AR based wrist watch(AR)

Mentor: cyberlabs(hardware and xr division)

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Personal information:

- **Name: Bantu krutha satya vardhan naidu**
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- **Year of study:2021-2026**
- **Branch: mathematics and computing**

synopsis of project:

- **DESCRIPTION:** one of the key questions when buying a watch online is, “how will it look on my wrist?”. Currently, online stores can give you lots of size and colour data, but there is no substitute for seeing the watch on your wrist. As technology has changed and keeps changing buyers’ behaviour will keep changing. Buyers now communicate, choose recognize the items, and purchase in a whole different way. The era of flat-screen e-commerce is over. Immersive technologies like augmented reality are just beginning to impact the highly competitive world of online shopping, and It has already given birth to ideas such as virtual trying on.

ABSTRACT: Whenever we visit a showroom to buy a watch, we are unable to try all colour variants of watches due to unavailability and also if a watch is tried by too many customers it looses its shine and finishing. We tried to overcome this problem by our augmented reality apps. This augmented reality app lets customer see how a particular watch model looks on their hand without physically trying the watch.It will not only prevent degradation of polish of watches due to repeated wear by different customers at offline stores but also this new Augmented reality watch app will make online watch shopping take off.It will make it easier for customers to make decisions and purchase watches.

(a)

(b)

a) This figure shows how the app works
b) This figure shows the watch models

What is augmented reality(AR)?

Augmented reality is a technology that places the virtual things in the real environment around you in real time. Computer generated elements are augmented in the real world.It generates a view composition of real scenes viewed by the user and a virtual scene generated by computer that augments the scene with additional information. The main goal of AR is to create an environment in which the users cannot distinguish the difference between the real entities and the virtual entities.It is one of the biggest trends of today's technology.AR apps are software application which merge the digital visual(audio and other types also) content into the user's real world environment.

IMPLEMENTATION:

a) **Generation of a band:** In order to try the watch on hand customers have to wear a band .Accuracy of the band decides on maximum feature points.Feature points are unique elements that each image has.They are edges or curves that looks the same when we see from any direction.
b) **Designs of E-catalogue:** E-catalogue will contain 3D models of watch.So the users can choose a watch that they want to try from E-catalogue.

c) **Trying watch on hands:** We have projected a 3D object(i.e. watch) on a flat surface (i.e. band).Whenever an app encounters a band then it will project watch on it. We have to give next and previous button in our app. These buttons are used to select the watch model.

This above figure shows just an ideology of how it works.

TIMELINE:

Time frame	Tasks
Week-1	• Learning and practicing the required tools and frameworks for the project • Learn python with open cv library and unity hub.

Week-2	• Learning open cv and unity and Vuforia AR course. • Start implementing the learned languages to the project like Vuforia image tracking.
Week-3	• Selecting the target image and adding and setting watch models in unity(dial,band,glass,back,buckle,sewing) • Adding watch models to image target.
Week-4	• Adding occlusion. • Hoping that required features are added,now moving to some advanced tools or extra features of my own choice and submitting the project.

TECH STACK AND LIBRARIES USED:

Open CV(open source computer vision library),python

Unity hub.

PERSONAL DETAILS:

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Branch: Mathematics and computing

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Why should I be selected for this project?

XR ,as a field, has intrigued me since long. I have been actively pursuing the knowledge of AR,VR and XR. I believe that there is so much more for me to discover. I like taking up challenges, and this challenge seems like a steep mountain to me but that's what makes it fun and engaging. Also,I feel I will get to learn about several new technologies. I have really never worked on python in the past but when I start learning it seems interesting.

Do you have any commitments during the program?

I will devote as much time as I can give for the project during the program. On first two weeks of the program there is holidays for us so I would devote the major part of the day to this project(a minimum of 5-6 hours or may be more).And after two weeks we have classes up to 6PM on Monday to Friday.So I would devote a minimum of three hours for this project after the classes. On Saturdays and Sundays I would devote the major part of the day to this project.

POST WoC PLANS:

After the recruitment process of cyberlabs is over, and if I get selected ,I will enthusiastically work with my respected seniors and fellow batchmates in the hardware and XR division of cyberlabs and learn more about XR and do various other interesting projects related to it I really want to know in depth about XR .

If ,however I do not get selected ,I will try to do independent projects on XR on my own and learn through various online platforms and ask my seniors or my fellow batchmates if I get stuck at some point during the learning process.

CONTACT DETAILS:

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