**Summary**

The course will cover perceptual modalities in computers, models for analyzing people (representation, detection and localization, segmentation, tracking, recognition).

**Content**


**Keywords**

Artificial perception, human representation, multi-modalities, audio, video, probabilistic model, graphical models.

**Learning Prerequisites**

**Recommended courses**

Undergraduate-level knowledge of linear algebra, statistics, image and signal processing.

**Assessment methods**
• written exam
• homeworks (includes practical work)
• paper presentation

Resources

Bibliography

• C. Bishop, Pattern Recognition and Machine Learning, Springer, 2008
• M. Brandstein and D. Ward (eds.), Microphone Arrays, Springer, 2001
• D. Forsyth and J. Ponce, Computer Vision: a Modern Approach, Prentice Hall, 2002
• B. Gold and N. Morgan, Speech and Audio Processing, Wiley, 1999
• M. I. Jordan (ed.), Learning in Graphical Models, MIT Press, 1999

The library recommends:

• "Microphone arrays : signal processing techniques and applications / Michael Brandstein ... [et al.] (eds.)". Year:2001. ISBN:978-3-540-41953-2
• "Speech and audio signal processing / Ben Gold, Nelson Morgan, Dan Ellis ; with contrib. by Hervé Bourlard ... [et al.]". Year:2011. ISBN:978-0-470-19536-9

Ressources en bibliothèque

• Pattern Recognition and Machine Learning / Bishop
• Microphone Arrays / Brandstein
• Speech and Audio Processing / Gold
• Learning in Graphical Models / Jordan
• Computer Vision: a Modern Approach / Forsyth