Publications and papers

0	Title	A Server-centric Streaming Model		
	Citation	Jin Hwan Jeong and Chuck Yoo, "A Server-centric Streaming Model," in *NOSSDAV 2000*, pp 25-34, North Carolina, USA, June 2000		
	Category	Workshop: NOSSDAV 2000	Year	2000.06
	Abstract	The current streaming technology is based on a model that a server sends encoded streams and that a client does decoding and rendering in real time. In this model, a client must have a powerful hardware and must have specific decoders to handle various compression algorithms (e.g. MPEG, H-263, etc.). This paper starts with a different assumption: We present a new streaming model where both the server and the client participate in the decoding process. The new model reduces the processing requirement at client to the level that a thin device with 486-class CPU (called Sun Ray 1*) is able to play the full-size (640X480) NTSC video at 30 frame/sec. Furthermore, the decoding at client becomes independent of any compression algorithm so that Sun Ray 1 can play streams of various compression algorithms without specific decoders.		
	PDF	 Adobe Acrobat Document		
1	Title	Software-Based Video/Audio Processing for Cellular Phones		
	Citation	Jin Hwan Jeong and Chuck Yoo, "Software-Based Video/Audio Processing for Cellular Phones," in *Telecommunication Systems*, Vol. 28, Num. 2, pp 185-210, Feb. 2005		
	Category	SCIE: Telecommunication Systems(ISSN: 1018-4864)	Year	2005.02
	Abstract	Nowadays, most cellular phones are used beyond voice communication. Although the processing power of cellular phones is sufficient for most data applications, it is difficult to play video and audio contents in software because of their computational complexity and lack of basic tools for multimedia processing, so software-based multimedia processing on cellular phones is a challenging issue. Several transcoding methods are introduced to address this issue, but they are mainly of the DCT-domain conversion. Hence, they are only applicable to high-end cellular phones. To develop a solution for low-end and mid-tier cellular phones, we begin this paper by analyzing the complexity of existing video standards to see if it is possible to play them on cellular phones by software. Next, various coding profiles as combinations of subalgorithms are studied, and we select a profile that adapts its complexity to the processing power of cellular phones. Also, an efficient dithering algorithm called out-of-order dithering is developed. We implement the profile with out-of-order dithering in an actual cellular phone software environment and present the performance results. The performance results show that software based video/audio processing is indeed possible on low-end cellular phones.		
	PDF	 Adobe Acrobat Document		
2	Title	A video streaming system for mobile phones: practice and experience		
	Citation	Hojung Cha and Jongmin Lee, Jongho Nang and Sung-Yong Park, Jin-Hwan Jeong, Chuck Yoo and Jin-Young Choi, "A Video Streaming System for Mobile Phones: Practice and Experience," in *Wireless Network*, Vol. 11, No. 3, pp. 265-274, May 2005		
	Category	SCI: Wireless Network(ISSN: 1022-0038)	Year	2005.05
	Abstract	This paper presents a case of video streaming system for mobile phone which has actually been implemented and deployed for commercial services in CDMA2000 1X cellular phone networks. As the computing environment and the network connection of cellular phones are significantly different from the wired desktop environment, the traditional desktop streaming method is not applicable. Therefore, a new architecture is required to suit the successfully streaming in the mobile phone environment. We have developed a very lightweight video player for use in mobile phone and the related authoring tool for the player. The streaming server has carefully been designed to provide high efficiency, reliability and scalability. Based on a specifically-designed suite of streaming protocol, the server employs an adaptive rate control mechanism which transmits the media packets appropriately into the network according to the change in network bandwidth.		
	PDF	 Adobe Acrobat Document		
3	Title	The design of digital items server for processing multi DI clients on ubiquitous environments		
	Citation	Choon Seo Park, Jung-Keun Kim, Jin-Hwan Jeong, YongJu Lee, Ok-Gee Min, and Hag-Young Kim, "The design of digital items server for processing multi DI clients on ubiquitous environments," in *International Conference on Advanced Communication Technology*, pp. 4, Feb. 2006		
	Category	Conference: ICACT 2006	Year	2006.02
	Abstract	To stream adapted contents to a variety of devices such as PDA, PC, HDTV and so on, on ubiquitous environments, digital items (DI) client access DI server to get information for adapted contents streaming and to store data related with streaming service. When a lot of DI client concurrently connect DI server, to increase the performance of the DI server in working process related with adapted streaming, we propose new technique that there are some main controller threads and each main controller thread has its own FIFO, which manages DI messages. Because each main controller thread has its own FIFO, by distributing DI messages to some main controller thread that is less busy, we make DI server keep good performance and condition.		
