Editorial

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Human emotions are considered very important in human-human interaction, but only recently have they started being taken into account in human-computer interaction (HCI). In fact, emotions affect human thought and behaviour to a large extent. Thus, the whole

issue of HCI has to take into account the emotional state of its users. Unfortunately, expression of emotion is very idiosyncratic and varies from individual to individual. However, as researchers in the last decade have discovered dozens of scientific findings that illuminate important roles of emotion in intelligent human functioning, human affect has started to be incorporated into novel, sophisticated HCI systems. While trying to recognise emotional states, we may have to combine information from multiple channels or modalities of interaction. Indeed, human emotions are usually expressed in many ways. As an example, when we articulate speech, we usually move the head and, simultaneously, form various facial emotions. This is further corroborated by recent research in the fields of psychology and neurology which indicates that both body and mind are involved in emotional experiences and emotions influence people's bodily movements.

The previous give rise to a need for successfully combining evidence from many modes of interaction for computer systems to be able to generate as valid hypotheses as possible about their users' emotions. To achieve this, there is a great deal of very challenging problems yet to be solved.

The aim of this special issue is to shed light on some of these needs and to broaden our understanding of past and potential approaches to affective computing and technologies to address them.

We have received a large number of submissions to the special issue. Each submitted paper was reviewed by at least two independent reviewers for novelty and clarity of the research reported in it. Additionally, as guest co-editors, we looked over all the manuscripts. For inclusion in the special issue, we have selected four papers from those submitted.

The first paper, by Kostek and Plewa, is on 'Parametrisation and correlation analysis applied to music mood classification'. In this paper, the authors present a study on music mood categorisation and study the correlation between mood descriptors and features extracted from parameters. The paper concludes with some observations derived from the analysis performed.

The second paper, by Ichimura and Mera, is on 'Emotion-oriented agent in mental state transition learning network'. The mental state transition network is a basic concept of approximating human psychological and mental responses and can represent transition from one emotional state to another. In this paper, an agent using the mental state transition network interacts with humans to realise smooth communication with two kinds of reinforcement learning methods.

The third paper, by Avradinis, Panayiotopoulos and Anastassakis, is on 'Modelling basic needs as agent motivations'. In this paper, the authors attempt to model physiological needs as the lowest and basic level of motivations, in a layered motivational architecture. Based on readings from physiology, they present the mechanisms underlying the function of four basic needs and propose a model that allows the incorporation of plausible human-like needs in an intelligent virtual agent.

Finally, the fourth paper, by Tsourtou, is titled 'Face-voice stimuli distract infants' attention from intermodal detection of numerical invariant'. In this paper, the author presents results from a study among seventy eight infants, aged 5, 7, and 9 months, and their responses to two-dimensional stimuli.

We would like to thank all the authors for their contributions, the reviewers for their time and effort in reviewing manuscripts, and the journal production team for their support and help in producing the special issue.

We hope that you will enjoy reading the special issue of the *International Journal of Computational Intelligence Studies* and find its content useful to your endeavours and research and, perhaps, be intrigued into researching the field of *affective computing* further.