Intro to Mixed Reality

Rakhi sharma (@atbrakhi)

I am..

- Software UI Engineer.
- Alumni of Outreachy and RGSoC internship program.
- Ex Intern at Mozilla.
- Supervisor at RGSoC.

What we are going explore today?

- Mixed Reality
- Virtual reality
- Augmented reality
- Journey from WebVR to WebXR
- A- Frame

Virtual Reality

Virtual Reality completely immerse a user inside a synthetic environment. While immersed, the user cannot see the real world around him.

So it’s kind of Virtual world!

Augmented Reality

Augmented reality brings the magic of the digital world to reality. With it, we can mix our wildest dreams with our view of reality to create entirely new experiences.

The whole point of that ugly word, augmented, is that AR takes your view of the real world and adds digital information and/or data on top of it

AR is a field of computer research which deals with the combination of real-world and computer-generated data!

Characteristics for AR

- It combines real and virtual object in real environment.
- It is interactive in real-time.
- Aligns real and virtual object with each other

Mixed Reality

The key term for mixed reality, or MR, is **flexibility**.

Mixed reality lets the user see the real world (like AR) while also seeing believable, virtual objects (like VR). And then it anchors those virtual objects to a point in real space, making it possible to treat them as "real,"

With mixed reality, the illusion is harder to break

WebVR

WebVR is an open specification that makes it possible to experience VR in your browser. The goal is to make it easier for everyone to get into VR experiences, no matter what device you have.

You need two things to experience WebVR: a headset and a compatible browser.

Journey from WebVR to WebXR

WebVR is an experimental JavaScript API that provides support for virtual reality devices, such as the HTC Vive, Oculus Rift, Google Cardboard or OSVR in a web browser.

WebXR describes support for accessing virtual reality (VR) and augmented reality (AR) devices, including sensors and head-mounted displays, on the Web.

A-Frame

A-**Frame** is an open-source web framework for building **virtual reality** (**VR**) experiences.

Maintained by Mozilla and the WebVR community.

It is an entity component system framework for Three.js where developers can create 3D and WebVR scenes using HTML.

Now we are going to do some hands-on using A-frame. And for that I am going to take you all through A Frame school...

> https://aframe.io/aframe-school/#/4

Some Good resource to learn MR/VR/AR

- https://medium.com/arjs/augmented-reality-in-10-lines-of-html-4e193ea9fdbf
- https://aframe.io/aframe-school/#/

- https://public.etherpad-mozilla.org/p/MozBangaloreMR