AUGMENTED FASHION

CSC 591, Spring 2019

Stage 4: Prototyping

Team:

NAME	Unity ID
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Client:

Prof. Pat Fitzgerald

Tools Used:

Unity Application:

We have made use of Unity 2018 to generate AR app. Unity uses Vuphoria Engine to generate different 3D shapes where different functional modules can be created with simple drag and drop. To customize the behaviour of the objects created by application, we have made use of C# scripts. Another reason to use Unity is, it allows to export iPad application directly. Hence, we decided to not make use of Xcode which can only be run on Mac.

Vuphoria Engine:

Vuforia is widely known as the industry leader in industrial augmented reality through its best-in-class computer vision technology, robust tracking capabilities and breadth of platform support. It is the most widely used software for handheld devices & digital eyewear available today. We have made use of Vuforia to use images of models to track and tackle AR animated objects.

All these tools were used for development on iOS and application was optimized for iPad Air 2 (2014) model.

Roles

We have used Proto.io to create our prototype. Using iterative fashion, we created the first prototype. After discussing with team mates, we modified the first prototype. We realigned some buttons and decided to keep videos for the static information of models. This was the second iteration of prototype. With the help of our client, Prof. Pat, we developed third iteration of prototype. Due to lack of videos, we removed the video information and came up with pictures of model hanging around the environment. There were some significant changes in the design of an application during the 3rd version.

We divided the work in teams of two to achieve this:

