CAP 6010 Multimedia Systems

Credits: 3 credits

Text book, title, author, and year: Student notes (given to students)

Reference materials: Research papers (recommended readings)

Specific course information

Catalog description: Multimedia systems concepts and characteristics. Multimedia compression techniques. Systems architectures for multimedia. Multimedia networking, communications, and synchronization. Multimedia operating systems. Video partitioning and retrieval. Multimedia systems and tools. Wireless multimedia. Advanced topics and grand challenges in multimedia. Multimedia applications. Student projects.

Prerequisites: Prerequisites: Graduate status in CS, CE, or EE

Specific goals for the course: To provide an in-depth survey of the state-of-the-art in multimedia system design and applications. The student shall learn the basic techniques and standards for image and video compression (such as JPEG and MPEG), multimedia networking and communications, multimedia security and mining, and operating system support for multimedia.

Brief list of topics to be covered:

1. Introduction to multimedia systems
2. Image compression techniques and standards
3. Video compression techniques and standards
4. Motion estimation algorithms
5. Image and video indexing and retrieval
6. Multimedia security and mining
7. Multimedia operating systems
8. Processor architectures for multimedia
9. Multimedia and the Internet
10. Multimedia grand challenges
11. Students programming/research projects