



@diekus @samsunginternet



eat. sleep. VRowse. repeat



WebVR

Offspring of two worlds

Diego González, PhD (@diekus)



SAMSUNG
Internet





SAMSUNG
Internet



SAMSUNG Internet

In Israel



67.24%



20.68%



10.06%



2017: the year of CSS Grid

March 2017

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

October 2017

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

YOU GOTTA LOVE FRONTEND
October 30-31, Tel Aviv 2017

<https://www.chenhuiping.com/slides/yg1f-2017>

A photograph of a woman with short dark hair and glasses, wearing a dark blazer over a red top, standing behind a clear acrylic podium. She is speaking into a microphone. Behind her is a large projection screen displaying two calendar grids. The left grid shows March 2017 with days from Sunday to Saturday. The right grid shows October 2017 with days from Sunday to Saturday. Various icons are overlaid on specific dates: a browser icon on March 7, a globe icon on October 17, and a compass icon on October 27. A small purple book titled "YOU GOTTA LOVE FRONTEND" is propped up on the podium. The URL "https://www.chenhuiping.com/slides/yg1f-2017" is visible at the bottom of the projection screen.

100% the

sed

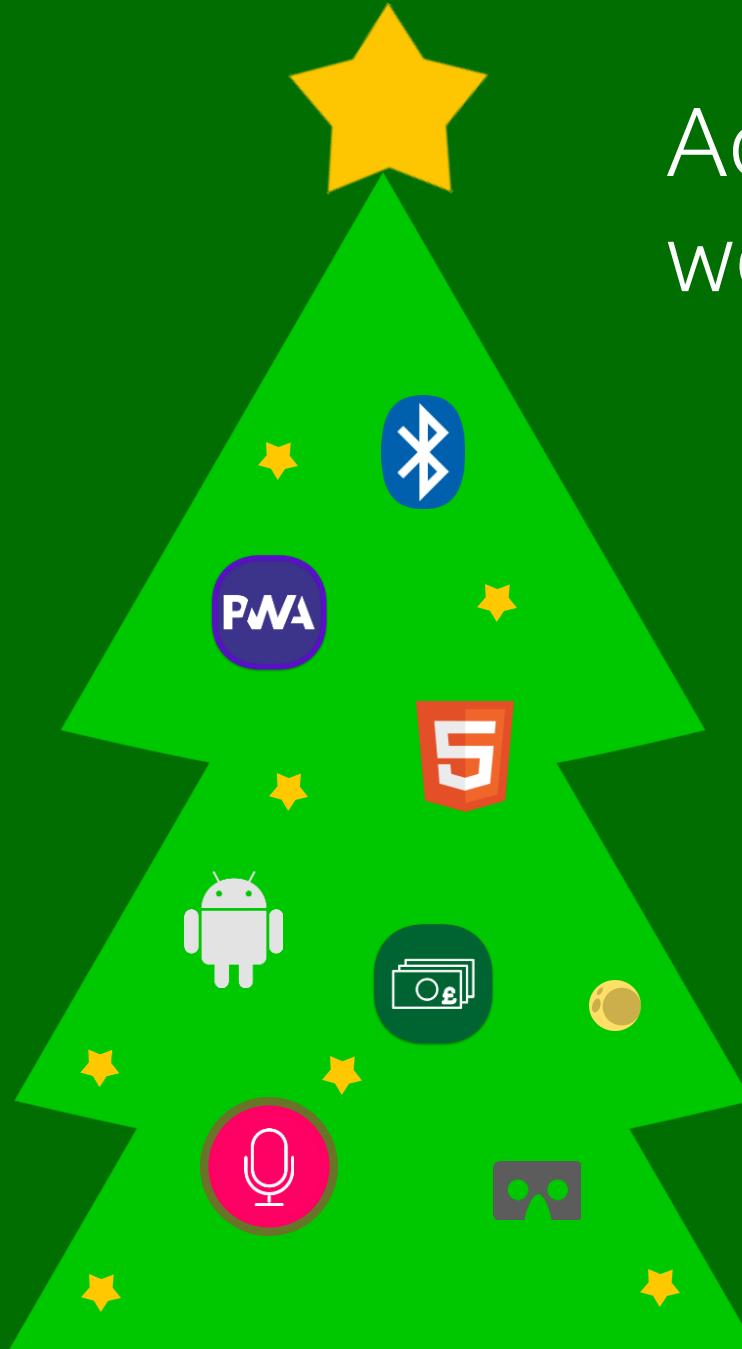
ser

unched!

Vitamin D and
the CSS Grid!



Evergreen browser



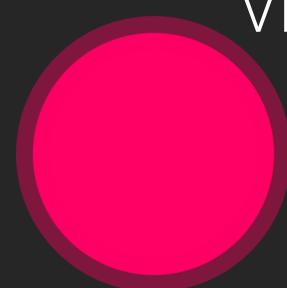
Access to latest web technologies

Progressive Web Apps
Web Speech API
Web Bluetooth
Web Payments
Gamepad API
Physical Web
CSS Grid
WebVR API

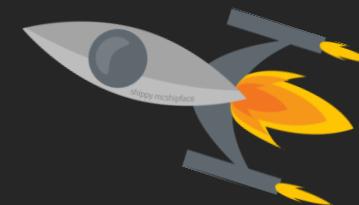
...



