Multimedia Communications: Technological Advances and Social Implications
(for PhD students)
2014 edition
Politecnico di Torino

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Bibliography

- **Digital Speech: Coding for Low Bit Rate Communication Systems**, A. M. Kondoz, Wiley (2 edition), 2004, ISBN: 0470870087

- **Speech Coding Algorithms: Foundation and Evolution of Standardized Coders**, Wai C. Chu, Wiley-Interscience (1st edition) 2003, ISBN: 0471373125

- **Audio Signal Processing and Coding**, A. Spanias, T. Painter, V. Atti, Wiley, 2006, ISBN: 0471791478

- **MPEG Video Compression Standard**, J.L. Mitchell, D.J. Legall, C.Fogg, Springer, 2003, ISBN: 0412087715

- **H.264 and MPEG-4 Video Compression: Video Coding for Next Generation Multimedia**, I.E.G. Richardson, Wiley, 2003, ISBN: 0470848375

- **The H.264 Advanced Video Compression Standard**, I.E.G. Richardson, Wiley, 2010, ISBN: 978-0470516928, 2nd edition

- **RTP: Audio and Video for the Internet**, Colin Perkins, Addison Wesley, 2003, ISBN: 0672322498

- **Multimedia Networking: From Theory to Practice**, Jenq-Neng Hwang, Cambridge University Press, 2009, ISBN: 9780521882040

- **Multimedia over IP and Wireless Networks**, M. van der Shaar, P. Chou, Academic Press, 2011, ISBN: 0120884803

Online resources:
- http://www.jpeg.org : For lossy image coding, in particular the various JPEG versions
- http://jpeg.universumdigitalis.com (to be soon migrated to the previous site)
- http://www.chiariglione.org/mpeg : For all MPEG-related activities (including DASH)
- http://www.ietf.org : for all RFCs
- http://www.cc.gatech.edu/classes/AY2011/cs7270_spring/watching-video-over-Web.pdf : for an interesting comparison of the push and pull streaming paradigms.
- http://multimediacommunication.blogspot.it/ : Christian Timmerer's blog arelated to multimedia communication. In particular, streaming of multimedia content within heterogeneous environments enabling Universal Multimedia Experience (UME).
- http://www.ee.columbia.edu/~dpwe/ : Dan Ellis's classes on Speech and Audio Signal Processing at Columbia University
- http://www.hpl.hp.com/techreports/2002/HPL-2002-260.pdf for a brief description of many robustness techniques for multimedia communication

Other resources (scientific articles)

General:

- **Special issue on HEVC**, IEEE Trans. On Circuits and Systems for Video Technology, Vol. 22, No. 12, Dec 2012. in particular Gary J. Sullivan, Jens-Rainer Ohm, Woo-Jin Han, Thomas Wiegand, "Overview of the High Efficiency Video Coding (HEVC) Standard"
- **Special issue on H.264/AVC**, IEEE Trans. On Circuits and Systems for Video Technology, Vol. 13, No. 7, in particular Thomas Wiegand, Gary J. Sullivan, Gisle Bjøntegaard, and Ajay Luthra, "Overview of the H.264/AVC Video Coding Standard"
- Sullivan, G. J., & Wiegand, T. "**Rate-distortion optimization for video compression**. *IEEE Signal Processing Magazine,* vol. *15 no. 6*, 1998, pp. 74-90.
- Goyal, Vivek K. **Multiple description coding: Compression meets the network**. *IEEE Signal Processing Magazine,* vol. 18 no. 5, 2001, pp. 74-93.
- Painter T., Spanias A., **Perceptual Coding of Digital Audio.** *Proceedings of the IEEE*, vol. 88 no. 4, 2000, pp. 451-515-
- Apostolopoulos, John G.; Tan, Wai-tian; Wee, Susie J., **Video Streaming: Concepts, Algorithms, and Systems**. HP Laboratories, report HPL-2002-260, 2002

Specific of some topics discussed in the course:

- Zhang, Rui, Shankar L. Regunathan, and Kenneth Rose. **Video coding with optimal inter/intra-mode switching for packet loss resilience**. *IEEE Journal on Selected Areas in Communications,* vol. 18 no. 6, 2000, pp. 966-976.
- Shoham, Yair, and Allen Gersho. **Efficient bit allocation for an arbitrary set of quantizers** *IEEE Transactions on Acoustics, Speech and Signal Processing,* vol. 36 no. 9, 1988, pp. 1445-1453.
- Everett III, Hugh. **Generalized Lagrange multiplier method for solving problems of optimum allocation of resources**. *Operations research* vol. 11 no. 3, 1963, pp. 399-417.
- Herre, Jürgen. **Temporal Noise Shaping, Qualtization and Coding Methods in Perceptual Audio Coding: A Tutorial Introduction.** 1*7th International AES Conference*, 1999.
- Brosh, Eli, et al. **The delay-friendliness of TCP for real-time traffic**. *IEEE/ACM Transactions on Networking*, vol. 18 no. 5, 2010, pp. 1478-1491.

Reference journals with many interesting articles on the course topics

- IEEE Communications Magazine
- IEEE Signal Processing Magazine
- IEEE Wireless Communications
- IEEE Transactions on Circuits and Systems for Video Technologies
- IEEE Journal on Selected Areas in Communications
- IEEE Transactions on Image Processing
- IEEE Transactions on Multimedia
- IEEE Transactions on Audio, Speech and Language processing
- Journal of the Audio Engineering Society