	PDF	 Adobe Acrobat Document		
4	Title	On Multiple Description Streaming with Cluster-based Server		
	Citation	Yuhyeon Bak, Jinhwan Jeong, Yongju Lee, Kapdong Kim, Changsoo Kim, Hagyoung Kim, and Kywonsok Kim, "On Multiple Description Streaming with Cluster-based Server," in *Asia-Pacific Communications Conference*, pp. 1-5, Aug.		

		2006		
	Category	Conference: APCC 2006	Year	2006.08
	Abstract	The cluster system with shared-nothing storage cannot escape from the problem of skewed request toward specific contents. This paper, therefore, suggests streaming method using MDC (multiple description coding) instead of using single original content; this method is able to cope with skewed request in shared-nothing storage server as well as to continue to provide services in case of the system failure. Also, the system can support adaptive streaming service according to user player type, network status, the load of server, and client.		
	PDF	Adobe Acrobat Document		
5	Title	Cooperative Multimedia Playback Architecture for Pervasive Cellular Phones		
	Citation	Jin-Hwan Jeong and Hag-Young Kim, "Cooperative Multimedia Playback Architecture for Pervasive Cellular Phones," in *International Conference on Mobile Ubiquitous Computing, Systems, Services and Technologies*, pp. 204-208, Nov. 2007		
	Category	Conference: UBICOM 2007	Year	2007.11
	Abstract	Cellular phones as one of the necessities of life has been developed very rapidly, and various services for them are introduced. However, due to the insufficient hardware resources, multimedia services depend on special hardware devices which cause high manufacturing cost and high battery consumption. In this paper, we introduce a software based multimedia playback architecture that can be used for multimedia services. To realize software-based scheme, we start from video partial decoding and VOCODER timer. With these two tools, we envision multimedia player architecture working with other existing tasks without any modification and without any special hardware device. In experiments, we show that software-base playback is really possible for pervasive cellular phones.		
	PDF	Adobe Acrobat Document		
6	Title	Trick Play Method for HD H.264 Set-Top Box		
	Citation	Jin-Hwan Jeong, Ok-Gee Min, Yong-Ju Lee, Choon-Seo Park, Hag-Young Kim, and Myung-Joon Kim, "Trick Play Method for HD H.264 Set-Top Box," in *International Conference on Consumer Electronics*, pp. 1-2, Jan. 2008		
	Category	Conference: ICCE 2008	Year	2008.01
	Abstract	We envision a mid-session control with 2-level speed scaling scheme that server can control content playback speed without client's aid. Also, our scheme doesn't need re-encoding, so server still can use well-known performance features. Therefore, it promises great advantages for set-top box makers.		
	PDF	Adobe Acrobat Document		
7	Title	UMOST : Ubiquitous Multimedia Framework for Context-Aware Session Mobility		
	Citation	Yong-Ju Lee, Choon-Seo Park, Jin-Whan Jeong, Hag-Young Kim, and Cheol-Hoon Lee, "UMOST : Ubiquitous Multimedia Framework for Context-Aware Session Mobility," in *International Conference on Multimedia and Ubiquitous Engineering*, pp. 3-8, April 2008		
	Category	Conference: ICMUE 2008	Year	2008.04
	Abstract	With the increasing use of small portable devices and wireless networks, a trend to support computing on the move has emerged. This trend is referred to as 'anytime/anywhere computing' for mobility support. In particular, multimedia service with heterogeneous devices, location-free access and user-context awareness is still a very active and evolving field of research in broad areas. In this paper, a movable multimedia framework, namely UMOST(ubiquitous middleware of streaming technology), is proposed for multimedia session mobility. It provides various levels of quality of service management, as well as seamless user-level handoffs using MPEG-21 digital item adaptation (DIA). It serves scalable streaming adaptive to the user, and deploys a back-end content distribution network for adapting dynamically to environmental changes through prefetching. The implemented framework employs a smart space aimed at demonstrating the feasibility of multimedia session mobility.		