Web



VR



- Linkability
- Asks your permission
- Shared Context
- Privacy-Friendly
- User Choice
- Accessible
- Open



Cross-platform





Orientation

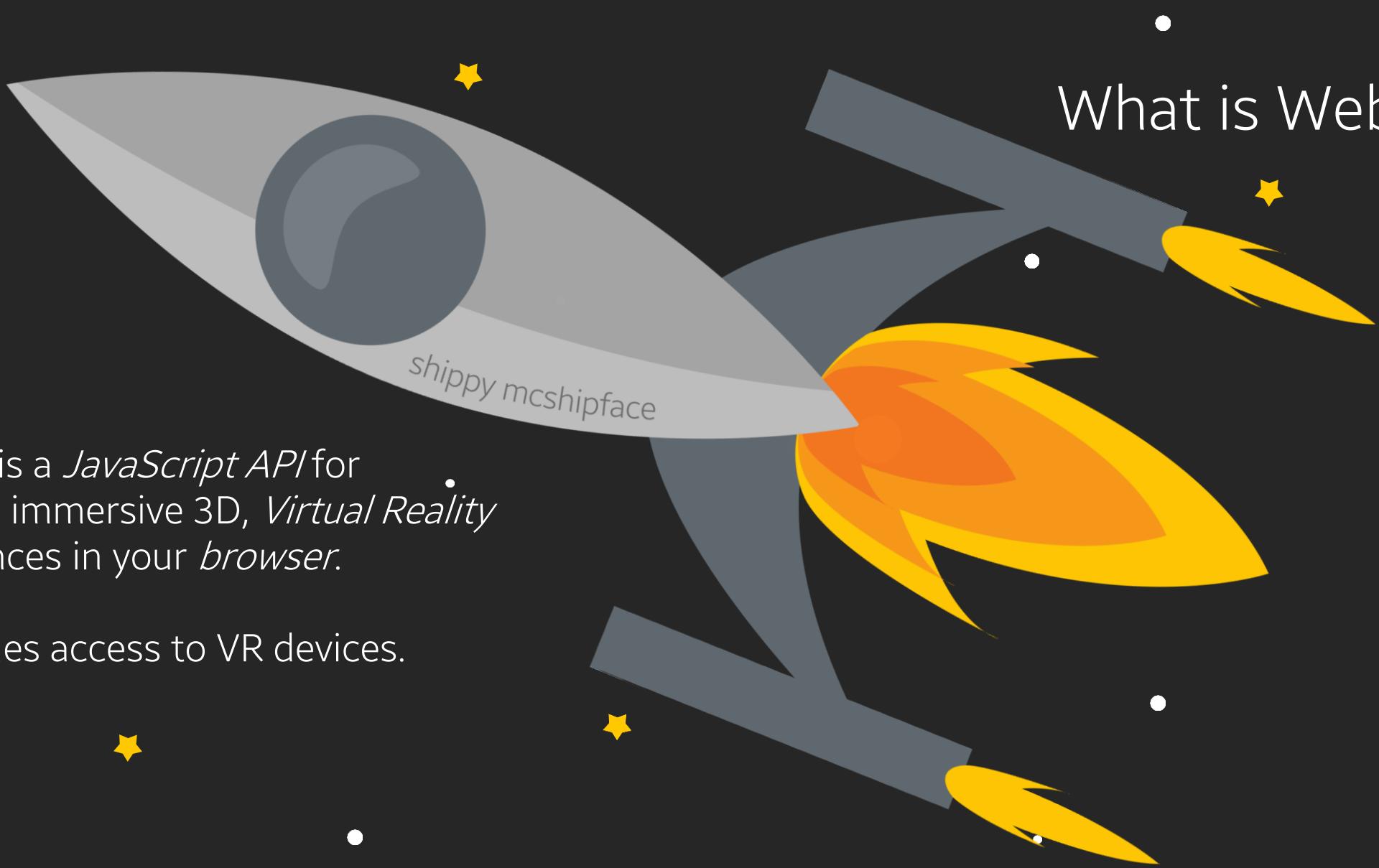
Position

Immersive

360° media

Different input
methods

Low latency



What is WebVR?

WebVR is a *JavaScript API* for creating immersive 3D, *Virtual Reality* experiences in your *browser*.

It provides access to VR devices.

browser support





hardware support

- Magic Window
- 3 DoF
- 6 DoF
- Controllers
- WebSpeech API*





Samsung Internet



Firefox



Chromium



Chrome



Oculus Browser



Edge



Servo



SAMSUNG Gear VR

✓

Google Cardboard

✓

✓

Daydream

✓

✓

oculus

✓

✓

VIVE

✓

✓

✓

HoloLens

✓

* ✓Compatible with WebVR

iOS? support



Josh Carpenter

@joshcarpenter

Following

Apple (yes Apple) joins the list of participants
in the W3C #WebVR Community Group:
w3.org/community/webv...

