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A Web Lecture Capture System with Robotic Speaker Tracking

Wednesday 15 February 2006 16:00 (20 minutes)

The major challenges preventing the wide-scale generation of web lecture recordings include the compactness and price of the required hardware, the speed of the compression and posting operations, and the need for a human camera operator. We will report on efforts that have led to major progress in addressing each of these issues. We will describe the design, prototyping and pilot deployment of an affordable web lecture capture device that is portable and robust and which accepts input from a speaker's laptop without interfering with its projection onto a screen, and rapidly archives and posts the synchronized video, audio and slides onto the web. The system incorporates an infrared camera to provide automatic tracking of the speaker and thereby removes the need for a camera-operator. We will report on our laboratory tests of an array of available tracking technologies, the efficacies of each, and the performance of our current system. We will also report on the development of an automatic metadata extraction system so that date, time, keywords and other information can be harvested from each presentation and associated with the recorded lecture, and entered into a database that is optimally configured for global sharing. In addition, we will discuss a proposed global standard for an entity called the "Lecture Object" that would permit recorded lectures to be accessed and replayed by essentially any user for decades to come, independent of changes in commercial playback applications. Work on this project was supported with a grant from the U.S. National Science Foundation.

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