



Seminar Experience

ELECTRICAL & COMPUTER ENGINEERING

Friday, Feb. 27

11 am—12 pm

FIU Engineering Center

EC Room # 1105

www.ece.fiu.edu



“Streamloading: Low Cost High Quality Video Streaming”

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ABSTRACT

There are two ways users can legally consume media content: downloads and streaming. Downloads, since they confer some ownership rights, are priced much higher than streaming, which is consumable only over a limited duration, since a “live connection” has to be maintained. However, streaming, especially for content like video, requires the maintenance of an expensive high bandwidth connection over the duration of its consumption. In a mobile cellular environment, or any access network that delivers variable bandwidth, e.g., cable, this bandwidth cannot be guaranteed for the duration of consumption, leading to variable viewing quality for users. Indeed, video streaming applications are a major contributor to the recent dramatic rise of data traffic in cellular networks.

We have proposed a novel scalable video delivery service called streamloading that can potentially allow users to enjoy near download quality videos, while still being legally classified as a streaming service. Streamloading uses Scalable Video Coding (SVC), available as an extension of the H.264 video coding standard, to encode video into multiple layers: a base layer that is necessary for the video to be decoded and viewed with low quality, and enhancement layers that are applied to improve video quality. Some preliminary results will be presented, using optimization techniques, as well as an implementation.

BIOGRAPHY

Shivendra S. Panwar is Professor and Chair of the Electrical and Computer Engineering Department at NYU Polytechnic School of Engineering. He received the B.Tech. degree in electrical engineering from the Indian Institute of Technology Kanpur, in 1981, and the M.S. and Ph.D. degrees in electrical and computer engineering from the University of Massachusetts, Amherst, in 1983 and 1986, respectively.