

EINLADUNG

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Titel: Efficient Adaptive Retrieval and Mining in Large
Multimedia Databases

Abstract:

Multimedia data ranging from images to videos and time series is created in numerous scientific, commercial and end use applications. Access to increasingly large multimedia data volumes comprises retrieving similar objects or generating an overview of the entire content. Examples include similarity search of magnetic resonance images for diagnostic purposes, or customer segmentation for sales promotion.

As opposed to manual keyword annotation techniques that are typically infeasible for large data volumes, content-based approaches automatically extract features to describe multimedia data. Similarity models specify appropriate features and measures of their (dis-)similarity for effective content based access. High dimensionality of multimedia features and huge database sizes are major challenges for efficient and effective retrieval and mining.

In this work, very common feature types for multimedia data are studied: histogram and time series data. Histograms are used for a variety of features such as color, shape or texture. Time series data is prevalent for sensor measurements, stock data, and may even be applied to shapes and other features as well. For these data types, effective adaptable similarity models are usually computationally far too complex for usage in large high dimensional multimedia databases.

Therefore efficient algorithms for these effective models are proposed. Indexing techniques allow for efficient query processing and mining by restricting the search space to task relevant data. Multistep filter-and-refine architectures using novel filter functions with quality guarantees ensure that fast response times are achieved without any loss of result accuracy. This allows quick access to multimedia databases for similarity search as well as for mining.

Es laden ein: Die Dozenten der Informatik