CS448: Experiments in Digital Television

Description

The technology of television is about to change radically. The old analog broadcast standard is being replaced with a digital standard. Although most of the current argument about digital television (DTV) focusses on aspect ratios, resolutions, and progressive scan vs. interlacing, the flexibility and extensibility of an all-digital system raises a wide range of bigger issues and more interesting possibilities. Are there other more innovative methods for encoding video? What types of interaction are possible within the context of television? What forms of 3D television might catch on? And, given the broadcast nature of the medium, can it be used for other types of information dissemination?

The goal of this course is to explore what new experiences are possible within the constraints of DTV. We will begin with a series of background lectures on the basics of digital television, including its history, the transport protocols and compression methods used, proposals for additional capabilities in emerging standards such as MPEG-4 and QuickTime, and the latest image-based modeling and rendering algorithms. There will also be 4-5 guest lectures from industry, and discussion and debates on controversial topics of interest. Finally, we will break the class up into a small number of project teams each building a working extension to a DTV subsystem. These projects will be done on the DTV infrastructure built by Intel, including their experimental DTV transmitter and DTV receiver for a PC. The final day will consist of a live broadcast from Intel in Santa Clara to Stanford of the demonstrations produced by the class.

The class is open to students with a background in computer graphics, image processing, and multimedia. Enrollment is limited to 20.

Projects

- Digital VCR
- Interactive Game Show
- Video Overlays and DTVML
- Lecture of the Future
- Video Panorama

Infrastructure

Information

- Course Schedule
- Lecture Slides

Instructors

Pat Hanrahan
hanrahan@cs.stanford.edu
Rm 370 Gates Computer Science Building
(650) 723-8530

Serge Rutman
serge.rutman@intel.com
(408) 765-4657

Philipp Slusallek
slusallek@graphics.stanford.edu
Rm 364 Gates Computer Science Building
(650) 725-3728

Teaching assistant

Milton Chen
miltchen@graphics.stanford.edu
Rm 396 Gates Computer Science Building
(650) 725-3648

Place

- When: 2:30-3:45pm, Tu/Th
- Where: Graphics Conference Room, Gates Rm 392
- Home Page: http://graphics.stanford.edu/courses/cs448-98-fall/
- class email list: cs448students@graphics.stanford.edu

  To subscribe: send mail to cs448students-request@graphics with subscribe your_email@address in the message body