

HCI – Human Computer Interface

Block 4(Session 5): Pervasive Computing – Self-study assignment Spring 2021

During the plenary sessions and according to the available copy of slides, a formal presentation has been done on some important issues regarding Pervasive Computing and related topics.

For this Self-study assignment, you are asked to **prepare, develop and present a unique subject (slides' presentation is expected)**. You must to choose one subject between the short list given below and **only two groups will be allowed to develop the same subject**, in order to increase the interest and plurality of the presentation session (next April 8th).

You are asked to:

- 1) Prepare one presentation per group, based on slides. All the members of the group must to participate in the presentation.
- 2) Upload to RACO your slides for the presentation (one per group is enough) before April 8th at 9.00
- 3) Prepare and upload to the RACO a Report (around 10 pages) on your subject. Upload must be done before April 15th

List of possible subjects (you are, also, allowed to propose a different and new one):

1. Try to define and stablish a clear relationship between Affective computing and Pervasive computing domains (you should take as a reference the work by Rosalind Picard from MIT)
2. Determine the role of the Multimodal interaction in the Pervasive computing domain (relationship with technology aspects, electronic interfaces, fusion algorithms...)
3. Communication protocols are a key issue for pervasiveness. Develop an overview of Bluetooth protocol (short history, current status and future perspectives).
4. Communication protocols are a key issue for pervasiveness. Develop a comparative overview of Bluetooth and ZigBee protocols (main features, advantages/disadvantages, available technology and characteristics).
5. How far we are from the complete Smart home?
6. Try to define and develop your idea of Smartcity, considering the Computing Awareness concepts.
7. Develop a critic overview of pervasiveness concepts and technology use in the eHealth domain.
8. Analyse the critic future challenges for a complete pervasive deployment in our lives (security, safety, legislation...).
9. Analyse the possibilities and use of the Blockchain technology for security, trust and traceability in data transactions.
10. Try to clarify the role of actual new proposal for communication protocols, like 5G, in the Health scenario.
11. Stablish the relationship between pervasive computing and Artificial Intelligence. Is Computing Awareness the only possible approach?

You must to send an e-mail (joan.cabestany@upc.edu) asking for the assignment of one subject. You must, also, indicate an two more alternatives, in case your choice has been already assigned.