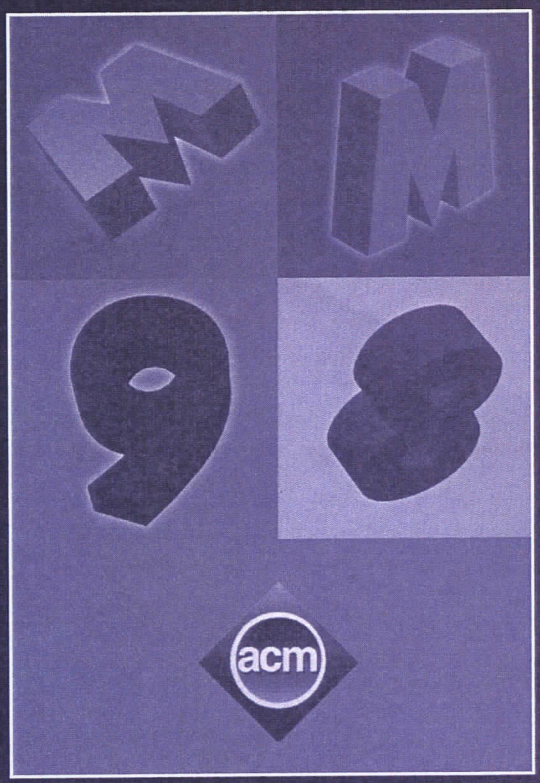
MULTIMEDIA 98

THE 6TH ACM INTERNATIONAL MULTIMEDIA CONFERENCE



-ART DEMOS-
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Interactive Poem

Naoko Tosa
ATR Media Integration & Communications Research Laboratories
Seika-cho Soraku-gun Kyoto,Japan
Tel:+81 774 95 1427
tosa@mic.atr.co.jp

Ryohei Nakatsu
ATR Media Integration & Communications Research Laboratories
Seika-cho Soraku-gun Kyoto,Japan
Tel:+81 774 95 1400
nakatsu@mic.atr.co.jp

1. ABSTRACT

We propose a new type of speech-based interaction system called "Interactive Poem. " "Interactive poem" is a new type of poem where a participant and a computer generated poet MUSE create a poem by exchanging short poetic phrases. The basic idea of interactive poem comes from "Renga," an old Japanese poem form. "Renga" is generated by multiple people as a combination of short Japanese poems such as "Waka" or "Haiku" which were created in ancient era and have been used as medium to express Japanese spiritual emotions.

1.1 Keywords

Interactive Art,Emotion Recognition,Art & Technology research,New type Mulitimedia contents,poetic interface

2. INTRODUCTION

The face of the music goddess "MUSE" in Greek mythology appears on a large screen. MUSE creates short poetic words and speaks them with emotions to a participant. By hearing these words, the participant is able to enter the world of that poem, and at the same time, he or she is also able to speak to MUSE with poetic words. Through this process of exchanging poetic words, the interactive poem allows the user and computer to work together to build the world of an improvised poem filled with inspiration, feeling, and emotion.

3. SYSTEM

3.1 Voice Recognition

To recognize the meanings of phrases uttered by a user, the system adopts speaker-independent speech recognition technologies based on Hidden Markov Model algorithm.

3.2 Emotional Voice Recognition

In addition, to recognize the emotions information of the user, the system performs emotions recognition. As the basic architecture for the emotions recognition, the system uses a technology called Neural Network.

3.3 Generation of MUSE's reaction

The reaction of computer character MUSE to the phrases uttered by the user is expressed through voice and images. For each phrase to be uttered by MUSE, multiple utterances with different emotional expressions are stored in the system. By combining the speech recognition result and the emotion recognition result, an utterance with specific meaning and emotional expression is selected and is spoken by MUSE. In the same way, various kinds of facial images of MUSE are stored and based on the recognition results an appropriate image is selected and displayed. To create natural transition from one expression of MUSE to another, 3-D morphing animation technique is used. In addition, to express the atmosphere of the world of a poem, the system contains a number of background scenes and displays them depending on the process of dialogue between the participant and MUSE.