowie
16:45-17:30	**Panel Discussion** with Key Note Speakers, Organisers, and Public
17:30	**Closing** (including Award)

And Next...

- **Journal Special Issue**
  IEEE Transactions on Affective Computing
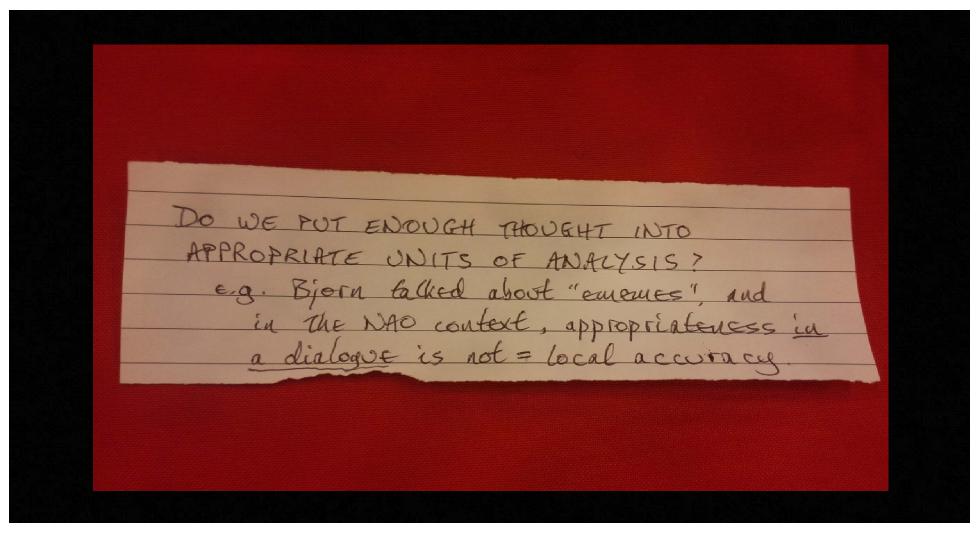
- **WASA 2016?**

