

Assignment for audio, designers, engineers

## Physical therapy game for ACL patients

In short

Your job	You are going to develop a game to motivate physical therapy clients to perform certain exercises over a longer period. The game will be audio-focused (with limited visual support) so people focus on their movements.
Your goal	To develop an audio-focused game that motivates people to do exercises that currently become boring over a long time period, with limited assets as there is only half a year of development time. After knee operation (for ACL), in the first weeks the patient improves quickly and the process remains motivating by itself. In the following months however, the patient still needs to build up muscle strength and speed. Can we keep these patients motivated with the help of a game and gamification techniques?
Possible solutions	The game should run on a windows tablet laptop (with dedicated graphics card). Movements can be tracked with XSens motion sensors. For the game, inspiration can be found in exergames such as Ring Fit Adventure, Dance Central, Just Dance, Wii Sports, Oh Shape and Beat Saber. The concept and game mechanics should appeal to the target audience.
About you	<ul style="list-style-type: none"> <li>- You want to learn about exergames and motion tracking</li> <li>- You want to learn about gamification techniques to motivate users in the long term</li> <li>- You want to learn about using audio to provide feedback and motivation</li> <li>- You like to develop and test concepts with users</li> </ul>



### Reason for this assignment

Ambient Intelligence (AmI) is a research group that specializes in making our environment smart. We use sensors, data science and augmented interaction to solve all kinds of problems in the areas of health, safety and industry. As part of the INSTANT project, we explore how we can help physical therapists (Topvorm Twente, RRD) and their patients through observing movement and providing feedback.

### Your job

The main challenge is to create an audio-focused game that motivates the user to keep doing exercises over a time period of a couple of months with limited assets (as there is limited development time).

### Your client

Ambient Intelligence (AmI) is a research group that specializes in making our environment smart. Our research comprises the fields of embedded systems, data science and augmented interaction. Examples of our projects can be seen at [www.saxion.edu/ami](http://www.saxion.edu/ami).

For more information, contact Danny Plass ([d.plass@saxion.nl](mailto:d.plass@saxion.nl)).