6:41 PM - 5 Jul 2017

55 Retweets 153 Likes



1



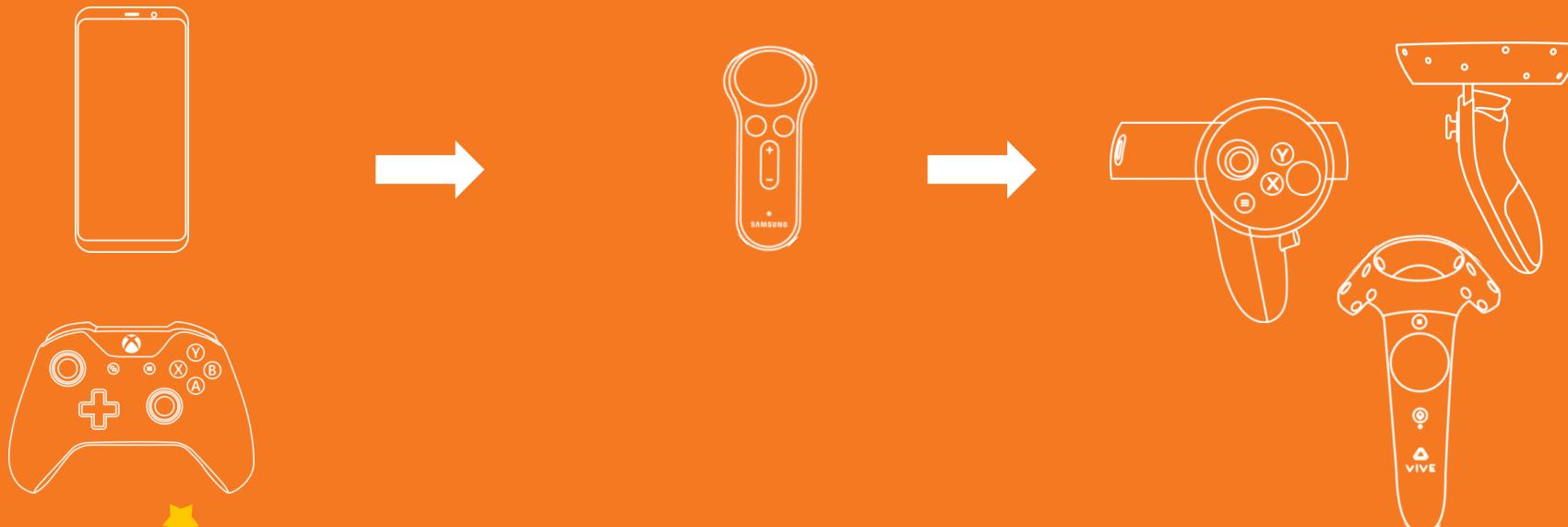
55

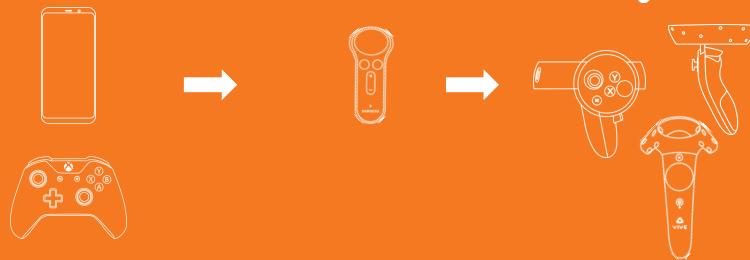


153



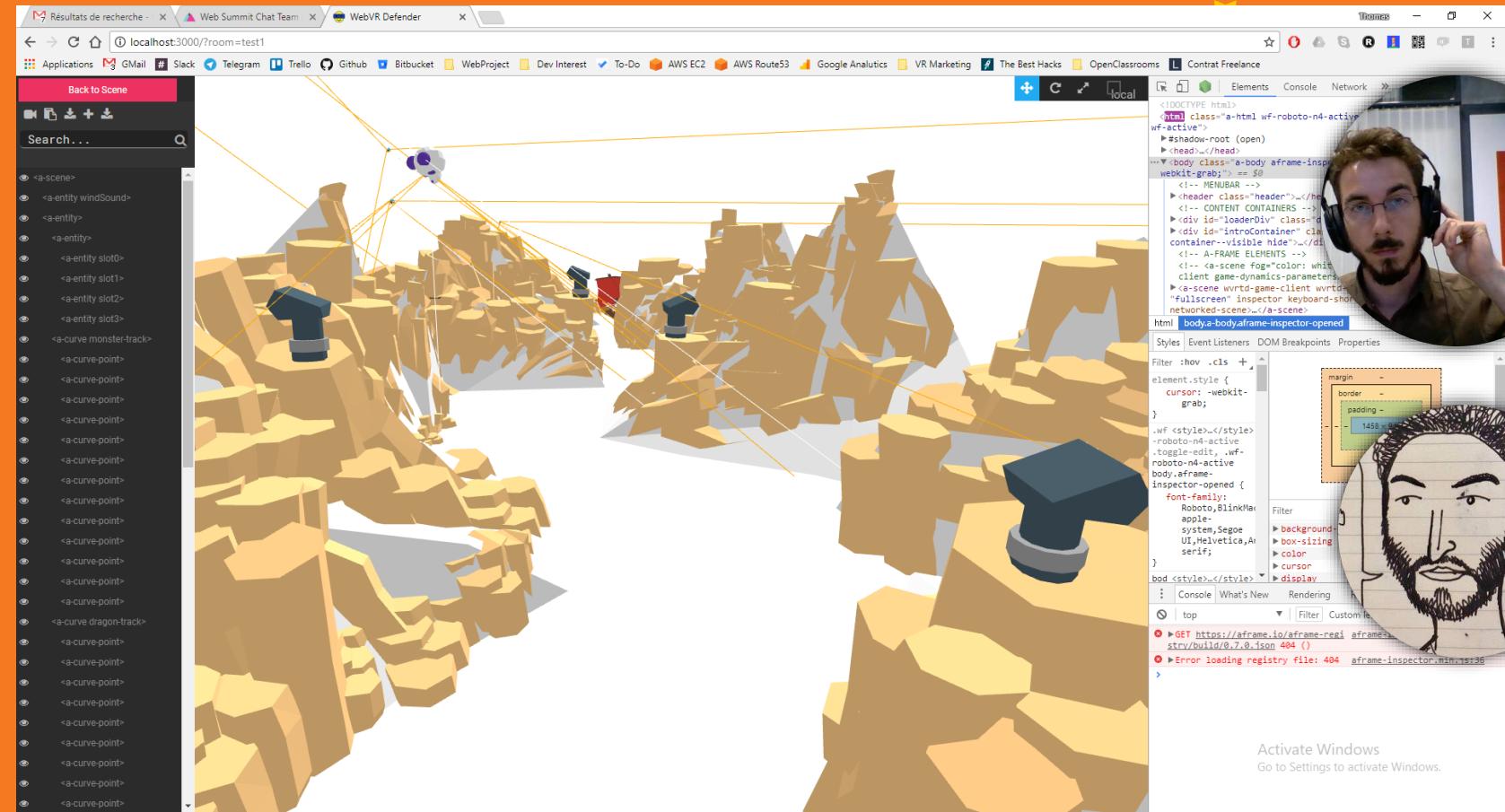
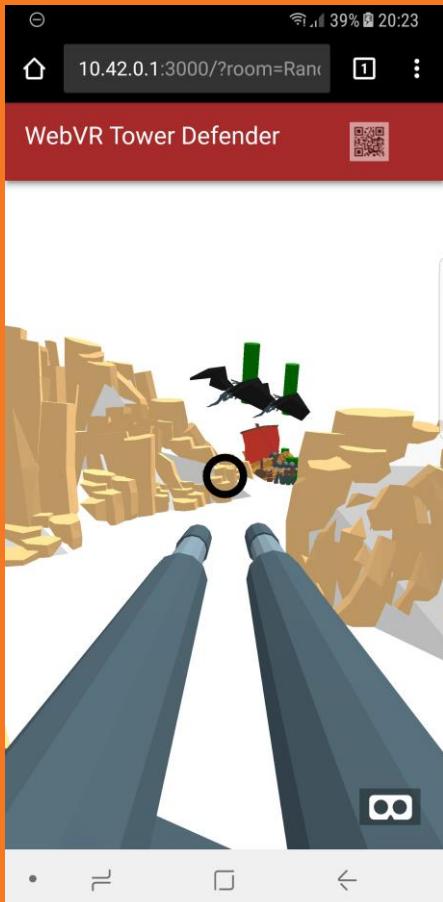
Progressive enhancement





