

Issues in Multimedia Databases

Panel Moderator

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Panelists

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Multimedia is a popular term these days, and the database community, naturally, is talking about multimedia databases. The reason multimedia is getting so much attention is clear: technology trends are now beginning to make it possible to store and display, at a reasonable price, audio and still images through a computer. It is expected that video storage will also be affordable in the near future. The purpose of this panel is to explore what new challenges this multimedia explosion brings to the database community.

The sorts of questions we expect to address are:

- What are the research issues, if any, that are characteristic of multi-media databases as opposed to single-medium non-traditional databases, such as geographical info. systems, document databases, or video databases.
- Is there hope for a common set of primitive operations for some classes of multi-media applications?
- Will there ever be a winner in the war of multiple index structures? If so, will the choice be technical or market-driven?
- What are the issues in building an extensible query optimizer? How much performance tuning is required of the parameters "declared" by the definer of some new access method.
- How important is efficient management of "large objects"? Is access to a portion of a large object ever required?

- What loss of functionality occurs if multi-media data is stored in a database that is not object-oriented. How about SQL extensions to allow access to portions of an attribute value?
- Does the potential large size of multi-media information push us into humongous databases that require tertiary memory? If so, what new issues arise? For instance, how difficult is it to do a good job of multi-level caching?
- Can issues of network and I/O system latency be factored in some clean way? Does the software have to be customized for each platform to do the correct thing in real-time? What is the thinnest layer of "service" that can be provided in a platform specific fashion that frees the DBMS of such a concern.

The panel to address these questions comprises two multimedia database providers, one relational and one object-oriented, in Stonebraker and Gehani respectively; and four application experts, each of whom has worked extensively with a different aspect of multimedia data management: Fox has been working on multimedia document, document image, and networked information retrieval problems; Jain has studied computer vision problems and is interested in the management of still photograph and video information; Samet has experience in spatial data management for applications such as geographical information systems and is the author of a pair of books on the subject; Thompson teaches interactive video authoring and is the chief architect of Macromedia Director, a multimedia authoring system for the Macintosh.

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