
Simply typed term rewriting proposed by Yamada (2001) is a framework of higher-order term rewriting which dispenses with bound variables. This paper proposes an extention of the dependency pair method of first-order term rewriting introduced by Arts and Giesl (2000), which enables automated termination proof of simply typed term rewriting systems.


Featuring vowels by five layers sandglass type neural network [in Japanese], Tadaaki SHIMIZU*,
We showed a new scheme to characterize speech from LSP parameters by 5 layers sandglass type nonlinear neural network (SNN(NL5)). In order to synthesize speech, we take advantage of useful abilities of SNN(NL5) for compressing and restoring the information. We performed learning experiments on LSP parameters of 5 vowels to investigate the ability of SNN. The followings were verified, 1) the distribution of LSP parameters compressed by SNN(NL5) are similar to the distribution of F1-F2 formants plane. 2) Nonlinear output function of neural elements in second and fourth layers of SNN(NL5) work effectively from view point of separating the distribution of vowels. 3) In order to prevent SNN(NL5) from over learning, there exists the optimum numbers of neural elements in second and fourth layers. For 14 orders of LSP parameters, this number was determined to be 20. 4) There is a preferable property on the plane to separate the vowels distinctively when the restoring error of LSP parameters becomes less. 5) SNN(NL5) can restore the LSP parameters with accuracy enough to synthesize speech from the compressed parameters.

In this paper we describe the Question Answering Challenge (QAC), a question answering task, and its first evaluation (QAC1). The project was carried out as a task of the NTCIR Workshop 3 in October 2002. One objective of the QAC was to develop practical QA systems in a general domain by focusing on research relating to user interaction and information extraction. Our second objective was to develop an evaluation method for the question answering system and information resources for evaluation. We defined three kinds of tasks in the QAC: Task 1, where questions required five possible answers; Task 2, where questions had a single answer; and Task 3, where there was one answer to a question related to a question in Task 2. We prepared 200 questions for Task 1 and Task 2 and 40 questions for Task 3 at the Formal Run and about 900 questions for the additional run. We conducted a Dry Run and a Formal Run evaluation. There were 16 participants (two of them from among the task organizers) at the QAC1.

It has been recognized that existing methods for rating English texts by reading level are mostly aimed at native speakers of English and therefore are not completely appropriate for Japanese learners of the language. Here we propose a method for rating English texts by reading level specifically targeted at Japanese learners of the language. To rate the reading level of a text for a Japanese learner of English, our method takes two types information regarding a given text into account, namely, vocabulary and grammatical structure. Specifically, we rate the reading level of a text by using a vocabulary list and parser to extract particularly difficult vocabulary items or grammatical structures as features. To rate a text's reading level, two types of model are used:
multiple regression and neural networks. Our experiments show that the proposed methods rate the reading level of a text with the following levels of accuracy: an average of 75% accuracy for multiple regression and 81% when using neural networks.


The sensation of rotation derived from the semicircular canal system during a Coriolis stimulus, or cross-coupled rotation, was estimated by an approach from mechanics with giving some hypotheses and simplifications on the semicircular canal system. By solving an equation of motion of the endolymph during a Coriolis stimulus with a moderate time course, rotating angle of the endolymph was obtained, and the sensation of rotation derived from each semicircular canal was estimated. Then the sensation was integrated in the whole semicircular canal system which was considered to be composed of three orthogonal semicircular canals. The sensation of rotation derived from the semicircular canal system comes into conflict with those from the otolithic system and the somatosensory system. The conflict causes an illusion such that the head rotates vertically with keeping inclination at a constant tilt angle. The nauseogenic severity of motion sickness caused by a Coriolis stimulus is enhanced in accordance with the integrated angle of rotation perceived by the illusion.


In this paper, the authors propose a method to recognize article errors often seen in English text written by Japanese learners of English. In this method, article errors are recognized based on the statistic extracted from an electronic corpus such as English-language newspapers. The authors’ method is different from earlier methods in that there is no need to create a dictionary or rules for article error recognition. The results of experiments confirm that the performance of the authors’ method is equivalent or superior to earlier methods.


Handling Information Access Dialogue through QA Technologies ∙ A novel challenge for open-domain question answering, Tsuneaki KATO*, Jun'ichi FUKUMOTO*, Fumito MASUI and Noriko KANDO*:


Accuracy Improvement of Automatic Text Classification Based on Feature Transformation and Multi-classifier Combination, Xuexian Han, Guowei Zu, Wataru Ohyama, Tetsushi Wakabayashi and Fumitaka Kimura: Proc. of AWCC2004, ZhenJiang, China, pp.463-468, Nov. 2004