★ Progressive enhancement

<https://webvr-defender.glitch.me>



Activate Windows
Go to Settings to activate Windows.



discoverability

reach

ubiquitous/immediate

social





love

isomis

ubiquitous/immaterial



discoverability

Reach

ubiquitous/immediate

social





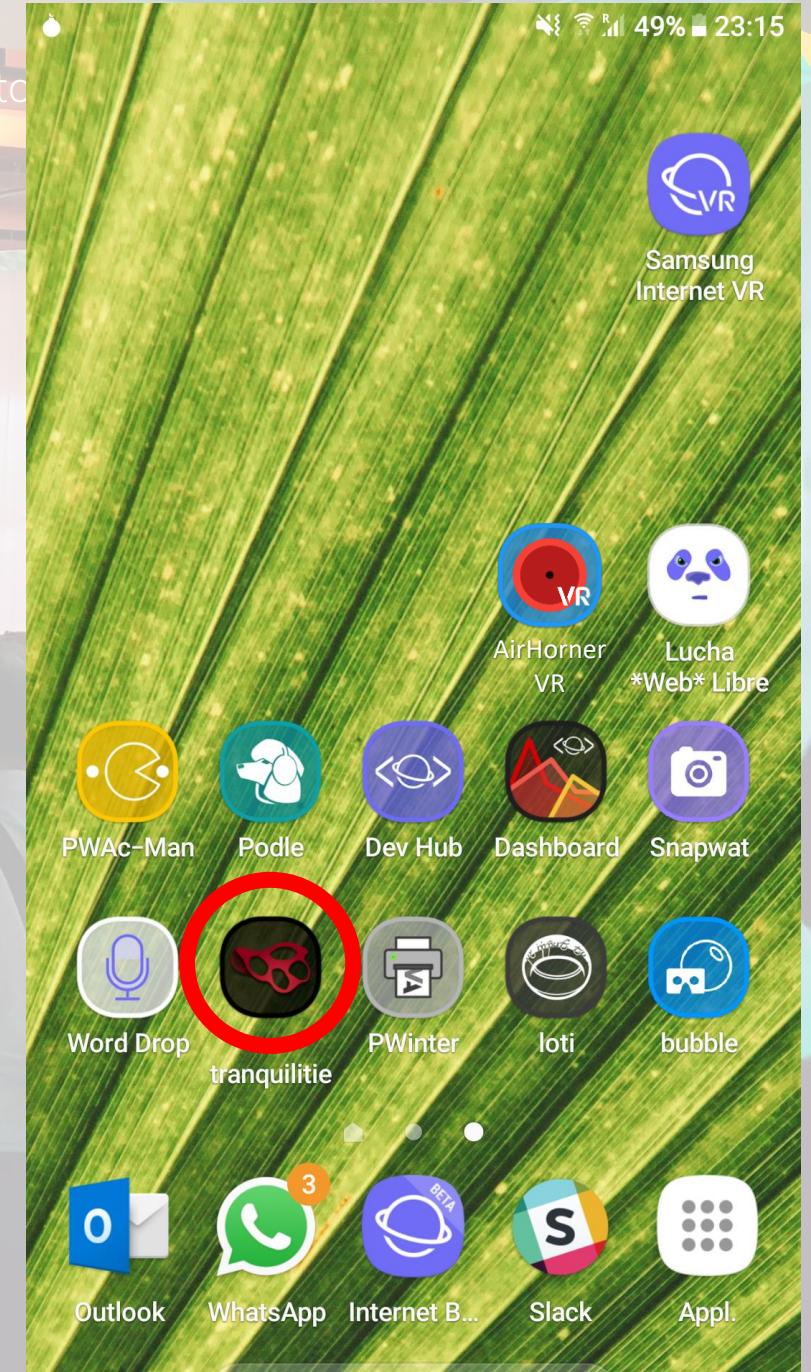
discoverability

ubiquito

PWA-ise it.

Progressive Web Apps

- Icon on homescreen
- Independent of network and connectivity.
- Frictionless experiences by design.
- Preload Assets (Audio, Video)





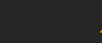
discoverability



reach



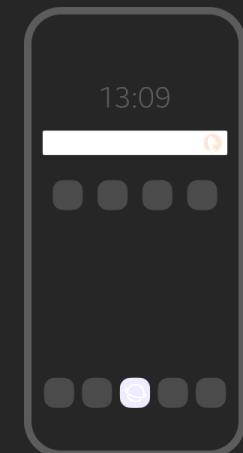
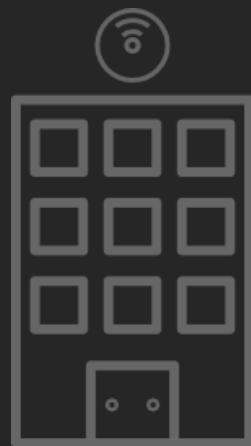
ubiquitous/immediate



social



From a physical object to the browser
to your home screen to your headset.





