

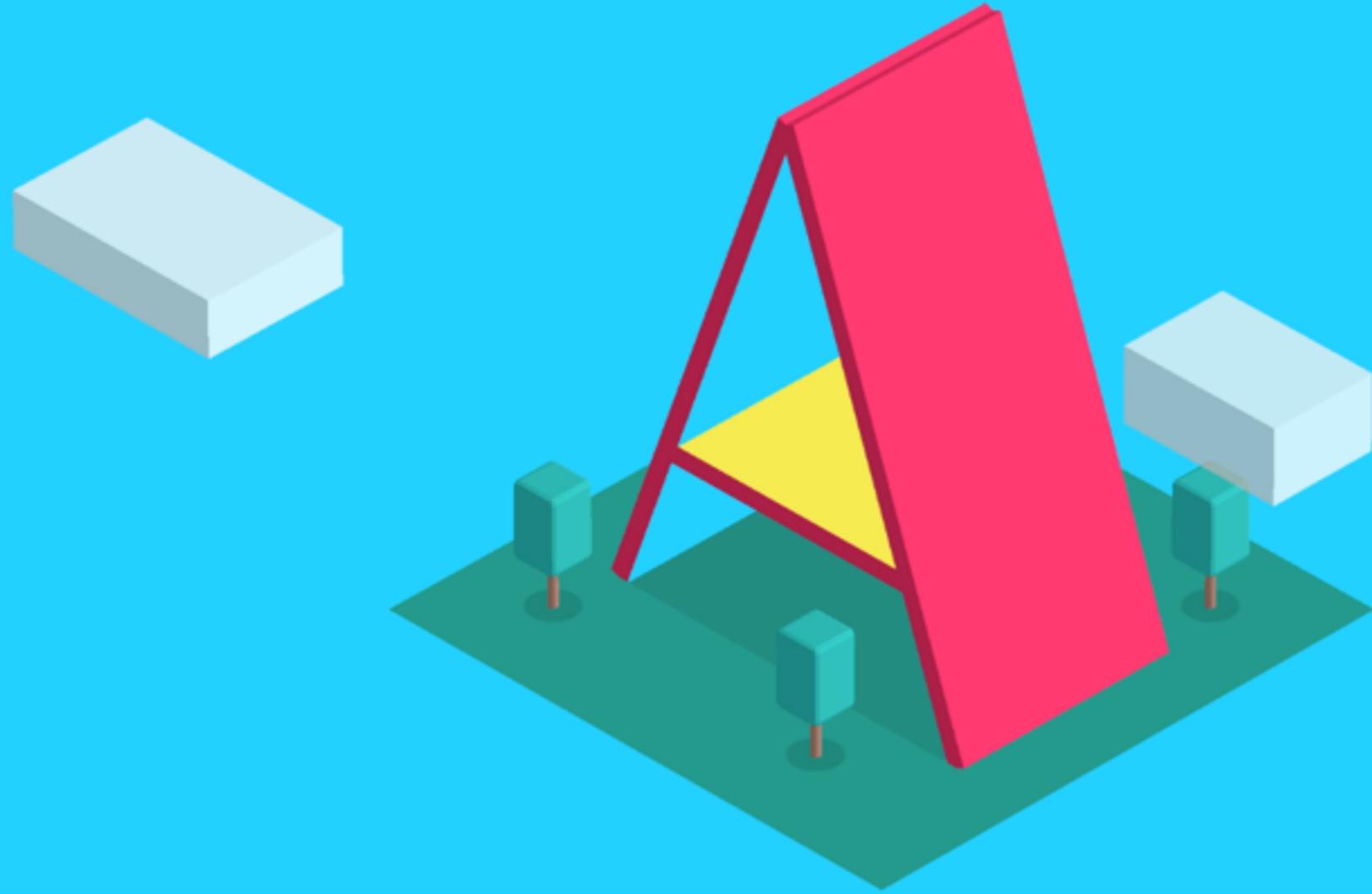
A-FRAME

VR for Web Developers

@andgokevin / @dmarcos / aframe.io
SFHTML5 / 25 May 2016

VR WEB

2D WEB



A-Frame

Community

Sneak Peeks

```

24     opacity: .5;
25     float: right;
26     text-decoration: none;
27   }
28   a:hover{
29     color:#fff;
30     opacity: 1;
31     text-decoration: none;
32   }
33   a img{
34     width:35px;
35     height:35px;
36   }
37 }
38
39 </div>

