# ERM4HCI 2014 – The 2nd Workshop on Emotion Representation and Modelling in Human-Computer-Interaction-Systems

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## ABSTRACT

In this paper the organisers present a brief overview of the second workshop on Emotion Representation and Modelling in Human-Computer-Interaction-Systems. The ERM4HCI 2014 workshop is again held in conjunction with the 16th ACM International Conference on Mulitmodal Interaction (ICMI 2014) taking place in Instanbul, Turkey. This year's ERM4HCI is focussed on the characteristics which are used to describe and further, to identify emotions. Moreover, the corresponding relations to personality and user state models are of interest. Especially, options towards a minimal set of characteristics will be discussed in the contex of multimodal affective Human-Computer Interaction.

## Categories and Subject Descriptors

H.1.2 [**User/Machine Systems**]: Human factors, Human information processing; H.5 [**INFORMATION INTERFACES AND PRESENTATION**]: Multimedia Information Systems, User Interfaces

## Keywords

Multimodality; Emotion Representation; Emotion Modelling; Human-Computer-Interaction; User Adaptation; Individualisation; Workshop; Summary

## 1. INTRODUCTION

[1]While developing user adaptable Human-Computer-Interaction (HCI), the role of emotions occurring during interaction gained in attention over the past years. Especially emotions, being widely accepted as essential to Human-Human-Interaction, became increasingly interesting for system designers of affective interfaces in order to provide natural, user-centred interaction. To adequately incorporate emotions in modern HCI systems, results from various and varying research disciplines must be combined.

Various difficulties in the emotion representation may arise, depending on the utilised modalities and the aim of the incorporate model. Therefore, this workshop concentrates on emotion representations, the characteristics used to describe and identify emotions and their relation to personality and user state models. Such relation can be age, gender, physical/cognitive load, etc. In this context we encourage a wide discussion about possible interdependencies of characteristics on an intra- and intermodality level. Interdependencies of characteristics may occur if two characteristics are influenced by the same physiological change in the observed user. Furthermore, other factors (technical, constructive, etc.) can cause interdependencies as well.

In a more broader sense, the workshop aims at identifying a minimal set of characteristics to represent and recognise emotions in multi-modal affective HCI. For this, some of the typical issues arising in multi-modal data processing for affective systems will be addressed. Such issues are, for instance, timing aspects, confidence metrics, discretisation issues and issues related to the translation between different emotion models.

Generally, the workshop offers a platform to discuss approaches for feature selection from a multimodal or physiological point of view. Moreover, theoretical papers contributing to the understanding of emotions in order to aid

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[1]The text is taken in parts from the workshop's website including the call for paper (cf. [1]).

in the technical modelling of emotions for affective systems are intended. For this, the workshop provides a forum for discussions on the necessary prerequisites for consistent and interoperable emotion representations in multi-modal affective systems.

The main topics of the workshop are

- Personality models and the incorporation of emotion models

- Multimodal aspects of emotion recognition and representation

- Physiology of emotion representations and characteristics

- Feature selection for emotion recognition in HCI

- Interdependencies of emotion recognition features

- Minimal (multimodal) feature sets for affective HCI systems

- Approaches to the interoperability of emotion models

- Timing in multimodal emotion recognition scenarios

- Confidence metrics for emotion recognition/classification in HCI

- Consistent modelling of emotions in multimodal HCI systems

- Correlation of user states and emotion recognition features

- User state specific emotion modelling

- Domain specific emotion representations and interfaces

- Technical aspects of multimodal emotion recognition

## 2. ORGANISERS, PROGRAM COMMITTEE, AND REMARKS

### 2.1 Workshop Organisers

*Kim Hartmann*, Otto von Guericke University Magdeburg, Germany
*Björn Schuller*, Imperial College London, UK
*Ronald Böck*, Otto von Guericke University Magdeburg, Germany

## 2.2 Program Committee

*Roman Bednarik*, University Eastern Finland, Finland
*Jonas Beskow*, KTH Stockholm, Sweden
*Nadia Bianchi-Berthouze*, University College London, UK
*Antonio Camurri*, University Genova, Italy
*Marc Cavazza*, Teesside University, UK
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*Dirk Reichardt*, DHBW Stuttgart, Germany
*Jianhua Tao*, Chinese Academy of Sciences, China
*Khiet Truong*, University Twente, The Netherlands
*Michel Valstar*, University Nottingham, UK
*Andreas Wendemuth*, Otto von Guericke Magdeburg, Germany

## 2.3 Review Process

All accepted papers received at least two double-blind reviews.

For this, we would like to thank all PC members for their time and helpful contributions.

## 2.4 Acknowledgement

We acknowledge the continuous support and the fruitful discussion of *Klaus R. Scherer*, University of Geneva, Switzerland.

## 3. REFERENCES

[1] K. Hartmann, R. Böck, K. R. Scherer, and B. Schuller. Erm4hci website. *http://erm4hci.kognitivesysteme.de/*, September 08, 2014.