International Journal of Innovative
Computing, Information and Control
Volume **4**, Number **6**, June **2008**

 ISSN 1349-4198
pp. 1489–1498

A MULTIMEDIA CONVERSATION SYSTEM WITH APPLICATION IN SUPERVISED LEARNING METHODS AND RANKING FUNCTION

Zhi Teng[1], Ye Liu[1] and Fuji Ren[1,2]

[1]Faculty of Engineering
The University of Tokushima
2-1 Minamijosanjima, Tokushima 770-8506, Japan
{ teng, liu, ren }@is.tokushima-u.ac.jp

[2]School of Information Engineering
Beijing University of Posts and Telecommunications
Beijing 100876, P. R. China

Received May 2007; revised September 2007

Abstract. *Conversation systems are moving out of the research labs and out into the real world. The persistent belief that conversation would be the most natural and powerful user interface to computers. This change is important for the performance of the systems. In this paper we present an experiment named a multimedia conversation system with application in supervised learning method and ranking function. This paper firstly discusses how to use multimedia information build knowledge database. Then it introduces applying the supervised learning method and ranking function to Natural Language Understanding (NLU) and Natural Language Generation (NLG). Finally, it gives experiment approach and results. The experiment showed that this method could achieve better results in practice.*
Keywords: Multimedia conversation systems, Really simple syndication, Okapi BM25, Support vector machines

1. **Introduction.** The belief that humans will be able to interact with computers in conversation has long been a favorite subject in science fiction. With recent improvements in computer technology and in language processing, such systems are starting to appear feasible. There are significant technical problems that still need to be solved before it becomes truly conversational [1].

A conversation is a conversational interaction involving two participants, each of whom contributes by listening to the other and responding appropriately. As humans we can study and memorize knowledge everyday and then we can use this knowledge to converse with someone. We hope the conversation system has this function too. But most of the knowledge databases for Conversation system are lacking, limited and lag in evidence. Conversation systems will converse with various users and talk about various contents, so we must prepare large numbers of information for knowledge databases. It is so difficult for us. Now, the wealth of information on the web makes it an attractive and simple resource for seeking quick information. Recently the Really Simple Syndication (RSS) has been successfully applied to the internet for it is an easy way to distribute news. Our system automatically downloads and processes the information from the internet through the RSS parser and then makes the information into the knowledge everyday.

Mostly natural language understanding and natural language generation use similarity computing. We can find out the most similarity conversation from knowledge through similarity computation. For similarity computing there are some methods being used. First the conventional method of similarity computing by Key Words, and then many new