1. Researching AR technologies and making a working model:
   Members: Aayush Patial, Satish Gurav

2. Developing scanning functionality:
   Members: Sanya Kathuria, Unnati Agrawal

3. Developing AR animated features:
   Members: Prashant Nagdeve, Sahil Dorwat

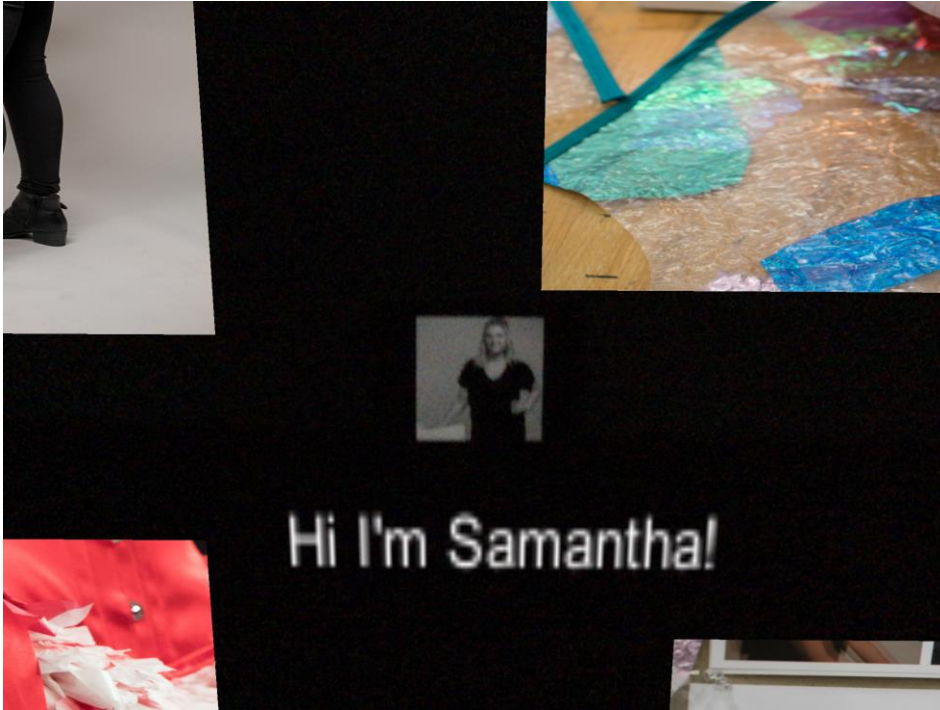**Prototype**

<u>Flow of our app:</u>

We have following flow in our app as shown in the prototyping.
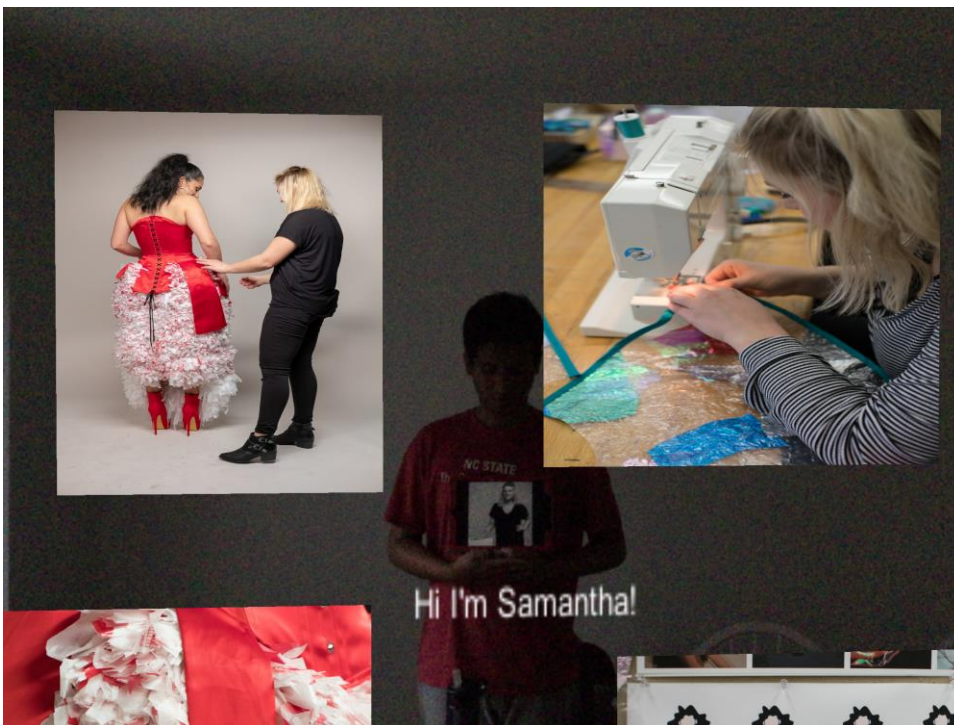
1. **Scan the model:**
   Screenshot:

The image of the designer is being scanned here by the ipad to retrieve the information regarding the design and behind the scenes of the work done by the model.
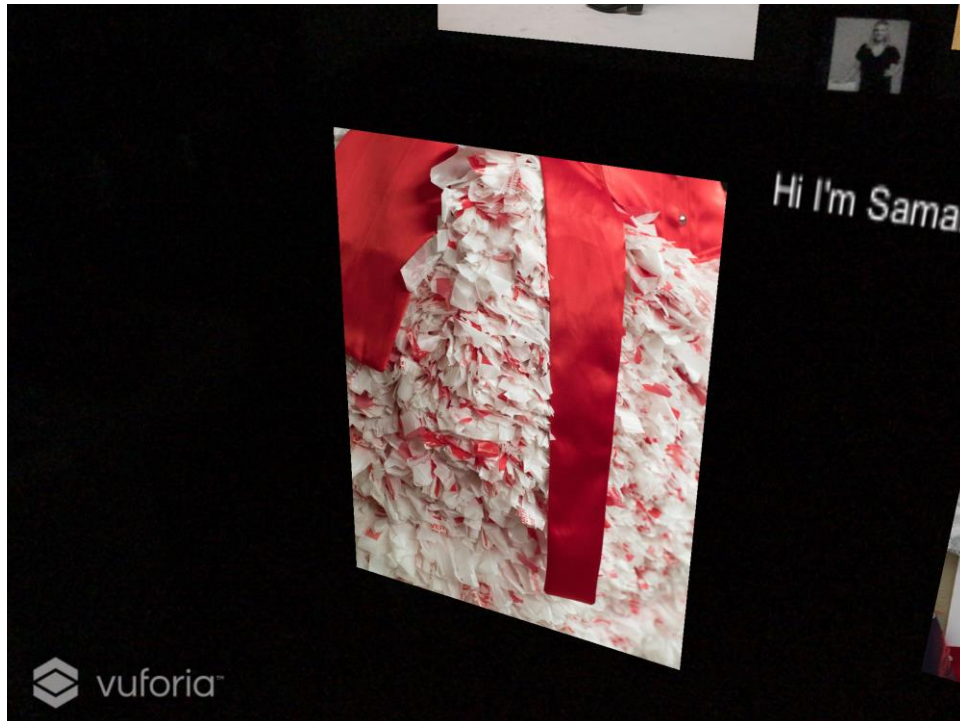
The retrieved information is then augmented on the screen relative to the image of the designer scanned.

