

BI-Weekly Report - HoloLens project

Client: Microsoft HoloLens Gaming (Group 11)

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Report Number: 7

Introduction:

Team 11 is working on the Microsoft HoloLens with the objective of delivering a Game or API highlighting the capabilities of what the HoloLens can do. The idea being that the API can be used as a building block for other applications that will be designed in the future of this product.

Discussed tasks and challenges:

After our meeting with Graham Tyler, we decided to pursue a game which highlights the features we have been working on from the previous term. It was suggested to develop a game and concurrently create a blog about the challenges and paths taken while developing the game for the HoloLens. The goal is to assist developers in the future on what to expect with developing application for this product. The game we make was decided to be a logical puzzle-type game, where the player has to guide an object (probably a ball) to the goal using various objects, like springs, fans, and so on. We hope to utilize marker trackers to place these objects and try various other features like spatial mapping and spatial understanding for enhancing the user experience, if not directly impacting the gameplay.

Plan of action: The plan is to continue working on the game and set up a blogging website where we log our progress so far, and in the future. The chess game is also hopefully nearing completion, and should be finished next week or the week after that at the latest. After that, we can all move onto developing the same project, splitting it into parallelable chunks. Experimenting with gameplay and having a tangible product should allow us to iterate over design ideas faster and we can always introduce functionality we feel we need later, as what we have currently should be sufficient to create the initial idea for the game that we had. We can also get in touch with Graham Tyler again, to showcase our progress and ascertain our direction.

Individual Bi-Weekly feedback

Mehul Modha: This week with the help of Miron Zelina, I was able to integrate gaze and gesture feature to the Chess game and has been tested on the HoloLens. The next stage is to add an assisted AI to help user play and learn what moves are best. This is in consideration as I will now begin to work on the main project. This involves a puzzle game where the ball has to reach checkpoints with obstacles in the way. This game will involve unity and marker tracking to create game object to assist the players.

Tilman Schmidt: Over the last two weeks I have extended the marker tracking plugin code to properly position unity objects according to the real-world markers found on the camera image. I also created a version of the plugin that runs on the HoloLens, and I am now in the process of calibrating the parameters in the code to match the properties of the HoloLens camera. Once this is done, holograms will be placed over real world markers correctly. I also started on the game we are going to develop over the coming weeks. I set up the Unity project as well as the overall structure of the physics-enabled ball and the in-game goal area.

Miron Zelina: I experimented with the Spatial Understanding features of the HoloLens, and was able to execute simple queries about the space surrounding the user, which we should be able to utilize later, but seeing as it is difficult to test now and of lower priority to the user, I hope to move onto developing the game mechanics for the next two weeks. Depending on how this goes, I will implement the Spatial Understanding into the main game and then still remain on that development path.