- **Join: W3C W3C Linked Data Models for Emotion and Sentiment Analysis Community Group**
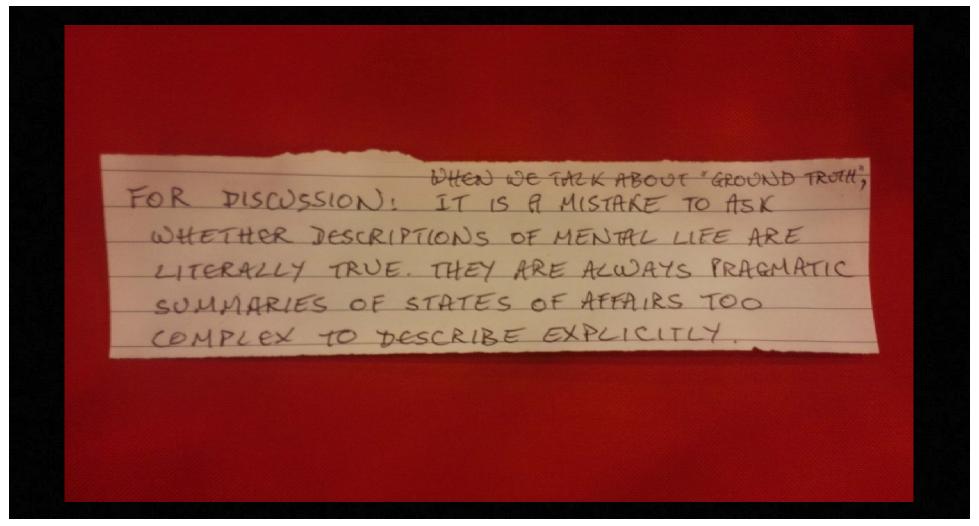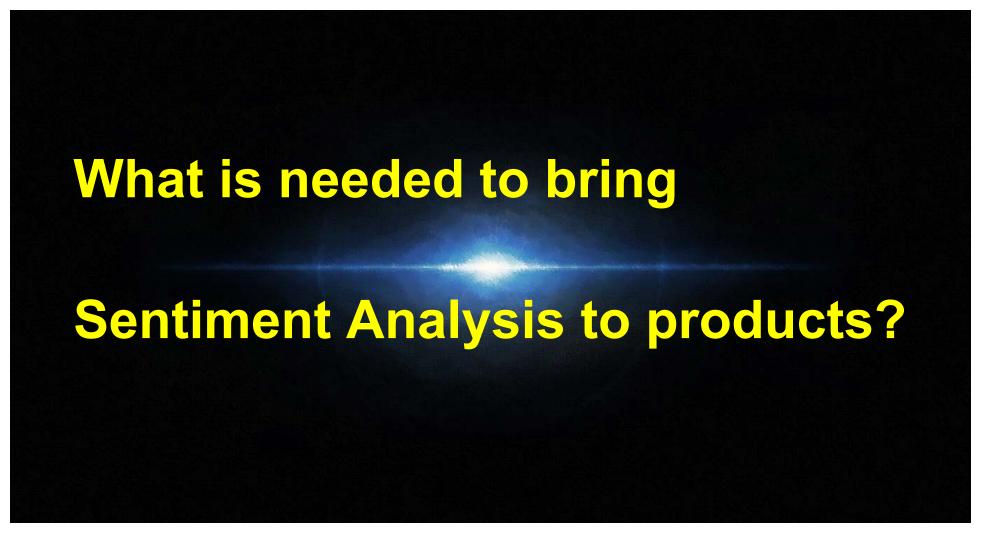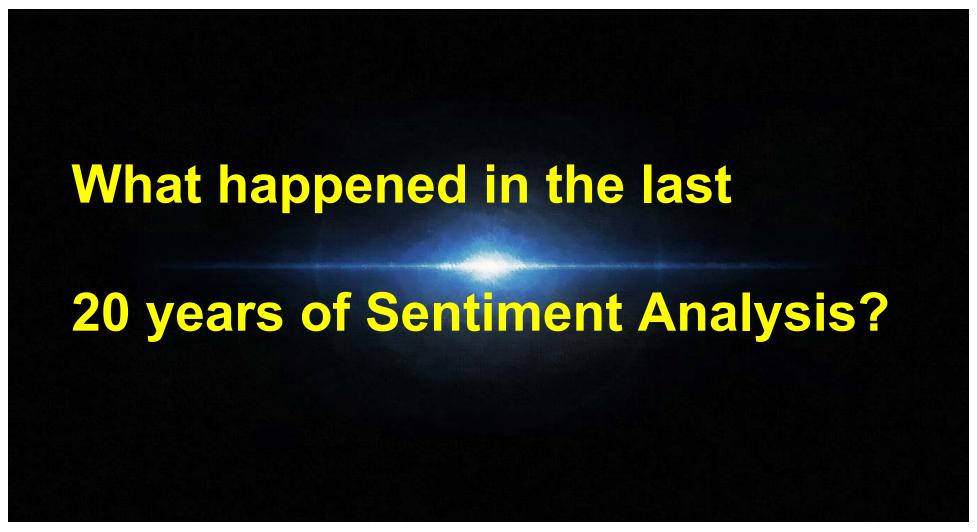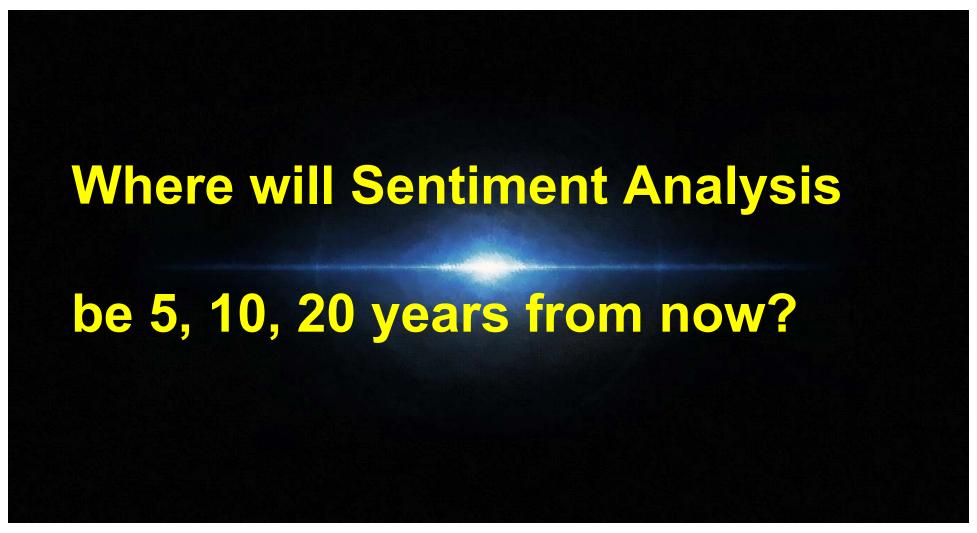
- **Stay tuned: http://sewaproject.eu/**