	PDF	Adobe Acrobat Document		
8	Title	Trick Play Method for HD H.264 Set-Top Box		
	Citation	Jin-Hwan Jeong, Yong-Ju Lee, Hag-Young Kim, and Myung-Joon Kim, "Trick Play Method for HD H.264 Set-Top Box," in *IEEE Transactions on Consumer Electronics*, Vol. 54, Issue 2, pp. 817-822, May. 2008		
	Category	SCI: IEEE Trans. on Consumer Electronics(ISSN: 0098-3063)	Year	2008.05
	Abstract	Trick play functionality in set-top box players is an attractive feature to VoD consumers. In this paper, we envision a mid-session control with 2-level speed scaling scheme that server can control content playback speed without client's aid so that no software/hardware upgrading in set-top box requires. Especially, as our scheme does not need bit stream re-encoding, server still can use well-known performance features such as network acceleration cards. Therefore, it promises great advantages for VoD service providers and set-top box manufacturers.		
	PDF	Adobe Acrobat Document		
9	Title	Hint File-Based Implementation of Contents Navigation Methods for Set-Top Box		
	Citation	Jin-Hwan Jeong, Yong-Ju Lee, Hag-Young Kim, and Myung-Joon Kim, "Hint file-based implementation of contents navigation methods for set-top box," in *International Conference on Consumer Electronics*, pp. 1-2, Jan. 2009		

	Category	Conference: ICCE 2009	Year	2009.01
	Abstract	In this paper, a hint file scheme for contents navigation algorithms specialized for set-top box is introduced. As a hint file contains overall information of video/audio properties, video frame, and GOP structure, a server can do streaming without parsing elementary streams. Especially, as our scheme aims at the set-top box, a hint file contains full information needed for set-top box requests so that a server can process the requests efficiently. This promises great advantages for service providers for set-top box-based systems.		
	PDF	 Adobe Acrobat Document		
10	Title	Hint File-Based Implementation of Contents Navigation Methods for Set-Top Box		
	Citation	Jin-Hwan Jeong, Yong-Ju Lee, Hag-Young Kim, and Yu-Hyeon Park, "Hint file-based implementation of contents navigation methods for set-top box," in *IEEE Transactions on Consumer Electronics*, Vol. 54, Issue 2, pp. 896-901, May. 2009		
	Category	SCI: IEEE Trans. on Consumer Electronics(ISSN: 0098-3063)	Year	2009.05
	Abstract	In this paper, a hint file scheme for contents navigation algorithms specialized for set-top box client is introduced. As a hint file contains overall information of video/audio properties, video frame, and GOP structure, a server can do streaming without parsing elementary streams. Especially, as our scheme aims at the set-top box, a hint file additionally contains information needed for set-top box requests so that a server can process the requests efficiently. This promises great advantages for service providers for set-top box-based systems.		
	PDF	 Adobe Acrobat Document		
11	Title	Portable Device-Centric Streaming Service		
	Citation	Jin-Hwan Jeong, Hag-Young Kim, and Eunah Kim, "Portable Device-Centric Streaming Service," in *Future Multimedia Networking*, pp. 224-229, June 2009		
	Category	Workshop: FMN 2009	Year	2009.06
	Abstract	We envision a portable device-centric streaming service system. To cope with the demand for displaying contents stored in a portable device onto a high resolution display device, our system provides an autonomous and seamless device-centric streaming service model. As this model takes pairing phase via Bluetooth and streaming phase via broad band network, consumers do not need to know about specific information of nearby systems for streaming. Along with the user convenience, this approach saves battery power by yielding decoding and frame scaling to the better external device. This promises great convenience for users of HD video recordable consumer electronics.		
	PDF	 Adobe Acrobat Document		
12	Title	An Efficient Management and Automatic Failover on a Large-Scale Cluster Monitoring System		
	Citation	Choon Seo Park, Song-Woo Sok, Jin-Hwan Jeong, Yong-Ju Lee, Chang Soo Kim, Ok-Gee Min, Hag-Young Kim, and Jae Soo Yoo, "An Efficient Management and Automatic Failover on a Large-Scale Cluster Monitoring System," in *International Conference on SYSTEM SCIENCE and SIMULATION in ENGINEERING*, Oct. 2009		
	Category	Conference: WSEAS	Year	2009.10
	Abstract	In this paper, we propose method that an efficient technique for automatic configuration of large cluster monitoring system and automatic failover on failure commodity server nodes. Detecting failure nodes and making a complete failover for failure nodes leads to reduce cost of administering nodes and keep high availability of numerous commodity nodes. Making a group by subnet unit, there are one Group Master and many leaf nodes on a group. After Leaf nodes collect monitoring data and send them to Group Master. Group Master node saves monitoring data which is received by leaf nodes on DB server node. When there are some crashes on leaf nodes, the leaf node is deleted by Cluster Master. If crash occurs Group Master, Group Master node is deleted by Cluster Master and new Group Master is assigned among leaf nodes which are active state by Cluster Master. According to automatic failover for failure nodes, we can keep high availability on large-scale cluster systems.		
