VR/AR Workshop: JSFoo

Shivank

About me

Shivank:

- I am the global Co-Chair for WebVR Industry Committee at VRAR Association.
- Mozilla Contributor
- Standalone VR/AR developer and consultant.

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Discussion for the Day!

Intro to VR concepts

Introduction to Web VR

Why WebVR

Where webVR comes from?

How Aframe Comes into picture

Introduction to 3D models and Blocks

Intro to Aframe

Workshop #1: Creating Primitives

Workshop #2: Creating a Scene

Workshop #3 - #8: Creating image+video gallery, first animation, first planes, camera view

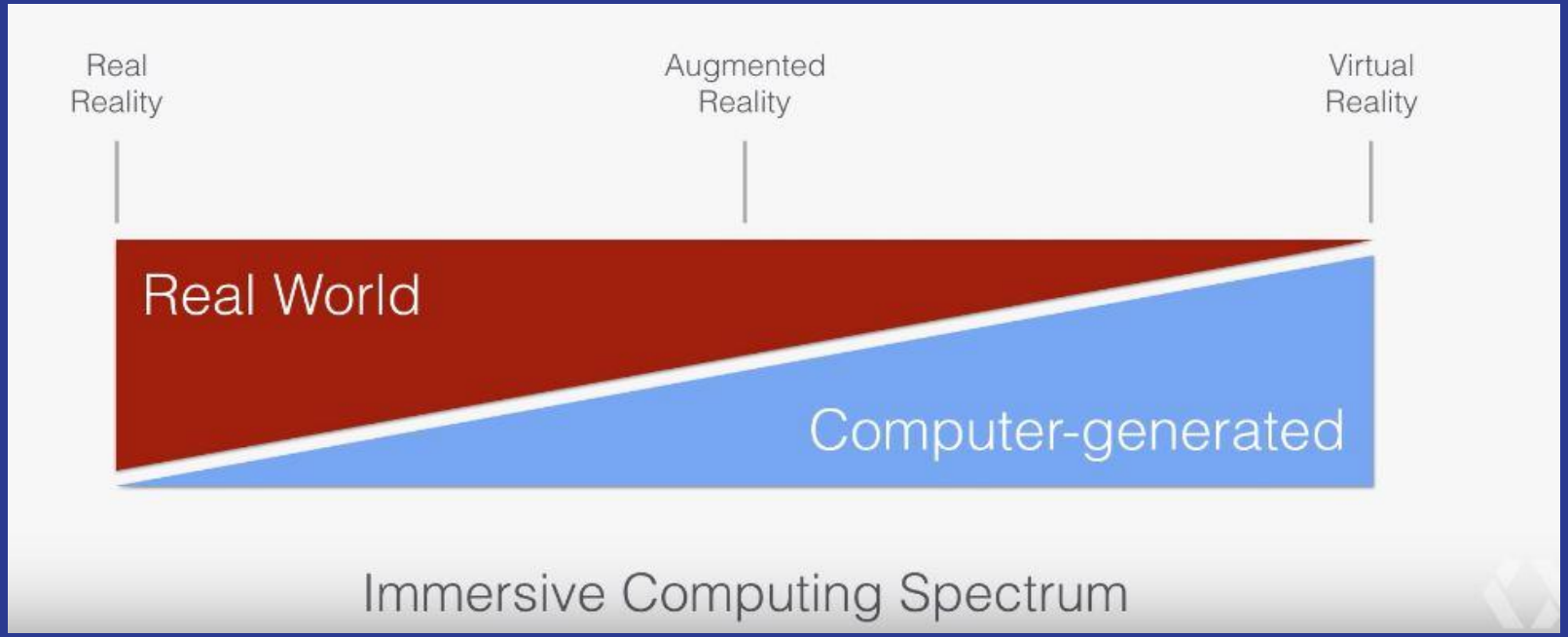
Debugging a Scene

Introduction Standalone VR, cinematic VR and storytelling

Workshop: Build AR

General tech discussion: ARcore, ARkit and other technologies

About Realities



Introduction to Virtual Reality

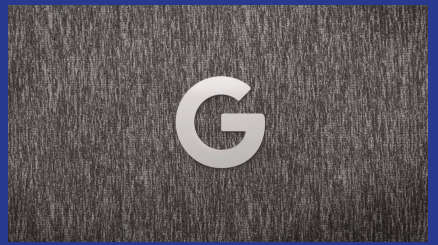
Virtual Reality

- Immersion into in another world
- Usually uses a headset and mobile device
- Does not interact with the real world
- Experiential Information

