

BI-WEEKLY REPORT

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

PROGRESS OVERVIEW

Successes/Progress:

- Gaze-gesture recognition functionality implemented to browse between top and bottom items of clothing.
- Any product from the net-a-porter.com website is mapped onto a generic 3D model.
- Recommendation API (YMAL) integrated with our application.
- Shader was modified to accurately remove the white background on images.

Problems:

- Projecting of 2D images into custom 3D models did not have the expected behaviour and do not render correctly.

SUMMARY OF MEETINGS

Meeting 1: Lab Meeting (28/02/2017)

Added Diana's top and bottom 3D objects into Unity and tried to display the 2D textures over them. This did not render as it did with the cylinder objects, so work was done to solve this without success. Also showed our progress to our teaching assistant and told him in a week's time we would have something more solid to show.

Meeting 2: (05/03/2017)

Thom and Cesar met to work on getting the gaze and hand gestures to change the item of clothing that is being seen. Had some problems with the shader rendering correctly in Unity but in the HoloLens emulator, it displayed as pink. Successfully accomplished gesture and gaze recognition: when user gazes at an item and taps on it, the next recommended one is displayed.

Meeting 4: Lab Meeting (07/03/2017)

Met before the lab to try our code on the HoloLens. Faced a multitude of problems building our application for the HoloLens, despite the application running perfectly in the emulator. Spent 2 hours reinstalling Visual Studio and debugging HoloLens device specific problems. Showed our app to Yun Fu and our Teaching Assistant and they are happy with the progress.

Meeting 5: Supervisor (08/03/2017)

The three YNAP teams met with Dr Harry Strange. Reported on our progress and mentioned the difficulties we were having with projecting 2D images into our custom models. He mentioned to look into creating a depth map on a single image instead of projecting to a 3D image. He also suggested to focus on the development of the rest of the recommendation engine to meet more requirements rather than focusing on the 3D aspect since this is a Proof of Concept.

TASKS COMPLETED

- We are able to map a set of clothing items onto basic models based on an input file of product IDs.
- Correctly implemented the YNAP API that returns a list of similar products into our model so that only similar products are shown.
- Implement the functionality that allows users to change the items of clothing they are looking at using a combination of gaze and gestures.
- The shader now works well. Images have their white background removed and this even works on white clothing without damaging the actual image. Comparison below (note the pictures are on the HoloLens simulator so everything that is black will be transparent in the HoloLens):



PROBLEMS TO RESOLVE

A potential delay is that the models we had designed are proving to be very difficult to use for mapping the .jpeg textures on. We may have to display the images on more primitive models, giving the image a 3D look and feel as opposed to real 3D models with textures.

PLAN OF ACTION

In the following two weeks we will:

- Complete the initial minimum viable product:
 - Add “like outfit” functionality to update the user file with preferences.
 - Add “view liked outfits” functionality to see all the outfits (tops and bottoms) that the user can see.
- Look into resizing the sizes of the 3D models behind the 2D images so that they match the same size as the image so that they are easily replaceable with proper and more complex 3D models in the future.

INDEPENDENT WORK**Cesar**

Implemented the recommended product list functionality and worked on adding the gaze-gesture recognition (with Thom) to make the tops and bottoms change from one to the next product in a set of recommendations.

Diana

Worked on improving the 3D models in Blender to fix the issues with floating “bits” and holes in the mesh, and eliminate all vertices from the model. Started research on how to implement the “like” button for outfits.

Thom

Helped develop the gaze and gesture capabilities of the application, worked on writing a HoloLens compatible shader as the original transparency shader I wrote rendered pink on the HoloLens due to the complexity of its subshaders. After further development I was able to edit the shader to remove the white background with great success.