discoverability



AirHorner
VR

reliable
ubiquitous/immediate

PWA

social



<http://bit.ly/airhornvr>



discoverability



reach



ubiquitous/immediate



social



Widest delivery network in existence

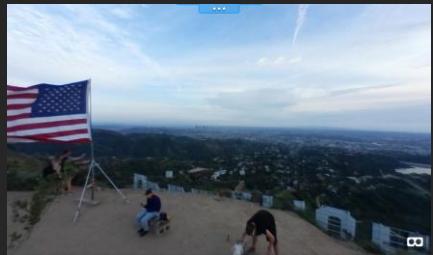


discoverability

reach

ubiquitous/immediate

social



bit.ly/hollywood-bubble



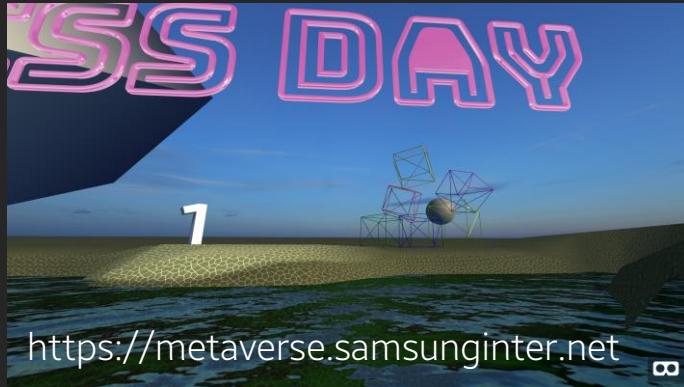
bit.ly/penca-beach

bit.ly/gardens-Singapore





discoverability



reach

ubiquitous/immediate

social



Networked
A-Frame



WebRTC

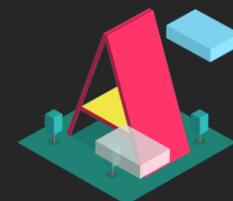
PEERJS



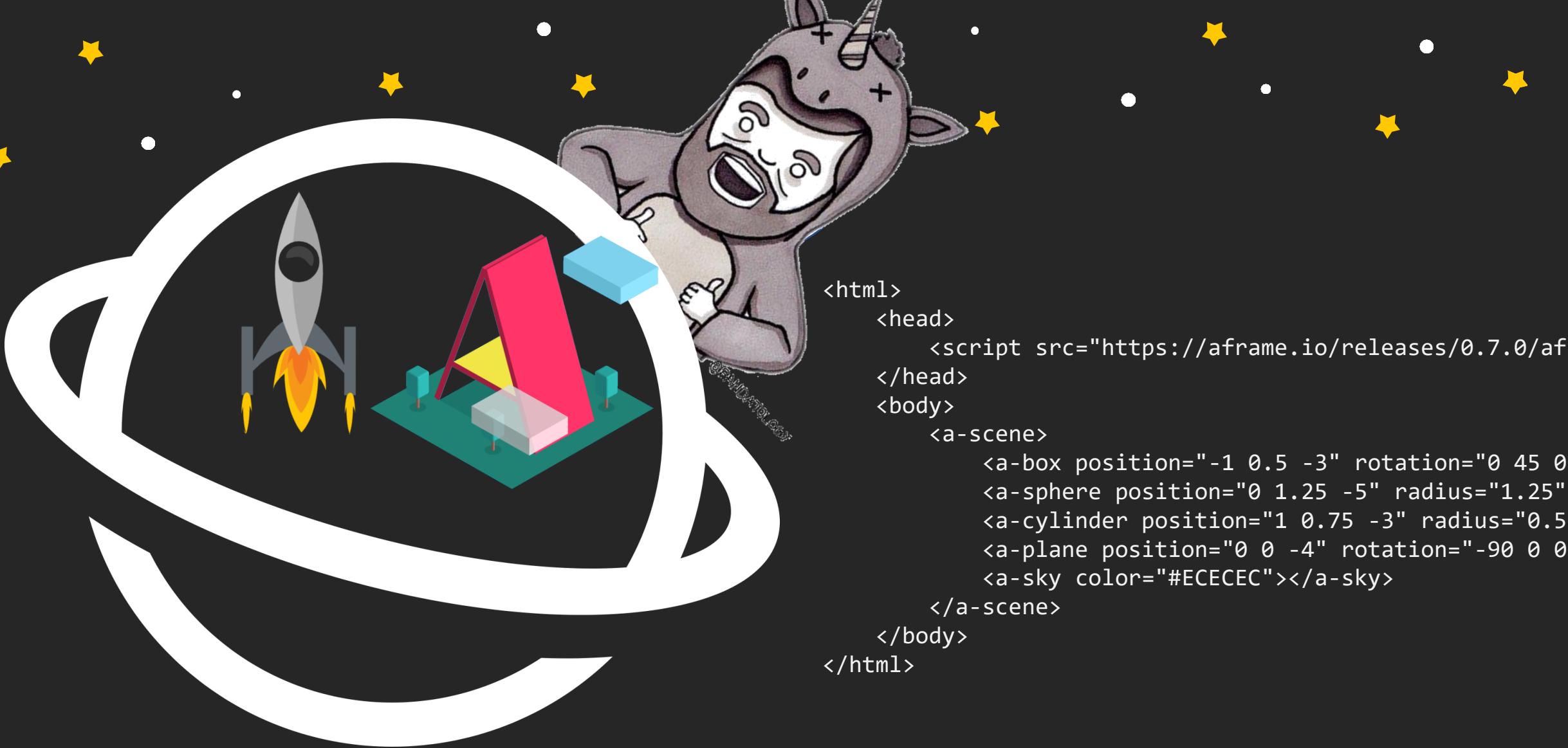