```

Import WebVR Polyfill

Set up Camera

Geometry + Material + Add

Build UI for Entering VR

Initialize scene

Too hard to create WebVR experiences.

```

46   <a target="_blank" href="http://twitter.com/share?text=Touch%20the%20Rainbow%20Membrane%20with%20%23Web%
47   %20and%20@LeapMotion%20(%20Code%20by%20@Cabbibo%20)&url=http://cabbibo/RainbowMembrane"></a><br><br><br>
49   <a href="http://viveffectforwebvr.com">VIVEFFECT</a><br>
50   <a href="http://cabbibo.com">CABBIBO</a><br>
51   <a href="https://www.leapmotion.com/">LEAP MOTION</a>
52 </div>

```

Search for VREffect

Create render loop

```

52   <script src = "lib/leap.min.js"></script>
53   <script src = "lib/three.min.js"></script>
54   <script src = "lib/underscore.js"></script>
55   <script src = "lib/jquery.min.js"></script>
56   <script src = "lib/TrackballControls.js"></script>
57   <script src = "lib/bitcoin.js"></script>
58   <script src = "lib/SubdivisionModifier.js"></script>
59   <script src = "lib/PhysicsRenderer.js"></script>
60
61   <script src = "lib/VREffect.js"></script>

```

Instantiate renderer

Declare canvas

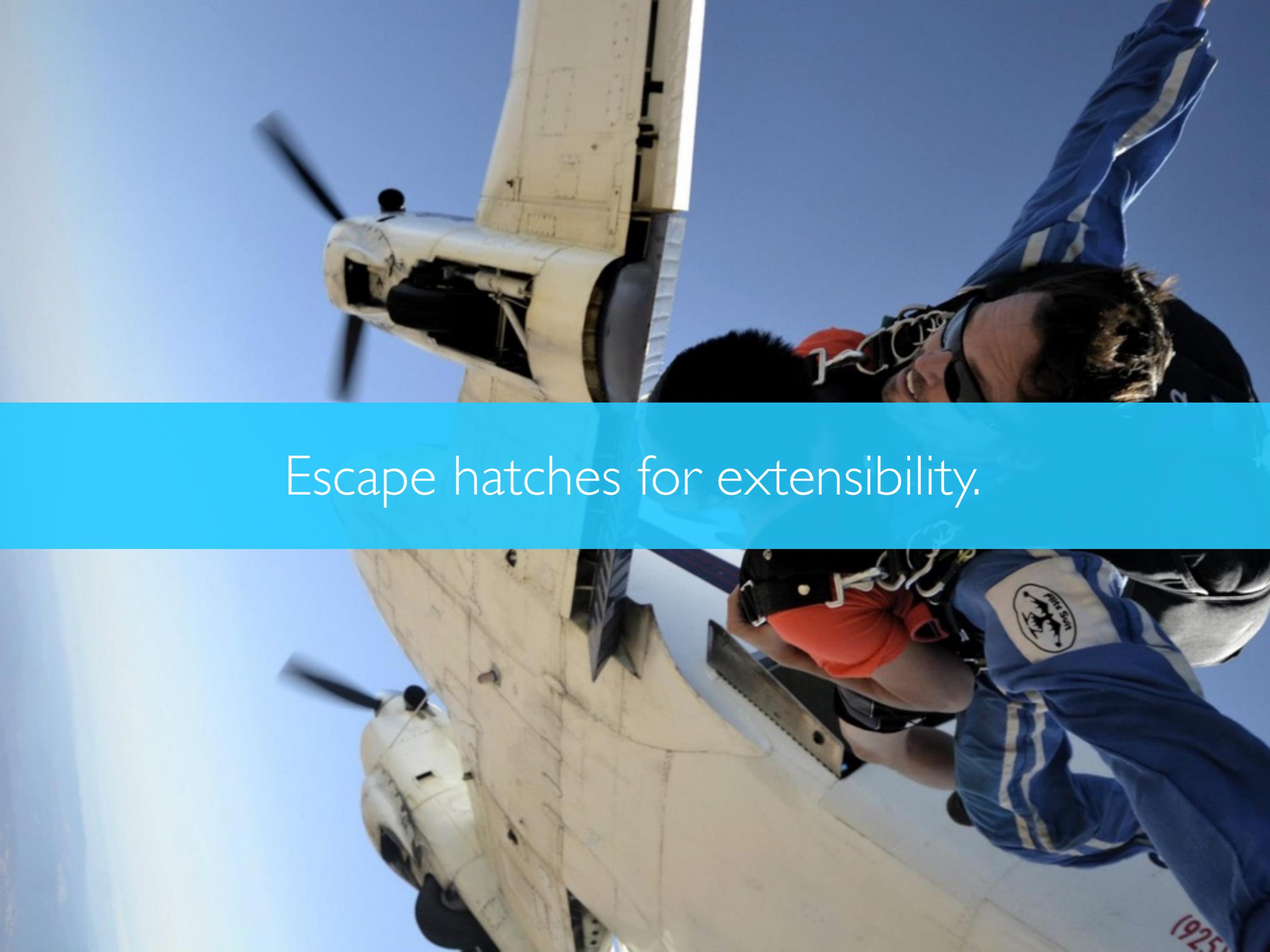
Add lighting

<α-scene>

```
<a-box src="texture.png" width="5">
```

```
<a-obj-model src="flying.obj">Not powerful enough.
```

```
<a-sky src="360-image.png">
```

A photograph of a skydiver in a black and blue wing suit performing a maneuver next to a white biplane. The skydiver is wearing a helmet and goggles, looking up at the plane. The biplane has a propeller and a visible engine. The background is a clear blue sky.

Escape hatches for extensibility.

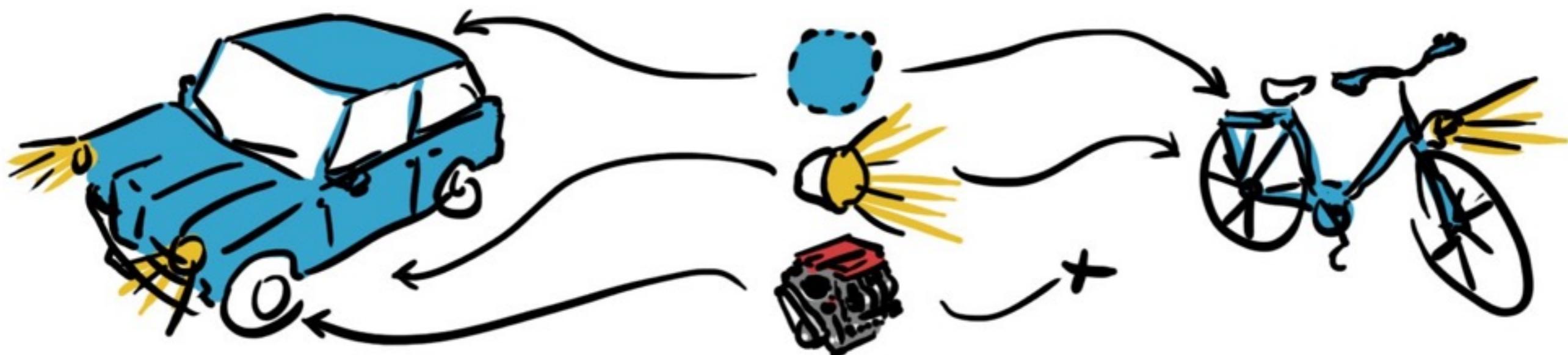
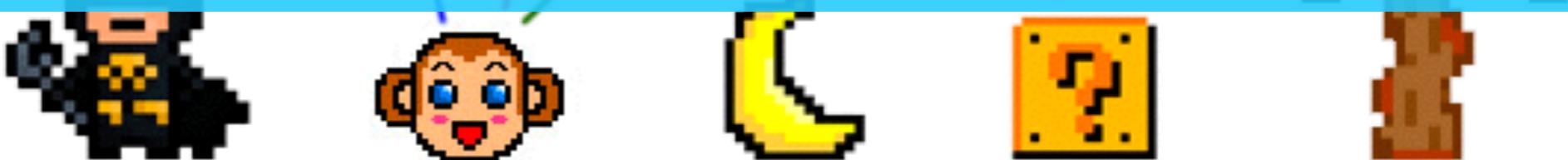


