

- This is a closed book exam. You are not allowed to use any of the papers/videos of the self-study and the slides of the lectures.
- The exam has 2 parts: Theme 3, Theme 4.
- Laptops, tablets, graphical calculators, mobile phones, etc., are not allowed.
- This exam is in 9 pages.
- Some questions contain more than one sub-question. Don't forget to answer all.
- Although the questions are stated in English, you may answer in English or Dutch, whichever you are more comfortable with.
- For some questions, you may need to explain or motivate your answers, with so much detail that the examiner can judge whether you understand the material; so in these cases just saying "yes" or giving a formula without explanation is not enough.
- Visiting the toilet without explicit permission of the supervisor is not allowed. During the last 30 minutes of the exam, no toilet visits are allowed.
- Good luck

Student name:

Student number:

Theme 3: Distributed intelligence and context awareness (10 points)

1. If you could only use environmental sensors, what sensors would you consider for this application? Why are these good sensors, and what are the privacy implications? (2 points)

2. If you could ask people to download an app to their smartphone, what sensors would you focus on? Why are these good sensors, and what are the privacy implications? (2 points)

3. For the sensors you've chosen, both environmental and wearable, what features or processing of the data do you think would be informative of the mood of people in the room, and why? How would you compute those features? (3 points)

4. How would you obtain a training dataset for this application? How would you encode "mood", and how do you obtain ground truth? (3 points)

Theme 4: Interaction (10 points)

1. In the application context of a smart dining room, list an example of interaction in each of the four quadrants in the scheme of Ju & Leifer (foreground-reactive, foreground-proactive, background-reactive and background-proactive). Describe possibilities of sensing, interpretation and output that are associated with your examples. (3 points)

2. In what situation (according to Ju & Leifer) would it make sense for an interactive system to engage in face-saving or polite behavior? (2 points)

3. User's perception of new technology significantly affects the acceptance and adoption of the technology. From the perspective of the Technology Acceptance Model, which two perceptions identified by the model do affect the intention to use?

For each perception give an example that describe why this can affect the intention to use. (3 points)

4. Name the four main steps for an ambient intelligent system. Give an example of a Aml system that show how these main steps are connected. (2 points)