2. Tracking images and showing info:

Information augmented on the reality, and user can see when he/she moves in any direction, it goes on even when the designer scan is off the screen. This continues till a new scan is brought in.
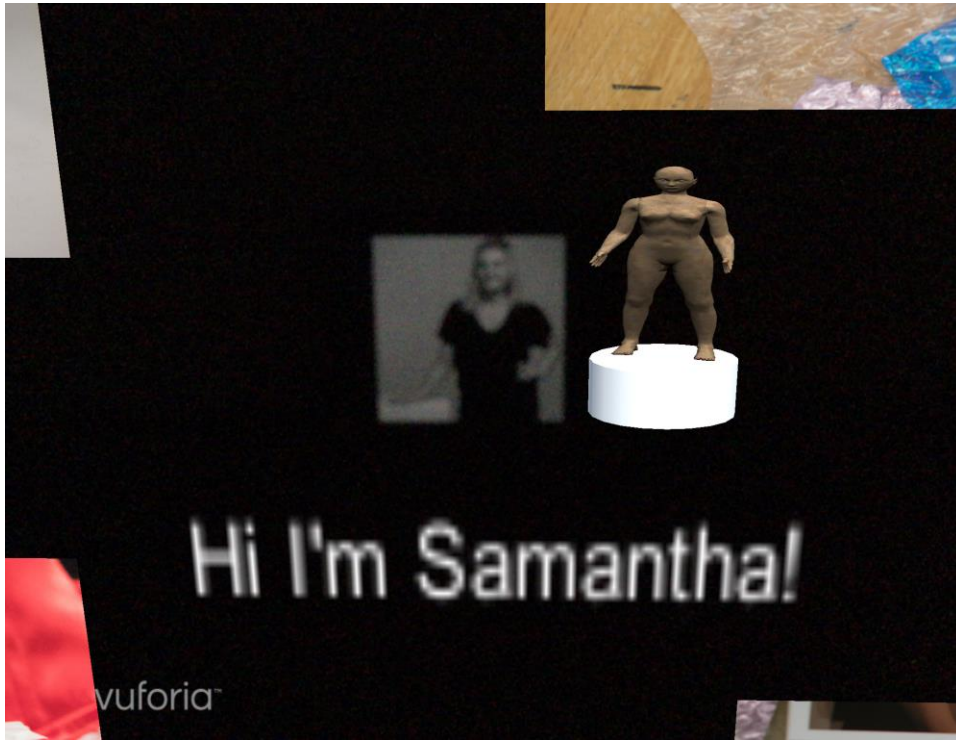
3. Showing AR enabled environment with 3D Models:

The 3D mannequin displaying the design can be shown besides the designer to give a better understanding of the design.

Trial

Our application works similar to the prototype. Workflow of our application is very simple and easy to use. Once the user starts the application, AR camera will start and it will detect model images showed on iPad in front of AR cam. Once image is detected, users will be able to see information about the designer and different items. User moves the Ipad upwards and sees the images of model spread across the environment. When it tracks the same image again, it displays the static info of designers.

While developing this application, we faced certain challenges.
1. Scanning the image from longer distance: One of our major challenges was to scan the image of the model from little far distance. It turned out to be quite difficult to scan the images from a very long distance as we found that iPad that we were provided with was not able to focus on the image.

2. Images with high contrast: AR camera detects the images with high contrast and hence it is really important to find desired images for better tracking.
3. Familiarity with Unity and Vuphoria : This is our first time working with AR technology and hence we had to start from scratch. As we were working with the above mentioned tools for the first time, our learning curve was greater. However, it was really a good experience for us and we learned quite a few things.

References

- https://unity3d.com/learn/tutorials/s/scripting
- https://unity3d.com/learn/tutorials/s/interactive-tutorials
- https://library.vuforia.com/articles/Training/getting-started-with-vuforia-in-unity.html
- https://www.youtube.com/watch?v=ma-qIQ4p3Jg