Accessible platform for creatives, developers and makers

three.js

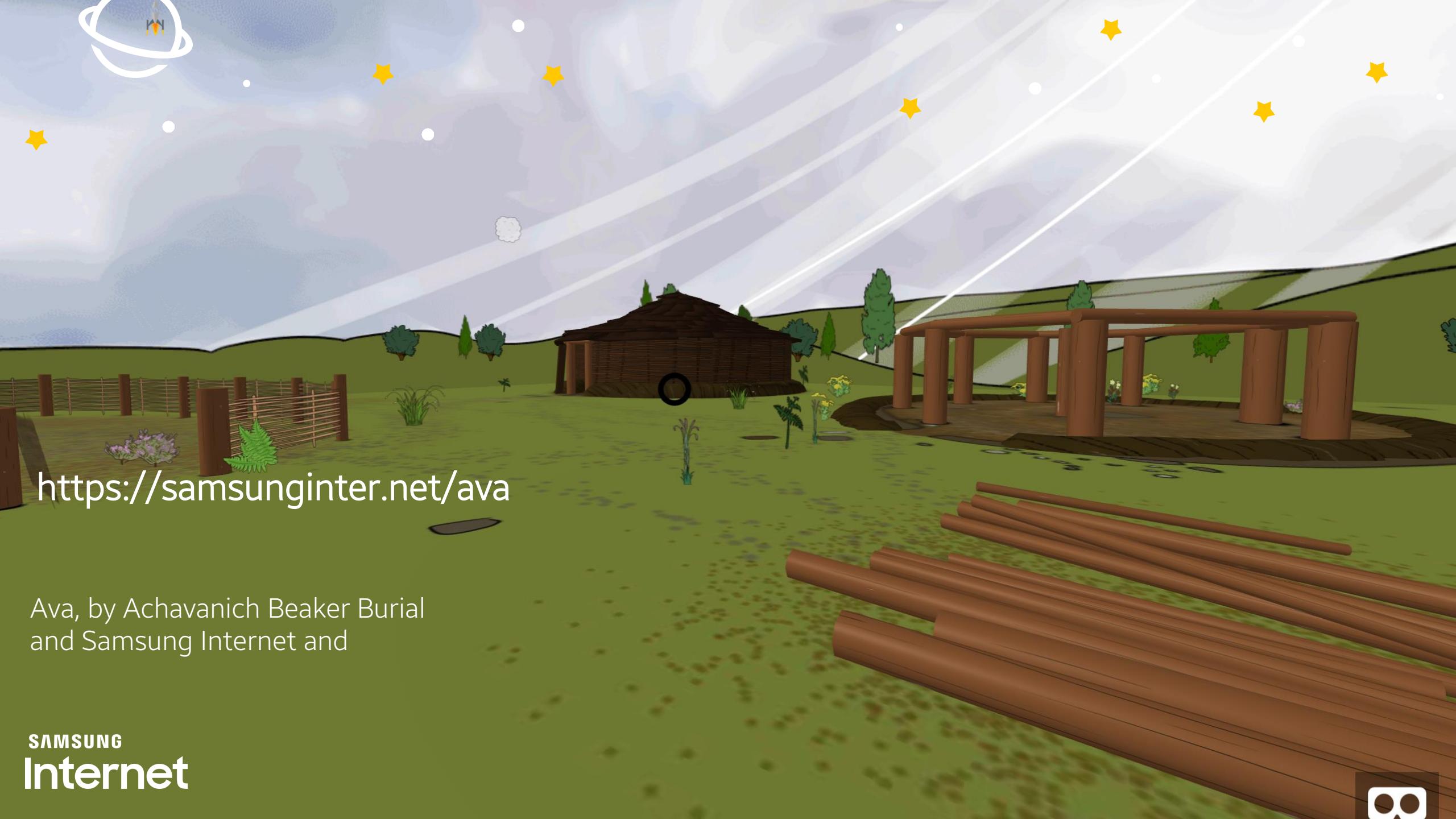


 React VR



```
<html>
  <head>
    <script src="https://aframe.io/releases/0.7.0/aframe.min.js"></script>
  </head>
  <body>
    <a-scene>
      <a-box position="-1 0.5 -3" rotation="0 45 0" color="#4CAF50"></a-box>
      <a-sphere position="0 1.25 -5" radius="1.25" color="#FF9800"></a-sphere>
      <a-cylinder position="1 0.75 -3" radius="0.5" height="1" color="#2196F3"></a-cylinder>
      <a-plane position="0 0 -4" rotation="-90 0 0" color="#FFC107"></a-plane>
      <a-sky color="#ECECEC"></a-sky>
    </a-scene>
  </body>
</html>
```

