Preface

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Biographical notes: Ashu Marasinghe received his PhD in Computer Science and Engineering from University of Aizu in 2004. He is currently an Associate Professor of Management and Information Systems Science at Nagaoka University of Technology and a Visiting Professor at International University of Japan. He is also an Editor of *IJBM*. His research interests are Kansei engineering, humanised informatics, and public health informatics.

Tomomasa Nagashima received his PhD in Physics from Waseda University in 1978. He is currently a Professor of Computer Science and Systems Engineering at Muroran Institute of Technology. He is currently Director of Japanese Society of *Kansei* Engineering (JSKE) and Fellow of the Institute of Electronics, Information and Communication Engineers (IEICE) in Japan. He is also an Editor of IJBM. His research interests are *Kansei* engineering and bioinformatics.

Kazuo Nakamura received his PhD in Engineering from Tokyo Institute of Technology in 1990. He is currently the Vice President of Academic Affairs and Educational Program and a Professor of Management and Information Systems Science at Nagaoka University of Technology. His research interests are measurement, analysis and modelling of human behaviour and cognitive psychological mechanism, and fuzzy theoretic approaches to systems analysis.

Koichi Yamada received his PhD in Systems Science from Tokyo Institute of Technology in 1996 He is currently a Professor of Management and Information Systems Science at Nagaoka University of Technology. His research interests are in reasoning and learning in uncertainty, decision making under uncertainty, intelligent support systems, human-computer interactions and Kansei engineering.

De Silva C. Liyanage received his PhD in Engineering from University of Tokyo in 1995. He is currently an Associate Professor in the Faculty of Science at the University of Brunei Darussalam. He is a Senior Member of IEEE. His research interests are audio and video-based human emotion recognition for human computer interaction, human tracking for surveillance, human activity detection and recognition for eldercare and automatic speech signal classification for call centre quality assurance.

This special issue on 'Kansei Engineering, Humanised Informatics, and Biometrics' is composed of seven papers reporting on the state-of-the-art in a cross-disciplinary field. Kansei engineering is an emerging new engineering whose scientific target in a narrow sense is to develop production systems or services reflecting user's Kansei. Despite of a superficial difference of the respective disciplines, however, we will take notice of a connection between Kansei engineering, Humanised Informatics, and biometrics when we consider behavioural aspects of human. While it has not become aware of such connections in the past, a fusion of them will be expected to explore a new technology for humanised systems. The issue presents seven papers reporting on a variety of unique problems related to Kansei engineering, humanised informatics, and biometrics, including acoustic analysis for cries of infants, effects of musical tempo to human psychology, recognition of speaker's emotion through techniques of natural language processing, an agent system platform for a Kansei engineering, Kansei engineering approach for just in time cost advantage, intervention of red colour for the stress, and real-time rendering of colour-shift effect of metallic materials.

The first paper 'Statistical method for classifying cry of baby based on pattern recognition of power spectrum' by X. Wang, T. Nagashima, K. Fukuta, Y. Okada, M. Sawai, H. Tanaka and T. Uozumi provides a new technique to classify cries of baby based on pattern recognition of power spectrum in respective class of cries. The proposed method introduces a statistics: F-value to extract statistically important frequency components of power spectrum for classifying cries of babies, and applied to discriminate pathological cries of patients with ADEL from normal cries of patients after surgery. The experimental evaluation by LOOCV indicates pretty good performance of the proposed method.

The second paper 'Effects of musical tempo on multiple subjective impressions' by M. Fukumoto and K. Matsuo presents their experimental results of the effect of musical tempo on subjective impressions. Above all, they reported Inverted U-shapes were observed in most of the impressions. Furthermore, significant relationship between both of 'relaxation' and 'beauty' impressions and musical tempo nearest to each subject's heart rate were observed.

The third paper 'Contextual affect analysis: a system for verification of emotion appropriateness supported with Contextual Valence Shifters' by M. Ptaszynski, P. Dybala, W. Shi, R. Rezpka and K. Araki deals with recognition problems of speaker's emotion in natural language processing framework. The authors propose a method of not only recognising emotion based on Contextual Valence Shifters (CVS), but also verifying appropriateness of recognised emotion in a particular context.

The fourth paper 'Kansei agent framework for Kansei engineering' by K. Fukuta, T. Uozumi and T. Nagashima is devoted to new development of user friendly system where human Kansei plays a key role. In this paper, following the previously proposed inference system framework using multiple Bayesian networks based on ontology and agent techniques, the authors present an agent platform and described the behaviour of major agents composing the framework.

The fifth paper 'Using Kansei Engineering with new JIT to accomplish cost advantage' by J. Rajasekara and S. Dayal explores the new opportunities for the companies to maintain a competitive edge in a market by taking into account psychological and emotional needs of the consumers who are making the purchasing decision based on their psychological and Kansei needs. The authors propose a new approach how Kansei Engineering can be used along with New JIT, which is an advanced form of Just-In-Time (JIT) manufacturing system.

The sixth paper 'An integrated psychophysiological research on the intervention of red colour for the stress-induced bodily reaction' by S. Nomura, K. Ito, F. Wang, C.M. Althaff Irfan, Y. Fukumura, N. Watahiki and K. Nakamura applies psychophysiological study for investigating the impact of 'red colour' on bodily reaction induced by stress. Authors compared with conventional physiological measures such as heart rate, blood pressure, and skin temperature. As a result of this study, some biomarkers depicted a marked difference between the red and the control conditions.

The seventh paper 'Real-time rendering of colour-shift effect of metallic materials' by R.P.C.J. Rajapakse, K. Miyata, A. Marasinghe and Y. Tokuyama introduces a visually plausible shading model to generate directional-dependent colour variations of metallic materials. Proposed shading model generates colour-shift effect of metallic materials by modifying specular component with illumination and view-dependent metallic sheen. Authors implemented proposed shading model for real-time rendering. The implemented shading model have intuitive parameters, which can generate different kinds of metallic effects for real-time rendering, including visually plausible gold, brass, silver, bronze and copper effects.

The Special Issue editors would like to extend their sincere appreciation for assistance and help during each stage of the Special Issue preparation to the Editor-in-Chief of *International Journal of Biometrics*, Professor Khalid Saeed and the Editorial Staff at Inderscience Publishers.

We hope that the collection of papers presented in this issue will be a valuable resource for all *IJBM* readers, and will promote further research in an emergent cross-disciplinary area between Kansei engineering, humanised informatics, and multimodal biometrics.