Editorial
Recent Advances in image and video retrieval

Content-based information retrieval (CBIR), and image and video retrieval in particular, continues to be an extremely active research topic around the world. Interest in this topic is motivated by the very real requirement for efficient techniques for indexing large archives of visual content in ways that facilitate subsequent user-centric browsing, searching and retrieval.

The content to be indexed can exist in the professional/commercial domain, e.g. National broadcaster archives or content providers' repositories, or in the personal archives that many of us now maintain as a result of the decreasing cost of storage and the ubiquitous nature of cheap capture devices. In either case, providing truly efficient access to large content archives requires key advances in many complementary research areas, including database technology, user interface design, user context modeling, knowledge representation and modeling, automatic and semi-automatic annotation tools, and indexing and retrieval algorithms.

This special issue contains a selection of papers that present recent advances in a number of areas relating to indexing and retrieval. The issue attempts to present a representative sample of ongoing research focusing mainly on feature extraction, similarity measures, content structuring and the incorporation of user interaction in the retrieval process. All of these can be considered as component technologies that are required for addressing the broader issue of the so-called "Semantic Gap" currently facing the CBIR research community. These papers were presented in brief form at the 3rd International Conference on Image and Video Retrieval (CIVR 2004) in Dublin, Ireland.

The paper by Westerveld and de Vries presents a probabilistic framework for multimedia retrieval and demonstrates its promising performance on a large test corpus. Object-based retrieval and the combination of visual and structural features is addressed by Souvannavong *et al* in their paper. The paper by Howarth and Rüger, focuses on feature extraction, specifically texture features, whereby the performance of different features in a retrieval context is evaluated. Missaoui *et al* discuss similarity measures for retrieval and propose a new measure that addresses the limitations of existing measures. Yan and Hauptmann present an approach to combining features from multiple modalities, including text. Content structuring for retrieval (and other applications) is addressed by Zhai *et al* who propose an approach to scene detection and classification in movies. An example of mid-level analysis is presented by Everingham and Zisserman who describe an approach to detecting and recognizing faces in video.

The role and the impact of the user in the retrieval process is addressed by three papers. Hollink *et al* present the results of a study, which included 242 search sessions by 39 participants on 24 topics where they assess search behaviour of people querying a news archive using an interactive video retrieval system. Boldareva and Hiemstra involve the user in the process by basing the indexing of video fragments on the probability of the user's positive judgement of key-frames of video shots given the fact that some other shot is the user's target. Finally, Zhou

et al present an interactive image retrieval process with relevance feedback based on nonlinear extensions for biased discriminants, or BiasMap.

In conclusion, we hope that the reader will enjoy this special issue and the range of topics covered. We are grateful to all reviewers who assisted us in putting together this Special Issue. We are also extremely grateful to the IEE for their excellent cooperation.

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