

COT 6930 – Video Communications

Course Description: This is a graduate level course on digital video communications. The course will introduce video compression and issues in video transmission over wired and wireless networks. The course will cover video technologies widely used in the industry such as MPEG-2, MPEG-4, H.264, and transport protocols such as RTP and MPEG-2 TS.

Prerequisite: graduate status and basic knowledge of programming and communication networks.

Text book: Multimedia Communication Systems: Techniques, Standards, and Networks by K.R. Rao, Z.S. Bojkovic, and D.A. Milovanovic. Prentice Hall, 2002, ISBN 0-13-031398-X

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Studio Time: T-R 4:30 to 5:50 PM

Office Hours: T-R 6:00 to 7:30 PM

Goals: This course is intended to provide a background and experience in the area of video communications relevant to the industry needs today as well as the challenges and future developments in the field.

Topics:

1. Introduction to digital video compression
2. Video compression – MPEG-2, MPEG-4, H.264
3. Multimedia content representation (MPEG-4 Systems and SMIL)
4. MPEG-2 Transport
5. Error resilience
6. Video delivery over IP networks
7. Video delivery over wireless networks
8. RTP (Realtime Transport Protocol)
9. Video servers
10. Video adaptation and transcoding

Grading:

Midterm Exam	40%
Student projects	60%