COMPONENTS



Entity-Component-System

ENTITIES



COMPOSING AN ENTITY

<*a-entity*>

COMPOSING AN ENTITY

```
<a-entity geometry="primitive: sphere; radius: 100"  
material="color: skyblue">
```

COMPOSING AN ENTITY

```
<a-entity geometry="primitive: sphere; radius: 100"  
        material="color: skyblue"  
        entity-generator="mixin: rain; num: 100">
```

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<a-entity geometry="primitive: sphere; radius: 100"  
        material="color: skyblue"  
        entity-generator="mixin: rain; num: 100">
```

```
<a-mixin id="rain"  
        geometry="primitive: sphere; radius: 0.05"  
        material="color: white; opacity: 0.5">
```

COMPOSING AN ENTITY

```
<a-entity geometry="primitive: sphere; radius: 100"  
        material="color: skyblue"  
        entity-generator="mixin: rain; num: 100">
```

```
<a-mixin id="rain"  
        geometry="primitive: sphere; radius: 0.05"  
        material="color: white; opacity: 0.5"  
        event-set="_event: collide; explode: true">
```

COMPOSING AN ENTITY

```
<a-entity geometry="primitive: sphere; radius: 100"  
        material="color: skyblue"  
        entity-generator="mixin: rain; num: 100">
```

```
<a-mixin id="rain"  
        geometry="primitive: sphere; radius: 0.05"  
        material="color: white; opacity: 0.5"  
        event-set="_event: collide; explode: true"  
        random-position="min: -10 50 -10;  
                      max: 10 80 10">
```

COMPOSING AN ENTITY

```
<a-entity geometry="primitive: sphere; radius: 100"  
        material="color: skyblue"  
        entity-generator="mixin: rain; num: 100">
```

