

Course Title: Social robotics

Course description

Course components	14h CM; 16 TP
European credits	3 ECTS
Master specialization	Ingénierie pour la santé
Semester	S3

a) Objective

The main aim is to provide the students with theoretical and methodological perspectives relevant to the perception and modeling of social interactions. This course covers representations and statistical modeling of humans and their activities in the context of social robotics, using one or more modalities (mainly audio and/or video). These concepts will be considered in their relations to the following dimensions : verbal and non-verbal, socio-emotional and ethical.

b) Content

- 1) Introduction to verbal and non-verbal communication : multi-modal processing, socio-emotional signals
- 2) Human behaviour analysis for social robotics
- 3) Design of social robots : embodiment
- 4) Cognitive architectures for human-robot interaction : interactive loops, shared decision, learning, communication
- 5) Metrics for human-robot interaction
- 6) Applications : personal robotics, assistive devices, therapeutic devices.
- 7) Ethics

c) Pre-requisites

Programming (C++ or Java)

d) Evaluation

Written examination and practical work evaluation

e) References

Teaching method

In class work	Total time	Weekly hours	Enrollment
Lectures	14	4	
Tutorials	16	4	
Practical work			
Project			
Other			