Panel Discussion

Panel Discussion

Do we put enough thought into appropriate units of analysis? e.g. Bjorn talked about "enemies", and in the NAO context, appropriateness in a dialogue is not = local accuracy.

Panel Discussion

FOR DISCUSSION! WHEN WE TALK ABOUT "GROUND TRUTH", IT IS A MISTAKE TO ASK WHETHER DESCRIPTIONS OF MENTAL LIFE ARE LITERALLY TRUE. THEY ARE ALWAYS PRAGMATIC SUMMARIES OF STATES OF AFFAIRS TOO COMPLEX TO DESCRIBE EXPLICITLY.

Panel Discussion

How does Sentiment relate to

Affect, Emotion, Valence?

Panel Discussion

What makes

***"in the Wild"* "in the Wild"?**

Panel Discussion

What is needed to bring

Sentiment Analysis to products?

Panel Discussion

What happened in the last

20 years of Sentiment Analysis?

Panel Discussion

Where will Sentiment Analysis

be 5, 10, 20 years from now?

Panel Discussion

What are the *societal and ethical implications?*

Panel Discussion

What are the _Grand Challenges_

in today's Sentiment Analysis?

Panel Discussion

How can we close the gap

between *"Sentiment Analysis"*

and *"Affective Computing"*?

Panel Discussion

Panel Discussion

What is *YOUR* most urgent question?

Best Paper Award

GOAALLL!: Using Sentiment in the World Cup to Explore Theories of Emotion

Jonathan Gratch,[1] Gale Lucas,[1] Nikolaos Malandrakis,[2] Evan Szablowski,[3] Eli Fessler[4] and Jeffrey Nichols[5]

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[2]University of Southern California Signal Analysis and Interpretation Laboratory, Los Angeles, CA
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[4]Pomona College, Claremont, CA
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Abstract—Sporting events evoke strong emotions amongst fans and thus act as natural laboratories to explore emotions and how they unfold in the wild. Computational tools, such as sentiment analysis, provide new ways to examine such dynamic emotional processes. In this article we use sentiment analysis to examine tweets posted during 2014 World Cup. Such analysis gives insight into how people respond to highly emotional events, and how these emotions are shaped by contextual factors, such as prior

This article briefly reviews the importance of sporting events as a natural laboratory to study human behavior, especially emotion. We next describe a corpus we collected from the 680 million tweets generated during the 2014 World Cup. Our work on analyzing this data is in its preliminary stages but we illustrate one example of its potential. We use sentiment analysis techniques over this dataset to examine a

Best Paper Award

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AWARDED TO

GOAALLL!: Using Sentiment in the World Cup to Explore Theories of Emotion

as contributed by

Jonathan Gratch, Gale Lucas, Jeffrey Nichols & Nikolaos Malandrakis

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SEWA Coordinator

Workshop Chair

Keynote: Jeff

Jeffrey Cohn is a professor of psychology and psychiatry at the University of Pittsburgh and an adjunct professor at the Robotics Institute, Carnegie Mellon University. He has led interdisciplinary and inter-institutional efforts to develop advanced methods of automatic analysis and synthesis of facial and vocal expression and applied them to research in human emotion, interpersonal processes, social development, and psychopathology. He is an associate editor for *IEEE Transactions on Affective Computing*. He co-chaired the *IEEE International Conference on Automatic Face and Gesture Recognition* 2015 and 2008, the *International Conference on Multimodal Interfaces* 2014, the *International Conference on Affective Computing and Intelligent Interaction* 2009 and the most recent FERA Challenge. His research is supported in part by the U.S. National Institutes of Health and the U.S. National Science Foundation.

