

MPEG: A Video Compression Standard for Multimedia Applications

As far as I can tell this paper was published in an ACM journal in 1991. ACM is a well regarded organization.

This paper presents the background, the methodology of the development, and some of the specifications of the MPEG. The growing importance of digital video meant that a new and better video standard was vital for the industry (including entertainment, digital publishing, communication, games, etc.). The MPEG effort unclouded both academia and peep from the industry, all lead by the MPEG committee. The work was started in 1988, the project had a tight schedule to avoid the establishment of multiple incompatible de facto standards. The project was divided into three phases: requirements, competition and convergence. The authors then go on to list all the requirements the committee had established, these include type of storage media, VCR functionality, AV synchronization and more. The paper then goes on to describe the specifics of the MPEG standard, I won't repeat the details here.

I don't know how to analyze this paper as it's more of a historic review of the MPEG process, so I don't have any specific weaknesses to note or other comments on the quality of the paper. What I can say is that it was interesting to see that they had the foresight to expedite the development in order to stop a situation like the one we had recently with the HD-DVD vs Blu-Ray format war. Getting the entire industry to rally around a single standard is a big achievement.

Overview of the Scalable Video Coding Extension of the H.264/AVC Standard

This paper was published in IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS FOR VIDEO TECHNOLOGY, VOL. 17, NO. 9, SEPTEMBER 2007. IEEE is a well regarded association, this journal has an acceptance rate in the 20-40% area from what I can find.

The topic of the paper is the SVC (Scalable Video Coding), which is a solution to the scalability needs of modern multimedia applications. From the paper: "The objective of the SVC standardization has been to enable the encoding of a high-quality video bit stream that contains one or more subset bit streams that can themselves be decoded with a complexity and reconstruction quality similar to that achieved using the existing H.264/AVC design with the same quantity of data as in the subset bit stream."

The rest of the paper just goes through all the different parts of the technical design of the SVC extension. The paper also includes results from experiments donnas to show the temporal-, spatial- and SNR-scalability of SVC.

I found this paper very hard to read, and also a bit to specific regarding technical details, at least for me. Previous knowledge and an interest in the complexities of an encoding technology is probably good to have before attempting to read this paper.

I realize that this homework is subpar, it is a result of a very hard paper and less time than usual to do homework this week.