
Editorial

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Biographical notes: Toyohide Watanabe received the BS, ME and PhD Degrees from Kyoto University in 1972, 1974 and 1983, respectively. In 1987, he was an Associate Professor in Department of Information Engineering, Nagoya University and then was a Professor in 1994. After then, he moved as a Professor to Department of Systems and Social Informatics, Graduate School of Information Science, Nagoya University, in 2003. His research interests include knowledge management of personal intelligent activity, computer supported collaborative learning, social environment simulation, spatio-temporal model and geographic information systems and so on. He is a member of the ACM, AAAI, AACE, KES International and the IEEE-CS.

Intelligent techniques are increasingly used in virtually every field right from health sciences, business to the engineering systems. This volume includes nine research papers on the state of art in the theory and applications of intelligent techniques.

The first paper by Nakamura et al. is on a model for navigating discussions among system design novices. The authors have proposed a novel discussion model designed for novices that enables smooth navigation during discussion. The proposed model is based on state transition using discussion states and discussion comment categories. The research presents the analysis and design of the model. Preliminary evaluation results are presented.

The second paper by Takashita et al. is on extracting user preference from Web browsing behaviour for spam filtering. The main focus is user behaviour that most e-mail users browse the Web. The authors present a method which exploits user preference extracted from Web browsing behaviour using a spam filter. The method reduces the maintenance of the filter by tracking user preferences in background. The system learns ham words through Web browsing behaviour of each user. Ham words are used to determine whether a received e-mail is a ham or not. Their system can detect some spams with short text which is hard to classify correctly by the Bayesian filter.

The third paper by Feng et al. is on improved partition method for tracking moving objects in road networks. The authors propose a novel partition method using cross region-tree to group the moving objects inside road networks. It is shown that the proposed method is accurate and less expensive.

The fourth paper by Ushiyama and Watanabe reports a framework for personal content search and recommendation based on personal experience. The number of personal

content objects which a person wants to manage increases rapidly. However, the most of conventional techniques can only support a few types of content objects and cannot manage various types of content objects in a unified manner. Moreover, users cannot manage content objects effectively with only objective metadata, because context information about generating and utilising personal content objects is necessary to manage them efficiently. The authors propose the X-Web (Experience-Web), which is a data model for managing various types of personal content objects in a unified manner based on their contexts. The X-Web consists of three kinds of modelling units: content, experience, and person.

The fifth paper by Kunimune et al. is on the development and evaluation of a Web-based asynchronous discussion system on e-learning material. The system enables learners to write annotation system on Web-based learning material. The system is evaluated in the real world situation.

The sixth paper by Fan et al. proposes a framework which supports flexible clustering over different portions of continuous data streams at all possible time points in order to observe the changes of group behaviour. The online summarisation provides an approximation method for online summary statistics collection and compact multi-resolution hierarchies for statistics maintenance of data streams. While, the offline clustering abstracts statistics for approximating the user desired subsequence as precisely as possible from the summary statistics hierarchies and outputs the results of clustering over these statistics.

The seventh paper by Seta et al. addresses critical thinking processes to clarify the evidence of one's own decision-making explicitly and then validate it. The authors first analyse the characteristics of critical thinking to design the learning environment and specify the design principle. Then, they propose a learning system which facilitates valid decision-making processes by providing guidance information.

The eighth paper by Soga et al. reported the planetary simulator which can make astronomical phenomena in the solar system clear, and also can simulate planets' revolutions around the sun fixing viewpoint on another planet. The planetary simulator supports viewpoint guiding function for self-learning, and shows a small dynamic guide map with current learner's viewpoint, target and scope.

The final paper by Tamura et al. proposes an automatic analysis and manipulation of CSCL utterance logs. The authors specify a data scheme to represent CSCL utterance with structure and meanings, and point out an automatic analysis method to resolve elliptical phenomena in CSCL discussions with use of case analysis for spoken words. By means of the proposed functions, a learner group is able to acquire basic information, related references and various standpoints for the given topic during the discussion or in advance.

I was honoured to receive the invitation from Professor Lakhmi Jain to edit this volume. It is pleasing to note that all papers are visionary and deserve appreciation by the scientific community. I wish to thank reviewers for their constructive feedback. Thanks are also due to Jyothi, E-Edit Solutions for her assistance.