Accessible platform for creatives, developers and makers



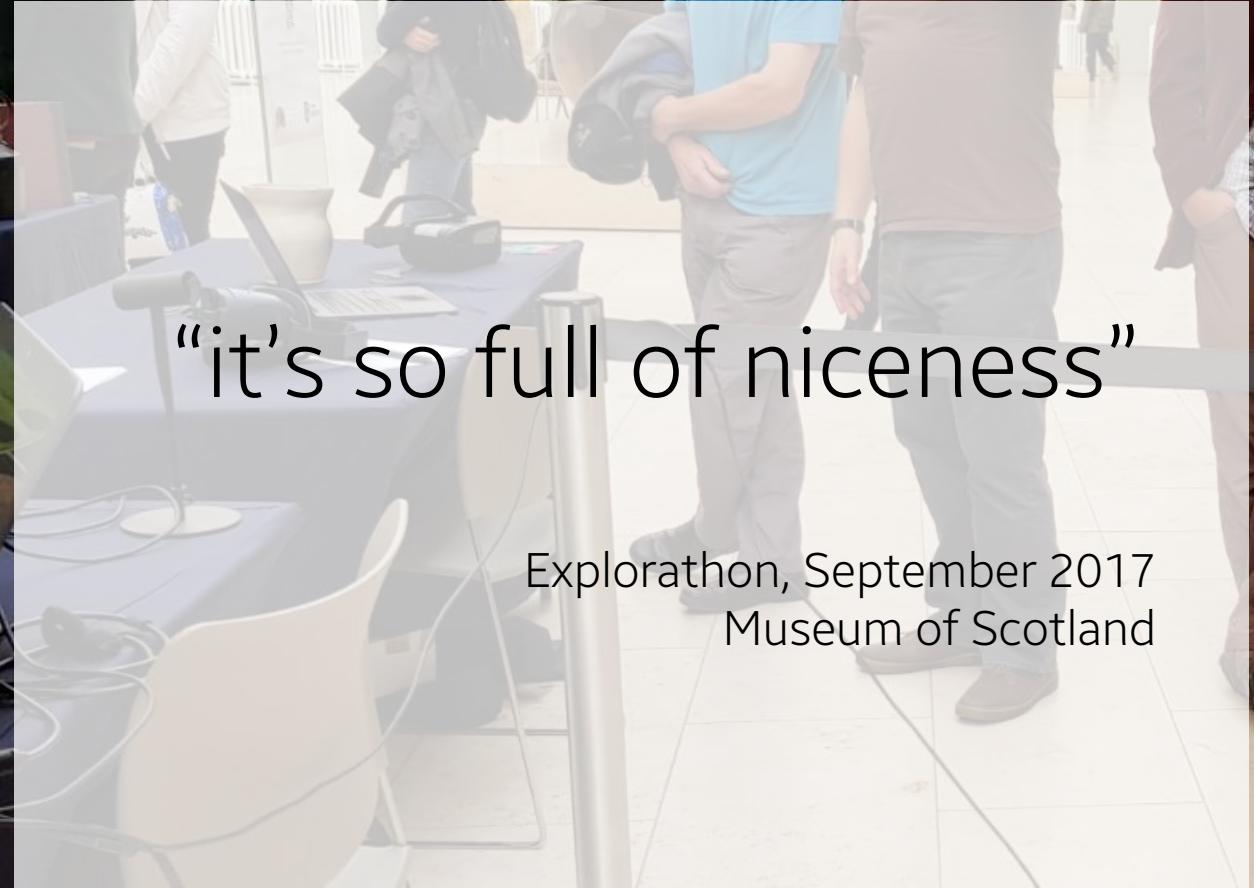
<https://samsunginter.net/ava>

Ava, by Achavanich Beaker Burial
and Samsung Internet and

SAMSUNG
Internet



it's so full of niceness



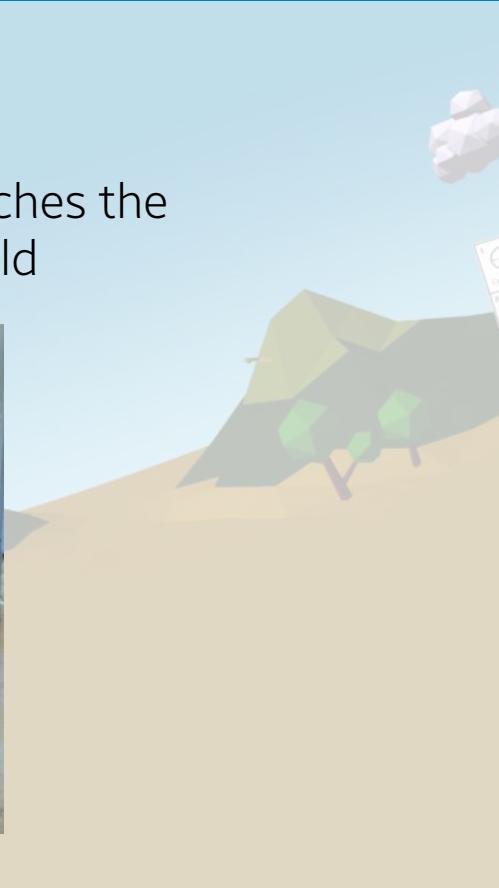
“it's so full of niceness”

