BI-WEEKLY REPORT

TEAM 29: CESAR FERRADAS VEGA, DIANA IONESCU, THOMAS ESPACH

PROGRESS OVERVIEW

Successes/Progress:

- Started developing separate components of the planned application.
- Pushed our branches to GitHub for later merging.
- Built 3D models in Blender.

Problems:

- The technical challenge of mapping different 2D textures onto the same 3D models so that they appear natural.

SUMMARY OF MEETINGS

Meeting 1: Skype with client (30/01/2017)

Presented our new idea regarding a recommendation engine to Irina and Robin. They thought this idea did not justify the use of the HoloLens so Robin recommended the idea of pulling YNAP products from their website and converting them to 3D for a more holistic view in the HoloLens. We agreed on this idea as final. We told them we would update our website accordingly.

Meeting 2: Lab (31/01/2017)

Brainstormed how the solution to the system proposed would work. Identified main areas of development: 3D models, pulling YNAP images using APIs to the HoloLens, and the navigation of products. Each of us was assigned a subset of the system to work on.

Meeting 3: Lab (07/02/2017)

Went over the progress of each individual team mate. Were very pleased with what everyone had achieved. Diana had some problems with Blender because she had to learn the technology but had made some progress nonetheless. We committed our progress to Github in different branches to begin looking into merging. Finally, we established what each of us would do over the next two weeks.

TASKS COMPLETED

In the past two weeks, we have:
- Begun building separate classes for our final product in OOP, using the singleton design pattern
  - ClothingItem.cs - represents an item of clothing, contains property for its PID and has methods for loading its texture to a model and getting products related to it.
  - RecommendedProductList.cs - represents the user's recommended products, has a property for the list of PIDs and has methods for processing JSON and getting related products given a source PID.

- ○ MeshController.cs - a controller for converting models to meshes for dynamically adjusting size and shape of models depending on images.
- Created template 3D models for generic items such as tops and bottoms, will be used for masking textures over them.

The project is getting back on schedule. Our supervisor, client and teaching assistant are all happy with the progress made.

PROBLEMS TO RESOLVE

We are mostly on track and have not experienced problems in the past two weeks. However, we know it will be a challenge to use the same 3D models to map 2D images onto because this might not always look natural since some items of clothing have different contours.

PLAN OF ACTION

In the following two weeks we will:

- Aim to have a prototype to test on the HoloLens, in production environment. Considerable challenges lie in ahead in testing on the HoloLens
- Begin Unit Testing our separate components and methods on expected outputs
- Build a second iteration prototype capable of pulling images from the YNAP API based on a *'user file'* and showing them in 2D, with navigation between items.
- Consider building a prototype using a custom written Shader in Unity to map the texture (of a clothing item) onto a *transparent* model only in places where the texture isn't transparent.

INDEPENDENT WORK

Cesar

Coded the ClothingItem.cs and RecommendedProductList.cs files. This proved to be successful in that I could map 2D images into a 3D object, and I could also generate an array of PIDs from the APIs provided that can be used to change clothing items for similar ones. Also began working on navigation between products.

Diana

Followed the "Blender Essential Training" on Lynda and developed two basic 3D models for pants and long sleeve blouses on which the image of the clothes will be mapped. Started to follow another two tutorials regarding textures and cloth simulation in order to improve the current models and to create new ones.

Thom

Wrote a class for converting .obj files into meshes, and displaying custom textures on the meshes. Wrote a method for adjusting the *triangles* and *normals* of a mesh, as well as one for masking out the white background of the images pulled from the YNAP API, then converting them into png format to preserve the alpha channel for using them as textures.