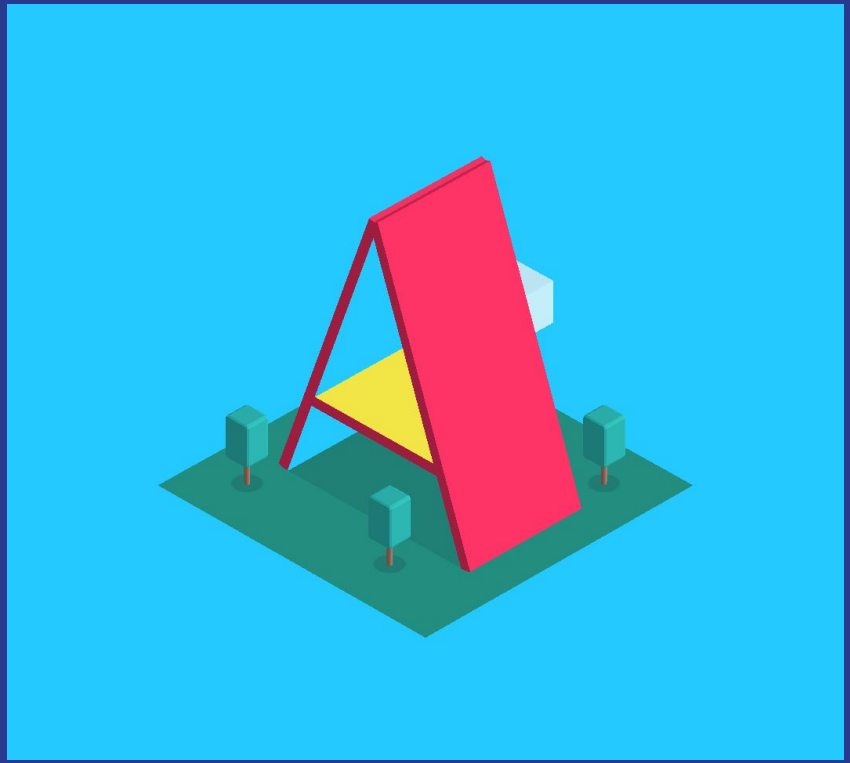
Augmented Reality

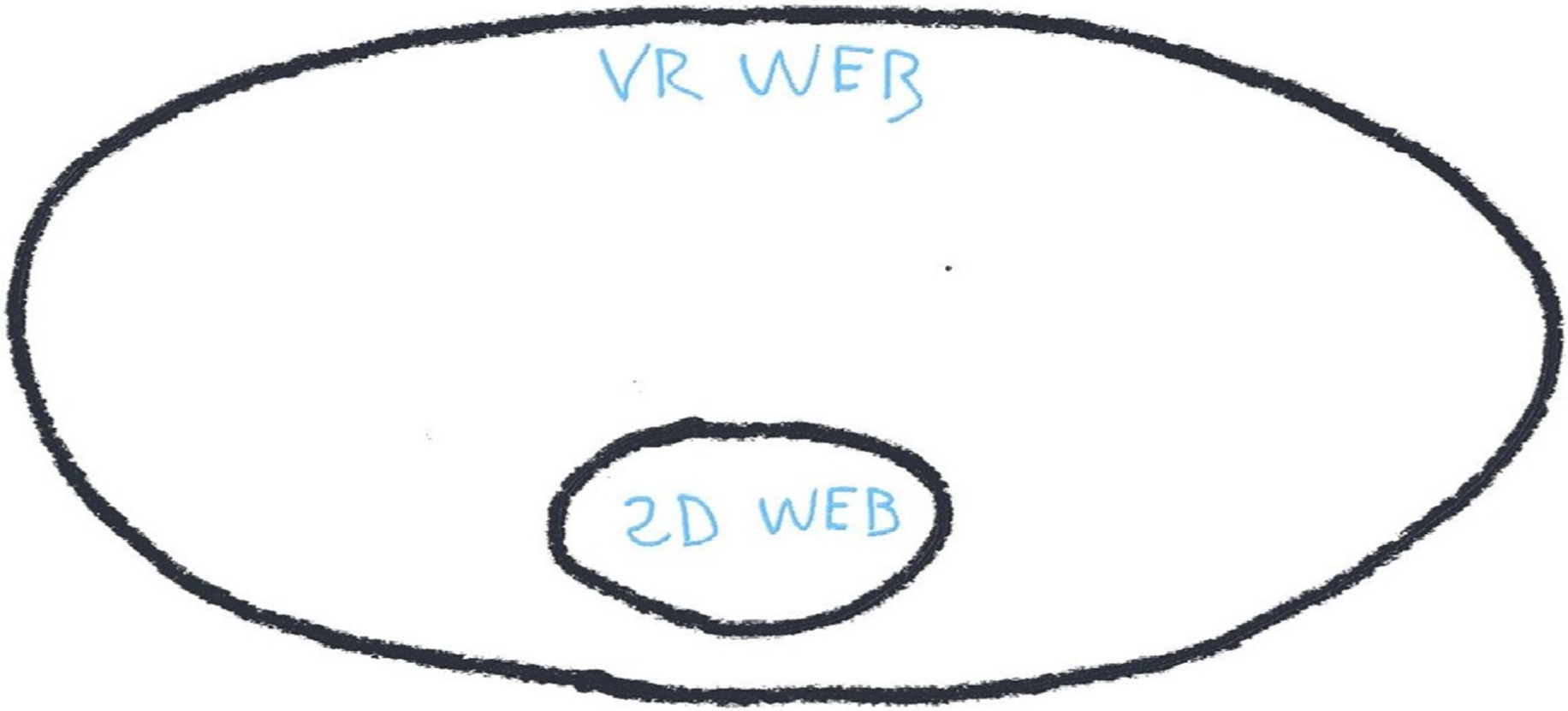
- Overlay of objects in world around you
- Use of a phone or viewing device
- Usually uses target image

Current VR systems



Introduction to WebVR




VR WEB
2D WEB

Import WebVR Polyfill

Set up Camera

Build UI for Entering VR

Geometry + Material + Add

Initialize scene

Too hard to create WebVR experiences.

