

Introduction to the minitrack on

## **Multimedia Information Systems**

Hong-Mei Chen , University of Hawaii

This is the fifth year for the minitrack on Multimedia Information Systems at the Annual Hawaii International Conference on System Sciences. The presence of this minitrack reflects the importance and recent proliferation of multimedia applications. This proliferation has been driven by technological advances resulting in dramatic decreases in price/performance ratios in processing and storage technologies, video and audio input/output devices, imaging systems, and telecommunications. As it is not disputed that multimedia technology will be an indispensable aspect of computer/human interaction in the next-generation computing environment, approaches for applying multi-media technology and mechanisms for managing multimedia information in organizations are in demand.

This minitrack serves as a unique forum for reports on various multimedia information systems that support organizational processes and activities and theoretical or practical investigations addressing the design and implementation issues of multimedia information systems. We try to avoid overlap with existing, established research field such as CSCW. Hypermedia applications (e.g., intersection of hypertext and multimedia applications) are included in this minitrack. Our goal is to form a forum for exchanging ideas on multimedia information management and application development from the "management" or "information systems" perspectives in an organizational context. As a result, we are not interested in reporting such topics as the design of multimedia input/output devices, operating system architecture, digitization techniques or compression algorithms. We are most interested in such topics as multi-media information storage and access/retrieval, integration of multimedia technology with the existing information systems, modeling and design of multimedia information systems, implementation issues (i.e., standards issues, cost/benefit analysis, measuring effectiveness of multimedia information systems) and tools for supporting multimedia information system development.

In the past, we succeeded in reporting research in retrieval mechanisms of (distributed) multimedia information systems, authoring of multimedia data and

the requirement definition/ performance evaluations of multimedia communication systems, including video on demand (VOD) systems. We have reported the design and implementation of a few medical multimedia information systems in different parts of the world, providing insight into multimedia user interface design, incorporating multimedia data in a real-world clinical environment, performance/cost analysis and standard-based tool development for global communication. The effects of the use of animation in conceptual models of computer systems for training novice users that use them were also reported. In addition, we have reported several tools for managing (e.g., encoding, modeling and retrieving) multimedia data, focusing on video and audio data.

This year, we continue to report tools development and design methodologies for multimedia applications. The first paper by *Timothy K. Shih, Ying-Hong Wang and Chin-Hwa Kuo* presents a spatial/temporal relation computing technology for multimedia presentation designs. It provides a rather complete analysis of interval relation composition and application of computing of relations between temporal intervals to multimedia presentation designs, include 2D and 3D presentations. The second paper by *Timothy K. Shih, Chin-Hwa Kuo and Ying-Hong Wang* describes a tool that allows for stepwise refinement of multimedia presentations. The tool helps generating dynamic multimedia presentation in that a presentation can take user interactions and mutate itself. The third paper by *HeeSeok Lee, Choongseok Lee and Cheonsoo Yoo* presents a structured methodology (SOHDM) for designing hypermedia information systems. Unlike other methodologies, the methodology aims at integration of hypermedia with enterprise database for Internet and Intranet applications. The final presentation will be made by *Yun Du* on the issues of multimedia databases and virtual university.