Welcome

The dissemination and assimilation of visual information has played a most important role in the evolution of civilization. In prehistoric times, humans used hieroglyphics, stone engravings, sometimes simply patterned rock placements, to declare their territorial claims, make proclamations, and convey messages to the heavens. During early recorded history, the sophistication of a society was measured by the complexity and beauty of the visual patterns created by its master craftsman on its pottery and jewelry. As civilizations advanced, and with the discovery of the print medium, the recording, archiving, and retrieving of visual information acquired additional roles — in planning, building, and communication of visual events. And now here we are, in an age in which visual information has become central to practically every aspect of human existence — entertainment, practice of medicine, broadcast of mundane and cataclysmic events. We have seemingly reached a stage in the evolution of our technological sophistication in which textual information alone is insufficient for us to fully appreciate the importance of an event — we must also be able to see the associated images and video.

It is in this context that we wish to welcome you to the 2000 IEEE Workshop on Content-Based Access of Image and Video Libraries. Research interest in this area has skyrocketed during the last decade, fueled on one hand by ever-increasing power of affordable computing, and, on the other, by the plummeting cost of mass storage. Also feeding into this exploding interest is the realization that content-based retrieval of image and video databases is now a necessity in many domains. For example, it's now widely believed that the practice of diagnostic medicine would be much improved if upon seeing a suspicious-looking region in an image a physician could recall previously collected images with similar looking pathology bearing regions. Gas and oil exploration would be expedited if the seismic and other sensory data could be searched and retrieved on the basis of visual similarities. Site specific crop management and yield prediction in precision agriculture would become more feasible with the help of content-based search and retrieval of remotely sensed images. Environmental and public health risks due to global climate change could be more readily assessed by using content-based access of satellite image archives. Video libraries would be put to better use if we could successfully extract segments containing items of interest. In light of this interest in diverse domains, both industrial and academic communities have already begun to focus their attention on the interoperability issues among potentially heterogeneous multimedia repositories.

The emerging MPEG-7 standard for multimedia content description is a good indication of this trend. MPEG-7 is defining specific description schemes and descriptors that can be used to describe and annotate audio-visual content at a number of levels including features, structure, semantics and related meta-data. By standardizing only the description structures themselves, MPEG-7 will allow for future innovation and competition on the development of feature extraction and description generation methods, as well as on the searching, filtering, indexing and use of the MPEG-7 descriptions.

This workshop reports on the recent progress in technologies and applications for Content-based Access of Image and Video Libraries. Overall, the twenty papers that best reflect important trends and advances in the state-of-the-art in content-based access were selected from 46 submitted manuscripts. The technical program is organized around four major themes: image retrieval, video retrieval, relevance feedback and indexing, and modeling for image and video libraries. Five papers present new methods for image retrieval that use low-level feature information such as color, shape, and regions. Five papers present new methods for video retrieval that focus on deriving higher-level semantic information. Five papers present new techniques for improving retrieval effectiveness and query response time by using relevance feedback and advanced indexing techniques, respectively. Finally, five papers address issues related to improving content-based access systems by focusing on the modeling of the libraries or better modeling of human perception.

In closing, we would like to express our deep appreciation to the CBAIVL-2000 Technical Program Committee and the Technical Program Chair Dr. John R. Smith for organizing an outstanding and exciting technical program.

Conference Co-Chairs
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