Keynote: What are we measuring? How well are we doing?

I address two questions. One, what are we measuring in affective computing: Internal states or person x environment interactions? Too often we assume that we are in the business of "emotion" recognition. I will argue instead that affect is relational and its indices best understood in the context of the individual's or group's strivings, goals, and dynamics. I will emphasize novel measures of social behavior in individuals, dyads, and groups and give examples from our recent research in a variety of settings with both infants and adults. The other question is how "good" our measures are. How would we know? Comparing results between different studies or even within the same study is fraught with uncertainty. We have many metrics from which to choose and we do. We make assumptions about ground truth that are open to question. I will consider several issues: Construct validity of ground truth, reliability, training set size, skew, and chance agreement. Unless these are considered, meaningful comparisons between findings are not possible.

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Keynote: Gabor

Gabor Szirtes studied chemistry and physics then received his PhD in computer science at Eotvos University, Hungary. In his academic years he was affiliated with several neuroscience institutes like University of Tuebingen and Columbia University where he applied machine learning approaches to functional modeling of memory and vision. In 2012 he joined Realeyes where he helped build one of the largest facial expression database and created a commercial grade facial expression recognition system which is the core technology behind the company's services. Currently he is leading the research and development team. He is father to 3 girls so he does have a personal view on sentiments!

Keynote: Beyond words: multi-modal sentiment analysis from an industrial perspective

Sentiment analysis together with opinion mining traditionally refer to the analysis of people's opinions, sentiments, evaluations, attitudes, and emotions from written language. Starting from the 90's the increasing volume of available digital content lead to the development of very efficient automated text mining tools which in turn helped to modernize diverse fields from political science to health care. Now we witness another big jump as multimedia content is quickly becoming dominant. In addition, we spend an increasing amount of time online, audio-visually connected to the web (thus contributing to the increase of the data volume). We are in search for new tools and approaches that can help analyze multi-modal data in fast and robust fashion. The demand for such tools is clearly visible, but there are complex challenges to address first. I present an application oriented view on some outstanding issues and argue that stronger interaction between industry and science (in particular, social psychology) is needed if we want to create truly useful tools and do not want to always rely on a "Like" button.

Keynote: Roddy

Roddy Cowie graduated (from Stirling) in Philosophy and Psychology, and his PhD (from Sussex) compared human and machine vision. He has worked at Queen's, Belfast since 1975, on topics from individual differences in vision, to social variation in speech, to the experience of becoming deaf. Those highlighted issues involving emotion, and that has been his main focus since the 1990s. He was central to a series of projects on emotion and computing from the 1990s, and retains an active interest in the area. He has also tried to highlight the role of emotion in areas where it tends to be underestimated, including music, therapies for chronic illnesses, and the dynamics of peace and conflict.

"Father of HUMAINE"

General Chair ACII 2015

Keynote: Towards an ideal model of sentiment

Sentiment analysis deals with the emotional content of transmitted messages. Traditionally, that meant text. However, messaging has become multimedia. Broadening to deal with that is not just about extracting from different sources (pictorial, sound, etc). It requires descriptions that capture the different kinds of emotional content that are prominent in different sources. Verbal categories are a default. Different sets of categories are available, some oriented to intense emotion, some to pervasive everyday experiences. Dimensional descriptions have computational advantages, and carry partly comparable information. Both can be understood as partial descriptions of the systems that generate emotion, and deriving fuller descriptions of those is an obvious goal. Several more specialised kinds of description are potentially relevant. Social stances are important: politeness is the best researched example. Landscapes often feature in pictorial media: they evoke reactions that are distinctive, but little discussed. Music is also prominent. Specialised dimensional descriptions are well developed: interactions with the use of the music are beginning to be studied, as are the text-music interactions that make song. Humour and irony potentially transform any apparent content. Integrating those is a deeply challenging ideal.

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