Explorathon, September 2017
Museum of Scotland



Finding Ava

Roomscape-type game that teaches the archaeological process in the field





1- New browsers



Desktop browser

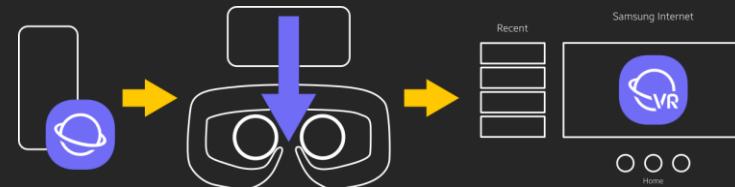


Mobile browser

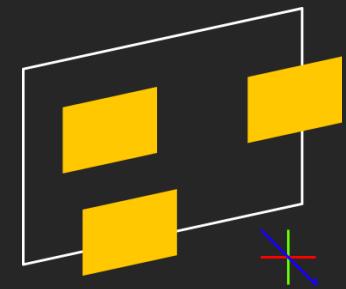


VR browser

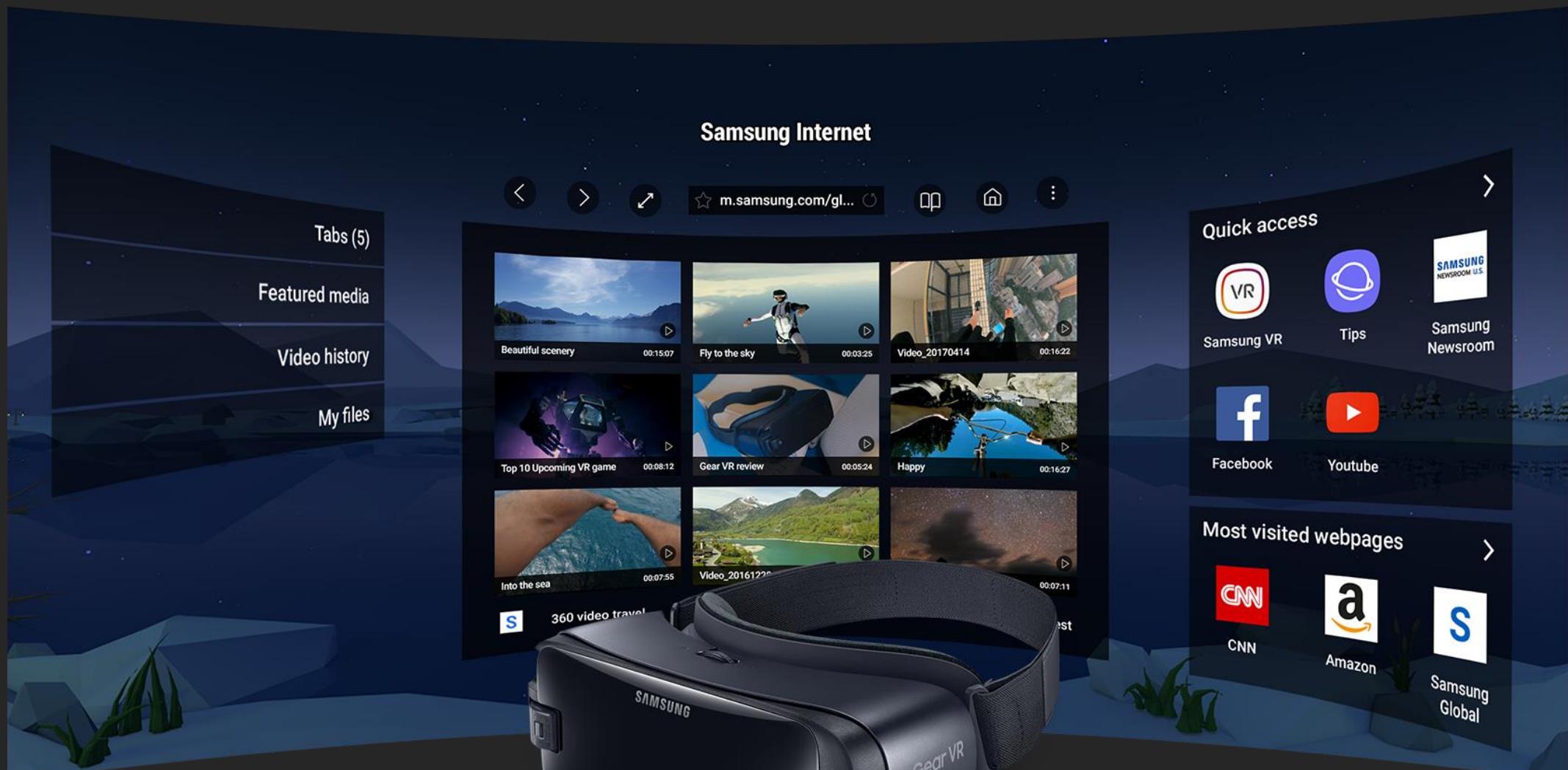
2- New workflows



3- New axis



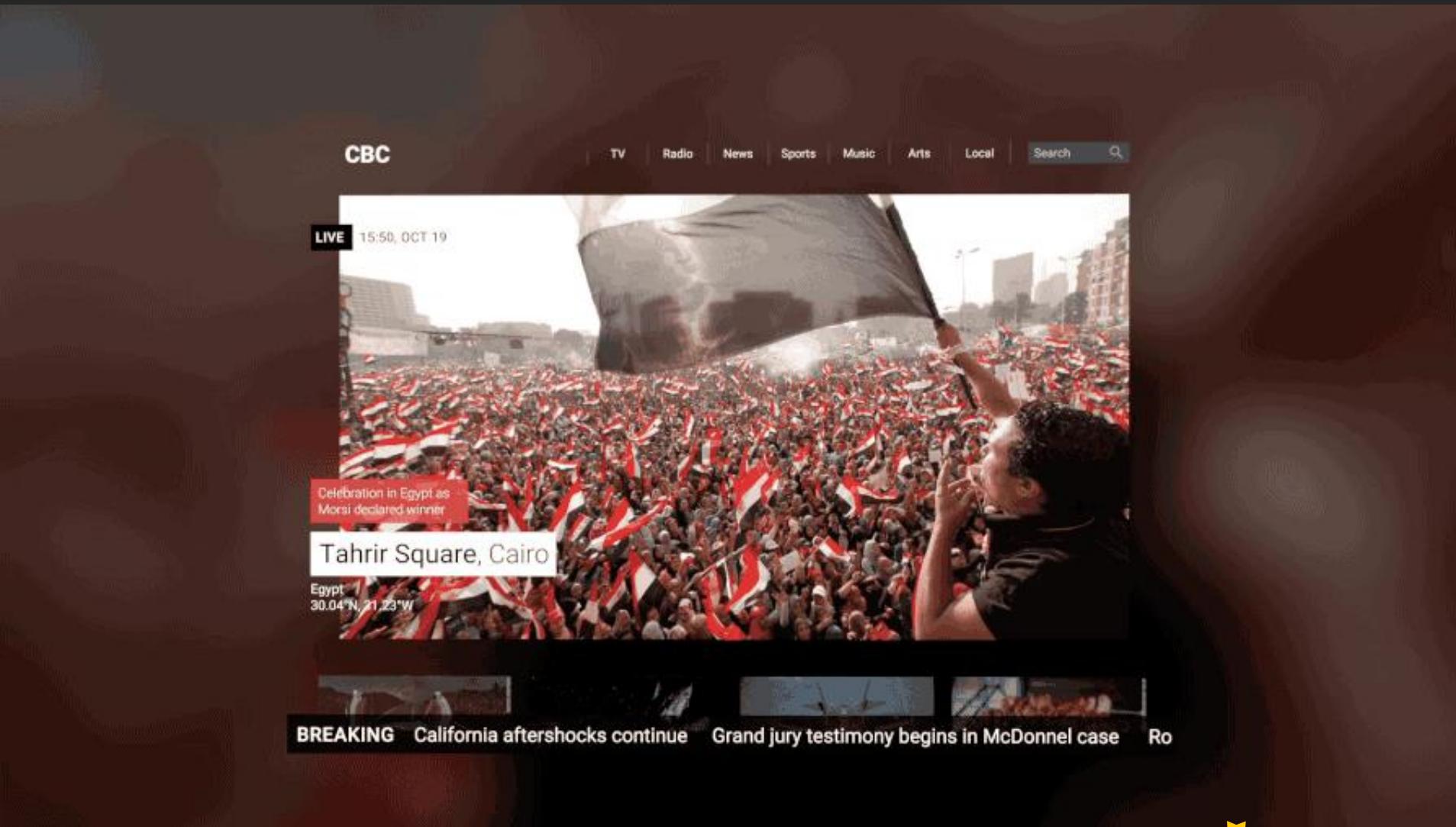
1- New browsers



2- New workflows



3- New axis



source: Josh Carpenter, Google



Web + VR = ❤

- Democratize VR
- Help commoditization of VR
- Can use a flexible tech stack
- Enable innovative experiences

discoverability

ubiquitous/immediate

reach

social





What comes next? (WebVR 2.0)

- Security. Privacy. Comfort
 - Gaze tracking
 - Blur active session
 - Trusted Environment
 - Underperforming content, bad tracking, deliberately offending content
 - Content Isolation
 - Independent Context
 - Fingerprinting
 - Generic enough device id



W3C Workshop on WebVR

Authoring: Opportunities and Challenges

<https://w3c.github.io/webvr-content-workshop/>

@diekus



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