Lehrstuhl für Medieninformatik
Institut für Information und Medien, Sprache und Kultur
Universität Regensburg

Interaction Techniques and Technologies Assignment 10: Final Project

Summer semester 2021

Submission due: Friday, 23. July 2021, 23:55

Hand in in groups of max. three.

Your task is to implement an interactive system that allows for gestural interaction and supports novel interaction techniques.

10.1: Design the interactive system

Design an interactive system for one of the following tasks:

- sketching / notetaking
- previewing and organizing documents or photos
- proxemic interaction[1]
- generating music
- modeling / manipulating 3D objects
- any other interesting task, as long as you discuss it with us beforehand

The system needs to fulfil the following requirements:

- the DIPPID device is used for tracking something in some way
- the sensor data is preprocessed using adequate filters
- you need to design/implement at least one basic *interaction technique* for each team member, such as:
  - pattern/gesture recognition
  - copy & paste
  - undo
  - (chording) text entry
  - spatial manipulation of objects (move, rotate, zoom)
  - proximity-dependent information display
  - any other interaction technique, as long as you discuss it with us beforehand
- the system should be cool

Hand in the following file:

system_documentation.pdf: a short report (less than 10 pages) describing the system, its usage, and its implementation. A skilled reader should be able to re-implement the system based on your documentation. If the team has more than one member, please also document what parts each team member contributed. Please use the official thesis template.

[1] http://grouplab.cpsc.ucalgary.ca/Projects/ProjectProxemicInteraction

Points

- **4** The paper describes the system well.
- **2** The paper is visually appealing
- **2** The paper has enough detail to allow replication
- **2** The paper is well written.

10.2: Implement the interactive system

Develop a Python application that implements the aforementioned features. The application should be robust and fast.

Hand in the following file:

system_demo.py: a Python script that starts the demo when executed. It should accept a Bluetooth address as command line parameter for specifying the Wiimote to use. Additional files (e.g., media files) may be handed in, too.

Points

- **6** The application correctly implements all features.
- **2** The application is well documented.
- **2** The application is well-structured and follows the Python style guide (PEP 8).
- **3** The application works robustly
- **3** The application is responsive/fast
- **4** The application is enjoyable and beautiful

10.3: Present the interactive system

Create a short video (~3 minutes) about your system, with a focus on UI, features, and use cases until **30.07.2021** (see separate submission field in GRIPS).

Hand in the following file (on 30.07.2021):

system_presentation.mp4: a short video that shows all features of your system

Points

- **5** You are able to answer technical questions (separate meeting).
- **5** The video demonstrates the interaction in a real-life use case.
- **3** The video shows all features of the system
- **3** The video is beautiful

Submission

Submit via GRIPS until the deadline

All files should use UTF-8 encoding and Unix line breaks. Python files should use spaces instead of tabs.

Have Fun!