Music Information Acquisition, Preservation, and Retrieval

(MUMT-611)

Project Proposal

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Description

Current music browsing systems are mainly text-based and assume the user understands the given genre classification a priori. Thus, they are really only efficient if the user knows where and what to look for. But sometimes (often?) the user simply wants to find a new song previously heard on radio without knowing the title and the artist. In this case, a text-based browser for music is not as efficient anymore since the user knowledge is limited to audio content. A tool allowing the user to navigate through a sea of audio content might then improve its browsing experience. Guided by his/her ears, the user might be able to find what he/she is searching faster through selective hearing.

The goal of this project is to study the use of the cocktail party effect as a mean for more efficient music browsing. By exploiting the ability of human brain to analyze several sound sources simultaneously and focus its attention on a single source, it may be possible to create an enhanced music browsing experience that is designed specifically for human hearing.

Keywords

Cocktail party effect, sound perception, auditory interfaces, music browsing.

Strategy

Phase 1: Preliminary Tests
Max/MSP will be use to perform a preliminary series of listening tests on the 8-channel system of the CAML.

Phase 2: Prototype
The second phase of the project consists of designing and implementing a simple prototype of a music browsing/selection system based on the observations/readings done previously. The exact system type and structure still has to be decided.

Phase 3: Prototype Evaluation
The third phase roughly determines whether the project is successful or not. It may be appropriate to ask a certain number of subjects to try the prototype and comment on it.

Phase 4: Results
Formalize the results and (hopefully) submit a paper to ISMIR 2006.

Tentative Schedule

DATE	DESCRIPTION
February 16th	**Project Proposal**
February 17th to March 1st (**Phase 1**)	• Readings! • Simple project website • Max/MSP patch (with 8-channel system) • Observations, tests, issues identification • Preliminary Bibliography
March 9th	**1st Meeting with Ichiro**
March 10th – March 22nd (**Phase 2**)	• Additional readings • Prototype Design • Implementation
March 23rd	**Progress Report**
March 24th – March 29th (**Phase 2-3**)	• Implementation • Prototype Tests and tweaking • Final Bibliography • Presentation Preparation
March 30th	**2nd Meeting with Ichiro** **Final Bibliography Due** **Final Project Presentation**
March 31st – April 8th	• More tests and more tweaking • Writing!
April 9th	**3rd Meeting with Ichiro** **1st Draft**
April 10th – April 16th **(Phase 4)**	• Writing! • Writing!
April 17th	**ISMIR 2006 Submission**
April 18th – April 24th	• Code cleanup, media content preparation, etc… • Website Update
April 25th	**Final Project Due** **Denis' Birthday! ☺**

Some Bibliography

Arons, B. 1992. A review of the cocktail party effect. *Journal of the American Voice I/O Society*, 12(July). 35-50.

Aoki, P., M. Romaine, M. Szymanski, J. Thornton, D. Wilson, and A. Woodruff. 2003. The Mad Hatter's cocktail party: A social mobile audio space supporting multiple simultaneous conversations. *Proceedings of the Conference on Human factors in computing systems*. 425-32.

Stifelman, L. 1994. The cocktail party effect in auditory interfaces: A study of simultaneous presentation. *MIT Media Lab Technical Report*.