

Special Issue on Recent Advances in Multimedia and Image Processing

BY

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GUEST EDITOR

This special issue feature papers selected from presentations at the International Forum on Multimedia and Image Processing (IFMIP), which is a part of the World Automation Congress (WAC) held in Hawaii, USA, on September 28-October 2, 2008. Development in multimedia and image processing, which are more and more growing into as an essential disciplines in the field of computer science are covered. The major goals of IFMIP were to bridge the gap between theory and applications as well as to encourage interactions between basic science and practice and high quality international meetings. IFMIP was organized by Chair Yutaka Hata, and Co-Chairs: Hajime Nobuhara on area of Image Processing and Computer Vision, Naoyuki Kubota on area of Intelligent Robotics, Xu Donglai on area of Media Processing, Hiroshi Nakajima on area of Industrial Applications, Noburu Takagi on area of Data Analysis in Soft Computing, and Syoji Kobashi for special sessions.

IFMIP consisted of 64 presentations and included 6 special sessions; Intelligent Sensor by Takayuki Fujita, Data mining by Manabu Nii, Intelligent Interaction Media Processing by Hajime Nobuhara, Cognitive Agents by Naoyuki Kubota and Honghai Liu, Soft Computing and Human Computer Interface by Noburu Takagi, and Medical Signal/Image Processing by Syoji Kobashi. The presentations and special sessions covered a wide research area related to multimedia and image processing. Following the conference, special session organizers, session chairs, and organizing committee members of IFMIP, selected 14 outstanding presentations and encouraged to submit their studies to this special issue, and 6 papers were finally accepted after extensive peer-review by several anonymous international reviewers. Each of the accepted papers introduces new concept or new algorithm into real applications of multimedia and image processing. They cover various research topics: medical informatics, text mining, image processing, MEMS sensors, robot vision, and health care.

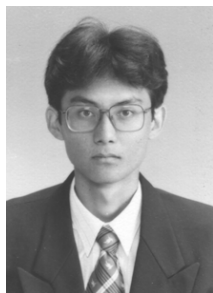
The first paper by Hatakeyama *et al.* describes an estimation algorithm of Butyrylcholinesterase for early prediction of cirrhosis. The new algorithm is based on neural network. The second paper by Takama *et al.* introduces a new text mining approach called meta keyword-based modified vector space model (M2VSM). M2VSM can cluster documents with various granularities in terms of topic. The third paper by Kurokawa *et al.* describes new image processing algorithm which focuses on defect detection of metal cylinder. This method captures

line CCD image of the metal cylinder, and extracts defects by means of support vector machines (SVM). The fourth paper by Fujita *et al.* introduces new micro-electromechanical systems (MEMS) based vibratory beam accelerometer (VBA). The new MEMS includes a digital control system, and provides low off-axis sensitivity and high shock survivability. The fifth paper by Yorital *et al.* describes new robot vision algorithm for human tracking. This method utilized fuzzy logic for human face recognition. The final paper by Marutschke *et al.* describes a procedure for acquiring 3-step causality in system modeling using human-machine collaboration. The new procedure was applied to extract causality of human's vital signals related to visceral fat area.

I believe that this Special Issue of the International Journal on Intelligent Computing in Medical Sciences and Image Processing will be an important resource for engineering and scientists interested in theoretical and methodological aspects of multimedia and image processing. I thank all authors, reviewers and recommenders for their contributions, as well as the numerous individuals who supported the establishment of this special issue. I am also grateful to Prof. Yutaka Hata, University of Hyogo, Editors-in-chief and Prof. Mo Jamshidi, University of Texas, Advisory Committee Chair for inviting me to serve as Guest editor of this journal.

Guest Editor
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ABOUT THE GUEST EDITOR



Syoji Kobashi received his B.E. in electronics (1995), M.E. (1997) and D.E. (2000) from the Himeji Institute of Technology (Hyogo, Japan). He is currently an associate professor at the Graduate School of Engineering at the University of Hyogo, Hyogo, Japan, and a Guest Associate Professor at WPI Immunology Frontier Research Center, Osaka University. Dr. Kobashi was also a 2000 Postdoctoral Research Fellow with the Yanagida Project Communication Research Laboratory (CRL). His research interests include soft computing aided medical signal/image processing. He received the Joseph F. Engelberger Best Paper Award at the 2nd World Automation Congress in 2000, the Highlighted Technical Paper Award at the Australian and New Zealand Intelligent Information Systems in 2003, the IEEE EMBS Japan Young Investigators Competition from IEEE EMBS Japan Chapter in 2003, and the Franklin V. Taylor Memorial Award at 2009 IEEE International Conference on Systems, Man, and Cybernetics in 2009. Dr. Kobashi is an associate editor of International Journal on Intelligent Computing in Medical Sciences and Image Processing, as well as serving as a member of the Japan Society for Medical and Biological Engineering, the Biomedical Fuzzy Systems Association, the Japan Society for Fuzzy Theory and Systems, the Organization of Human Brain Mapping, the Japan Society of Medical Imaging Technology, and the IEEE.