Create render loop

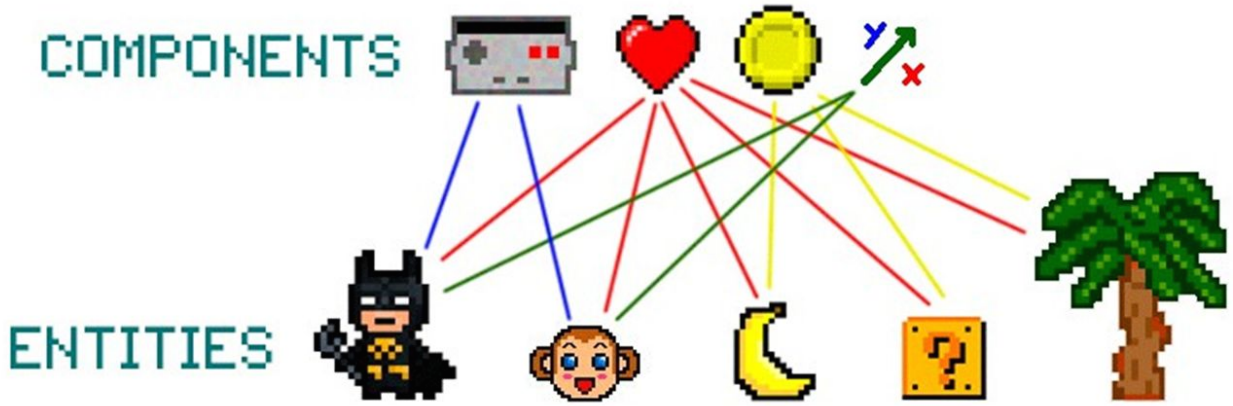
Listen to window resize

Search for VREffect

Instantiate renderer

Declare canvas

Add lighting



Entity-Component-System

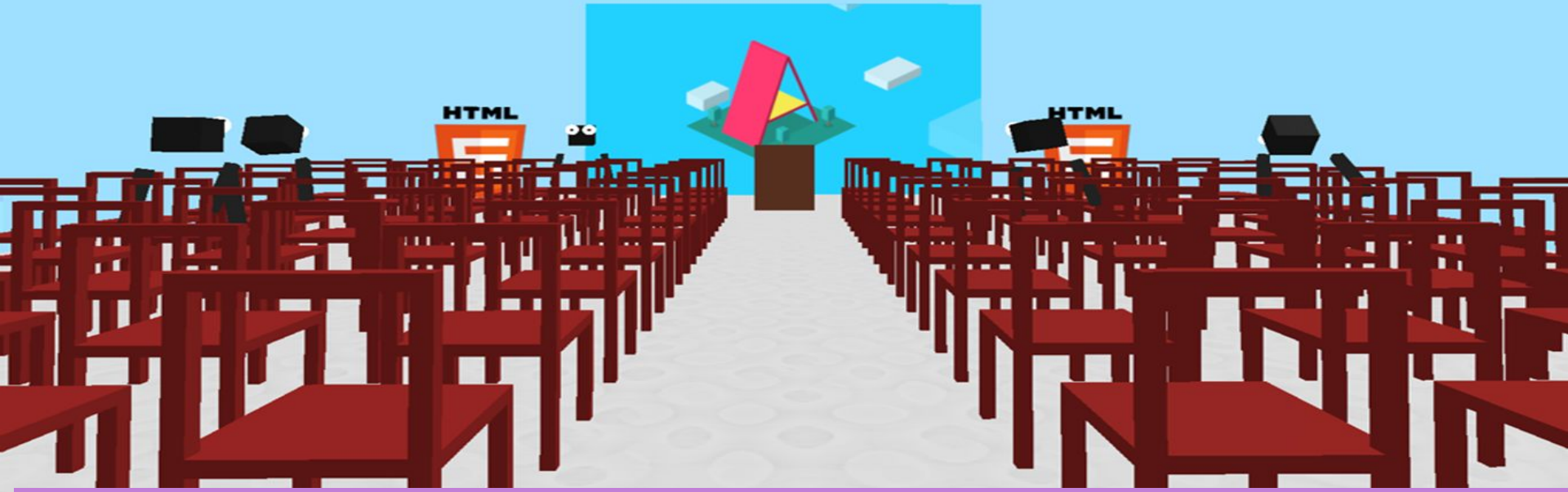
"A-Frame is like when MVC landed in traditional front-end work…[where] three.js is like jQuery."

Reduces boilerplate

Empowers web developers and designers

Declarative ECS framework for three.js

Multiuser



3D Models and Blocks

A-Frame provides components for loading glTF, OBJ, COLLADA. We recommend using glTF

Programs to create models include:

- Blender
- MagicaVoxel
- Autodesk Maya or Maya LT
- Maxon Cinema4D

Places to find 3D models include:

- Sketchfab
- Clara.io
- Archive3D
- Sketchup's 3D Warehouse
- TurboSquid

Standalone VR

The Real War: Unity vs Unreal?

