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HYDRA - High Performance Data Recording Architecture for Streaming Media

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SPEAKER

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HYDRA - High Performance Data Recording Architecture for Streaming Media

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In recent years, a considerable amount of research has focused on the efficient retrieval of streaming media. Scant attention has been paid to servers that can record and synchronously manipulate such streams in real-time. This talk presents our framework to enable large-scale, multi-modal, real-time media recording support in a broad class of applications. We introduce the High-performance Data Recording Architecture (HYDRA) which aims to provide a unified paradigm that integrates multi-channel media streaming, recording, retrieval and control in a coherent manner. We elaborate on the technology we have developed for live streaming and our experimental experiences. Some of the properties that make the manipulation of continuous media challenging and different from traditional alphanumeric, text, image, and alphanumeric streaming data, are the combination of real-time storage and retrieval, high bandwidth and large size, and inter-stream synchronization requirements. This talk presents some of the technologies that we have developed for HYDRA and our experimental experiences with several applications. For example, our distributed immersive performance (DIP) project explores one of the most challenging goals of networked media technology: creating a seamless environment for remote and synchronous musical collaboration. In another project we are creating and studying a collaborative environment for aircraft maintenance and training.

Biography:

Roger Zimmermann is currently a Research Assistant Professor with the Computer Science Department and a Research Area Director with the Integrated Media Systems Center (IMSC) at the University of Southern California. His research activities focus on streaming media architectures, peer-to-peer systems, immersive environments, collaborative large-scale group communications, and mobile location-based services. Dr. Zimmermann has co-authored a book, a patent and more than eighty conference publications, journal articles and book chapters in the areas of multimedia and databases. He was the co-chair of the ACM Next-generation Residential Broadband Challenges 2004 workshop, the Open Source Software Competition of the ACM Multimedia 2004 conference, and the short paper program systems track of ACM Multimedia 2005. He is co-chairing the Multimedia Computing and Networking conference 2007 and is the proceedings chair of ACM Multimedia 2006. He is on the editorial board of SIGMOD DiSC, the ACM Computers in Entertainment magazine and the International Journal of Multimedia Tools and Applications. He has served on the conference program committees of many leading conferences in multimedia and is a member of ACM and IEEE.