Movie Scene/Event Extraction and Content Summarization

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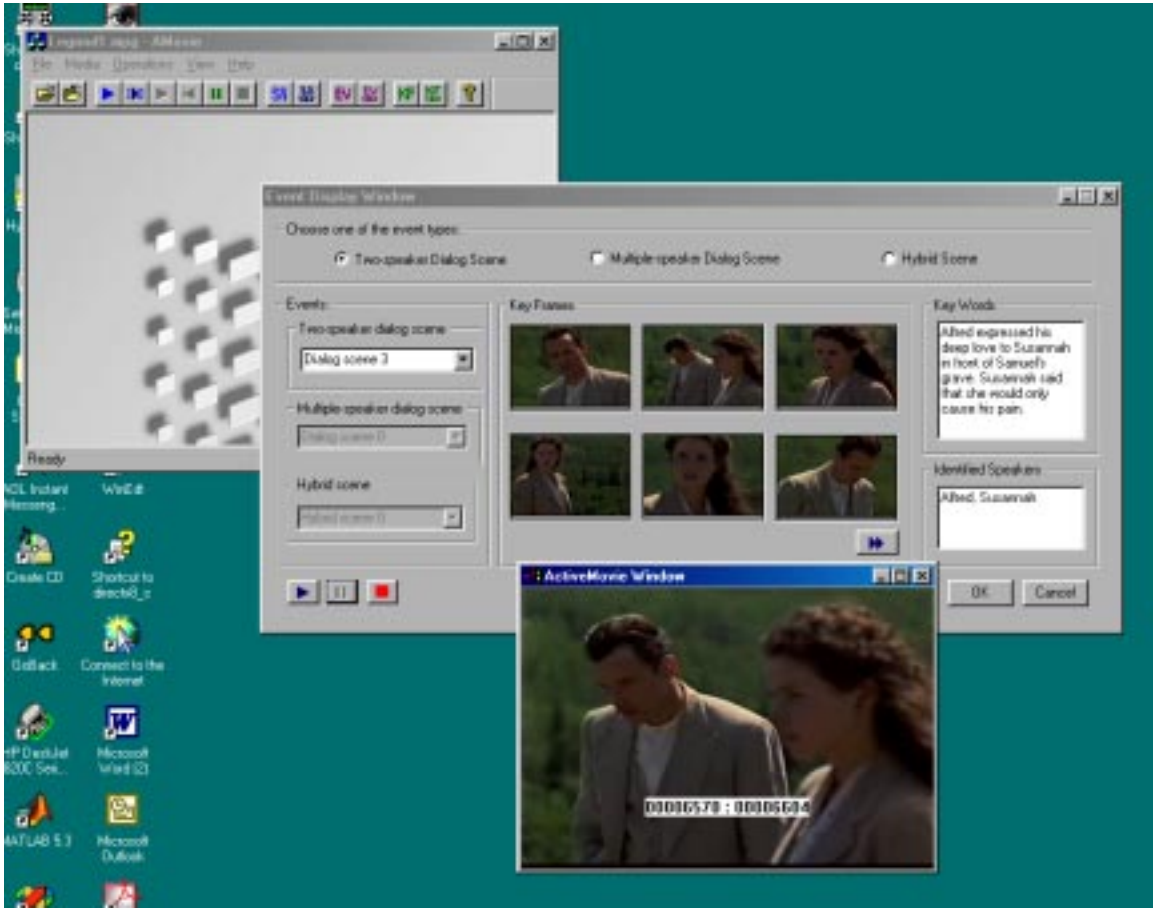

A screenshot of the event extraction system, which shows a list of detected video events, the corresponding keyframes, the identified speakers, and the extracted text keywords. An active movie player is also developed to help users freely watch the video content

USC STUDENTS, DEGREES

Ying Li (Ph. D)

BRIEF DESCRIPTION OF DEMONSTRATION

A movie scene / event detection scheme will be presented. The extracted scene and event information, as well as the speaker identity information extracted from each 2-speaker dialog scene, can be used to build the video's Table of Content as well as the index table. Moreover, the keyframes extracted from each underlying scene or event can further help users quickly browse the underlying video content as well as locating the desired video segments.

UNIQUE OR DISTINGUISHING CHARACTERISTICS RELATIVE TO STATE-OF-THE-ART

- This work develops a system to extract the semantic video units, i.e. the scene and event, from the underlying movie sequence. Multiple media cues have been employed including audio and visual information. Moreover, we have also applied the speaker identification technology to recognize the speakers present in movie dialogs.

APPLICATIONS

- Video indexing, browsing and retrieval
- Video summarization

RECENT HIGHLIGHTS, LEVEL OF DEVELOPMENT, UPCOMING MILESTONES

- Multiple media modals, including audio and visual cues have been successfully integrated to achieve more meaningful scene/event detection results
- Speaker identification technique has been integrated to generate another piece of important indexing information
- In the future, we plan to develop a video skimming system which generates a dynamic video summary in the form of a moving sequence

UNDERLYING TECHNOLOGIES

- Video scene detection
- Video event detection
- Speaker identification
- Video content analysis

LIST OF PUBLICATIONS, REFERENCES, URLs

1. Ying Li, W. Ming and C.-C. Jay Kuo, "**Semantic video content abstraction based on multiple cues**", *ICME2001*, Japan, August 2001.
2. Ying Li, S. Narayanan, W. Ming and C.-C. Jay Kuo, "**Automatic movie index generation based on multimodal information**", *SPIE Proc. on Internet Multimedia Management Systems*, Vol. 4519, Denver, August 2001.
3. Ying Li and C.-C. Jay Kuo, "**Movie event detection by using audiovisual information**", *PCM2001*, Beijing, October 2001
4. Ying Li and C.-C. Jay Kuo, "**Extracting movie scenes based on multimodal information**", to be appeared in EI2002, Jan. 2002.

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