Unity	Unreal Engine 4
Supports 21+ Platforms Including Mobile, Web, PC and Console	Supports mainly PC and Console Games
C#, UnityScript, Boo	C++
Great for 2D and 3D	Better powered for 3D games
No Profiler for free version	Profiler
Limited graphics	Next generation graphics.
$1500 Pro Version or $75/month	Free with 5% revenue share
Better option for novices	Only for pro's
Programmer AND Designer friendly	Designer friendly only
Detailed documentation	Lacklustre documentation
Multitude of community and official tutorials for developer support	Tutorials largely catering to designers rather than programmers
Free after a revenue turnover of <$100k	Free after a revenue turnover of <$50k
Perfect tool for building any sort of game	FPS built, so better suited for FPS based games only

Alternatives :)

Gaming platforms most worthy of mention here include but are not limited to:

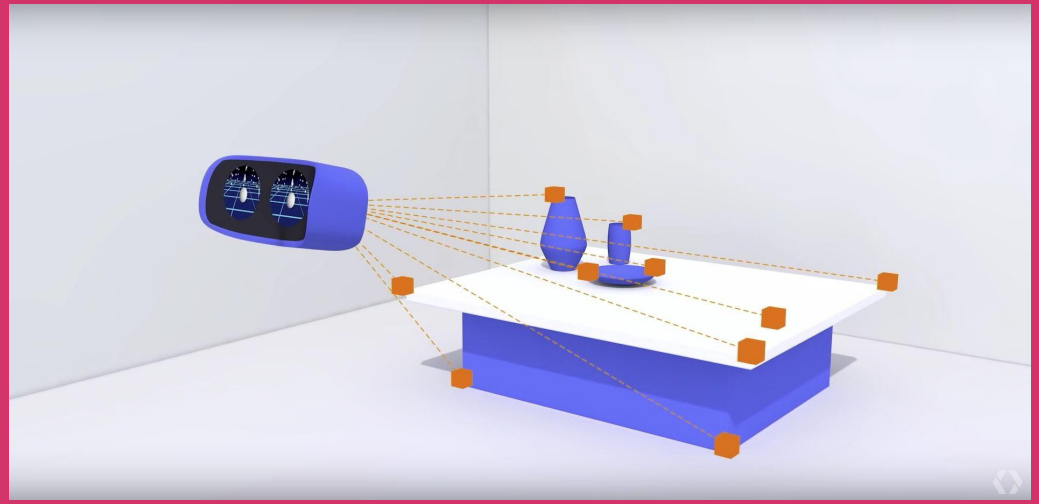
- Game Maker Studio
- Coscos2D
- Marmalade

These gaming platforms have been widely successful in the recent years.

HMD’s with Tango power like **WorldSense**

&

SLAM – Simultaneous Localization and Mapping



Standalone VR Stack

- C# or C++
- Unity or Unreal
- Interaction Designing
- Vector Physics
- Game Programming
- Android
- Shaders
- SDK’s are the game :P

Dive into Augmented Reality


ARCore
VS.
ARKit

Key Points: ARCore vs ARKit

In conclusion, both versions of AR technical innovations are neck-and-neck. While ARKit has distinct advantages in terms of hardware and tracking reliability, ARCore inches ahead with its mapping and reliable recovery. Apple's ARKit has a clear advantage in terms of already-installed devices in the market that this technology can be pushed to. Considering Google's dependence on various local markets and OEMs, the penetration of ARCore might not be as quick.

AR.js is here

Let’s Build webAR

VR is not just for developer

A- Painter : Art- A Painter

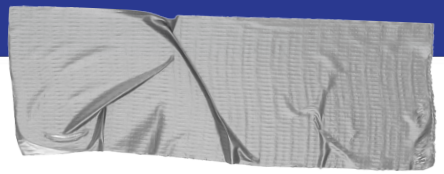
Journalism : Syria 360/ Fear of the Sky / Ivory Burn/ The Fight of Fallujah

Sandbox for Planners : City Builder

Data Visualisation : Adit / Alyssum / Google Brexit Experience

Gaming : A-Blast

Exploration: Journey to Mars/ Seeking Pluto’s Frigid Heart



Good luck!

We hope you'll use these tips to go out and deliver a memorable experience in VR/AR.

Ping me at!

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