

## SHADOW GAME – MOTIVATION AND TESTING

Patrik ROŠTÍK<sup>1</sup>, Jan CINERT<sup>2</sup>

### 1 INTRODUCTION

Most of the games released these days are hand-centered, controlled by some combination of smashing buttons and pushing joysticks. It's not that we don't like it, we do, but it's just one way of game controlling. Wouldn't be more interesting or more exciting to control a game moving all your body to move around in the game environment, leaning left and right to avoid the bullets or aim with your own gun? It would be definitely more natural and healthier, if you count up the hours young people spend playing games. In the meaning there is a significant difference between jumping around and sitting pressing buttons. Selection of technology for such implementation is more than wide – computer vision, speech recognition or wireless technology. None of those were actually discovered recently, it's just the game industry keeping low expenses ( In couple last years, the situation is getting better ). We see a big potential in video processing and computer vision enhanced games. One of the biggest advantages is usage only a camera (or more of them) as an input device. This way user isn't restricted by wires, wearable or held devices, can move freely and naturally. On the other hand, the amount of information, that needs to be processed is much higher, comparing to a discrete buttons.

The Shadow Game is divided into levels and according to that appropriate ball speed and rate is chosen. Through the levels different challenges stand before the player, each demanding different players behavior:

Falling balls – The balls are simply falling down. They are appearing on random position on the top of the screen. Avoidance is easy, fast walking left and right is sufficient.

Falling balls with non-zero x-axis speed – The balls are falling down under angle from  $-45^\circ$  to  $45^\circ$ . They are appearing on random position on the top of the screen, the angle is random as well. It isn't hard to avoid the balls, sometimes you have to lean left or right.

Rolling balls – The balls start rolling from left or right bottom corner of the screen going to the opposite one (down). Player is forced to jump in order to avoid the balls. When the balls start roll frequently, it might be more physically demanding.

Left-right balls – The balls moves from the left side to right side not changing altitude or the other way around. Sometimes is necessary to duck and jump.

Random balls – The balls appear on left, top or right side of the screen having a random direction of movement. There are situations, where the player isn't able to dodge one or more balls.

Random balls slow motion – The same case as the previous one, but the balls move slowly and there is a lot of them. Despite the game mode is more or less same, interaction of a

---

<sup>1</sup> Patrik Rošík, student of the master study programme Applied Sciences and Informatics, specialization Cybernetics, e-mail: rostpa@students.zcu.cz

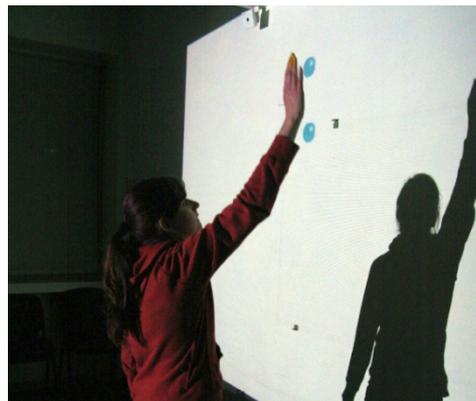
<sup>2</sup> Jan Cinert, student of the master study programme Applied Sciences and Informatics, specialization Cybernetics, e-mail: cinax@students.zcu.cz

players differ. Player avoids balls freezing his body in various positions, waiting for “the masses” of balls to pass him. In this mode, it's usually not possible to move around much, because the number of balls on screen is too high.

Combining some of the previous different game modes could be obtained (for example: Rolling balls + Random balls, ... )

Hide challenge – Player must in 1 second hide in a displayed box, or get hit by dozens of balls.

Each project with human-computer interaction has to be tested by the particular number of people to get the first outcomes and prune away the biggest shortcomings before the main public presentation. The task of the first testing of the Shadow game was to collect the information about the users, their point of view on the contentious parts of the game and to glean valuable advices how to make these parts more interesting. After each game the player filled up the short questionnaire to save the data and ideas for contiguous processing. The emphasis in the questionnaire was placed especially on the fun factor, difficultness and the main idea. In the questionnaire we put the queries, which are very important for making the Shadow game more interesting for the eventual players. We asked if playing the game with a shadow is a good idea, if young people are interested in computer games and technology and the main task was to answer the questions about the playability of the Shadow game. The first players were young people around twenty two years from different countries and miscellaneous gender.



**Fig. 1:** Testing the game

## 2 CONCLUSION

From the questionnaire we can see that people like the idea of playing the game with shadows. It's the simple version of interactive games (Wii sport, etc.). Some missing parts, like the score sign and sounds are very simple to add and it will be done in near future. Other parts need further development. But in the end, playing this game can be the funny way of rest somewhere in a big place, with many players.

## LITERATURA

Warren, J., 2003. *Unencumbered Full Body Interaction in Video Games*. New York, USA.