Title	
Author(s)	,
Citation	
Issue Date	2013-03
Type	Thesis or Dissertation
Text version	author
URL	http://hdl.handle.net/10119/12276
Rights	
Description	Supervisor: , ,

英文要旨

"Human voice" is very useful way to input information intuitively. Voice-to-MIDI is the typical application of "Human voice" processing; the Voice-to-MIDI systems can translate singing melodies into MIDI sequence data. But, existing Voice-to-MIDI systems are hard to distinguish which notes are important for users and which notes are not important for users, because those systems extract notes from singings automatically without users' intentions. To solve this problem, I proposed a novel Voice-to-MIDI method that uses concurrently input rhythm tapping while singing. That has two features; one is human and computer co-operation mechanism, and another is the capacity of note selection by users own. As the basic experiment of Voice-to-MIDI system, I confirmed that the prototype system achieved much more accurate translation results than that of the existing system.

Next, I applied this Voice-to-MIDI method to two experiments using by the feature of note selection. There are two different types of input sources of Voice-to-MIDI, One type is environmental sound, and another is non-singing voice someone freely articulated. As the example of environmental sound, I propose a novel musical instrument, which allows people to enjoy co-composition with the environment just like a jam session. If the user was inspired by the environment surrounding him/her, he/she can reweave its soundscape with his/her inner musical inspiration by tapping the rhythm along with the environment and the inspiration. I illustrate some pilot studies and examples. As the example of human non-singing voice, I propose a support system of the patients of dementia and their care workers. The system provides melodies or any kind of sounds based on the notes extracted from the voices of the patients. These provided sounds have the functions, like snuggle for mental conditions of patients and leading the mental conditions of patients. One case study was held with this system.

With the results of these researches, I describe the availability of the proposed method and the contribution to expand the application of Voice-to-MIDI. Eventually, I discussed them from the perspective of human and computer co-operation, and knowledge science.