	PDF	 Adobe Acrobat Document		
13	Title	Cable TV-Based Home Video Streaming System: Practice and Experience		
	Citation	Jin-Hwan Jeong, Yong-Ju Lee, Song-Woo Sok, Hag-Young Kim, and Yoo-Hyun Park, " Cable TV-Based Home Video Streaming System: Practice and Experience," in *IEEE Network Magazine*, Vol. 23, Issue 6, pp. 22-28, Nov./Dec. 2009		
	Category	SCI: IEEE Network Magazine(ISSN: 0890-8044)	Year	2009.12
	Abstract	This paper presents a practical home video streaming system that has actually been implemented and deployed for commercial services on a cable television (TV) network. Because streaming components and network connections of a cable TV network are considerably different from those of desktop streaming systems available on the Internet, traditional systems and techniques for video streaming are not enough for that of a cable TV network. Therefore, several special systems and server-centric streaming techniques have been developed for a cable TV network and home video clients. In particular, server-centric streaming techniques are crucial because a set-top box which is the client in the case of a home video streaming system lacks processing power. We have developed a highly efficient streaming server using network acceleration and data bypassing techniques. As a result, our state-of-the-art streaming server enables high scalability and provides various content navigation modes, including faster playback, to off-the-shelf set-top boxes.		

	PDF	Adobe Acrobat Document
14	Title	Efficient Post-Video Processing for Thin Display Devices
	Citation	Jin-Hwan Jeong and Hag-Young Kim, "Efficient Post-Video Processing for Thin Display Devices," in *International Conference on Consumer Electronics*, pp. 1-2, Jan. 2010
	Category	Conference: ICCE 2010 / Year: 2010.01
	Abstract	Display devices of portable devices can express very limited colors so that the dithering at the post-video processing step is inevitable, which degrades greatly the video playback performance. The main cause comes from the huge data size for converting full color RGB to dithered RGB. This paper proposes an efficient post-video processing method that reorders sub-phases of the post-video processing step so as to lighten the computation. This simplifies circuit logic for the post-video processing, and eventually consumer devices drain less battery power for it.
	PDF	Adobe Acrobat Document
15	Title	Efficient Post-Video Processing for Thin Display Devices
	Citation	Jin-Hwan Jeong, "Efficient Post-Video Processing for Thin Display Devices," in *IEEE Transactions on Consumer Electronics*, Vol. 56, Issue 2, pp. 1097 – 1101, May., 2010
	Category	SCI: IEEE Trans. on Consumer Electronics(ISSN: 0098-3063) / Year: 2010.05
	Abstract	Display devices of portable devices can express very limited colors so that the dithering at the post-video processing step is inevitable, which degrades greatly the video playback performance. The main cause comes from the huge data size for converting full color YUV to dithered RGB. This paper proposes an efficient post-video processing method that reorders sub-phases of the post-video processing step so as to lighten the computation and to reduce the data size. This simplifies circuit logic for the post-video processing, so the hardware manufacturing cost can be lower and that consumer devices can drain less battery power for it.
	PDF	Adobe Acrobat Document
16	Title	A Privacy Enhanced Contents Sharing in Mobile Networks
	Citation	Eunah Kim, Daeyoub Kim, and Misuk Huh, Jin-Hwan Jeong, and Byoung-Joon Lee, " A Privacy Enhanced Contents Sharing in Mobile Networks," in *International Conference on Consumer Electronics*, will appear in 2011
	Category	Conference: ICCE 2011 / Year: 2011.01
	Abstract	In this paper, we propose the access control model for privacy protection when personal contents are shared in mobile networks via personal CE devices without any centralized server or service provider. We adopt an encryption based contents protection and an Access Control List (ACL) which provides the information about content encryption key only for permitted users. Our scheme is suitable for recent smart phones which equip a hierarchical content structure and can communicate with other devices ubiquitously.
	PDF	Adobe Acrobat Document