```
<a-mixin id="rain"  
        geometry="primitive: sphere; radius: 0.05"  
        material="color: white; opacity: 0.5"  
        event-set="_event: collide; explode: true"  
        random-position="min: -10 50 -10;  
                      max: 10 80 10"  
        template="src: #rain-animation">
```

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

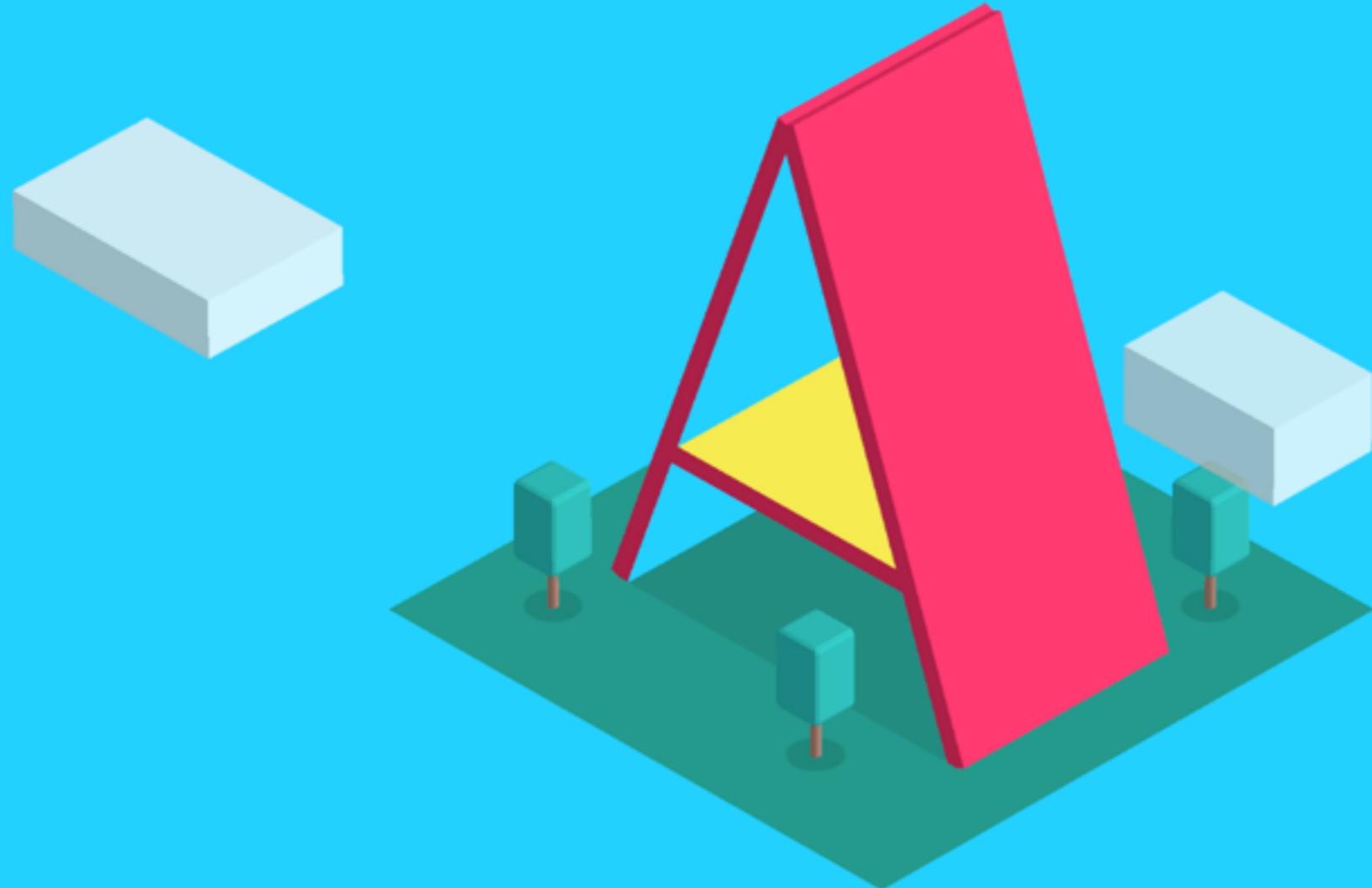
– @wizgrav



Reduces boilerplate

Empowers web developers and designers

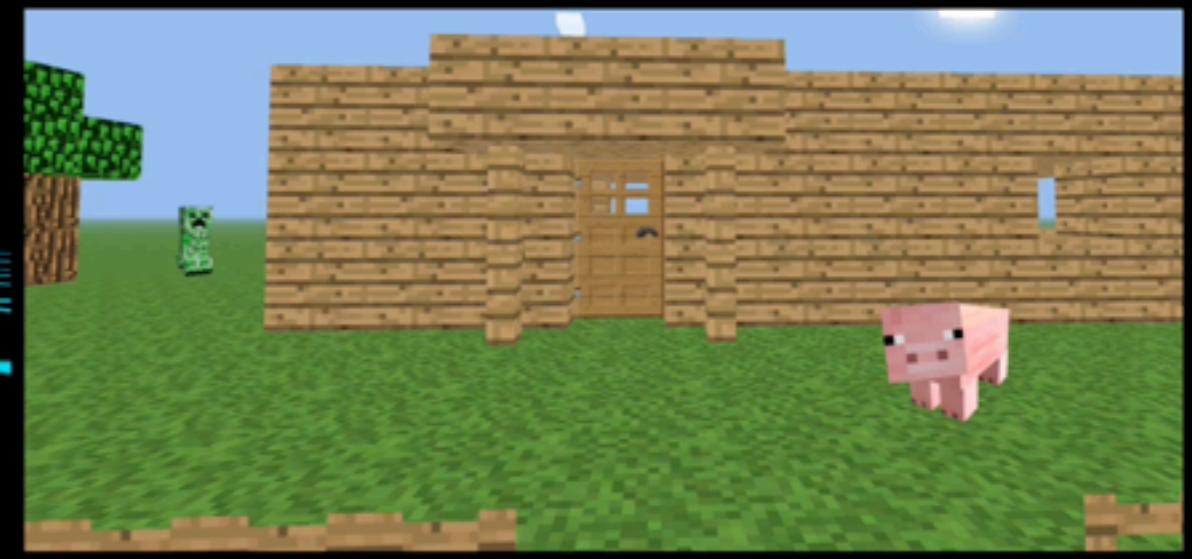
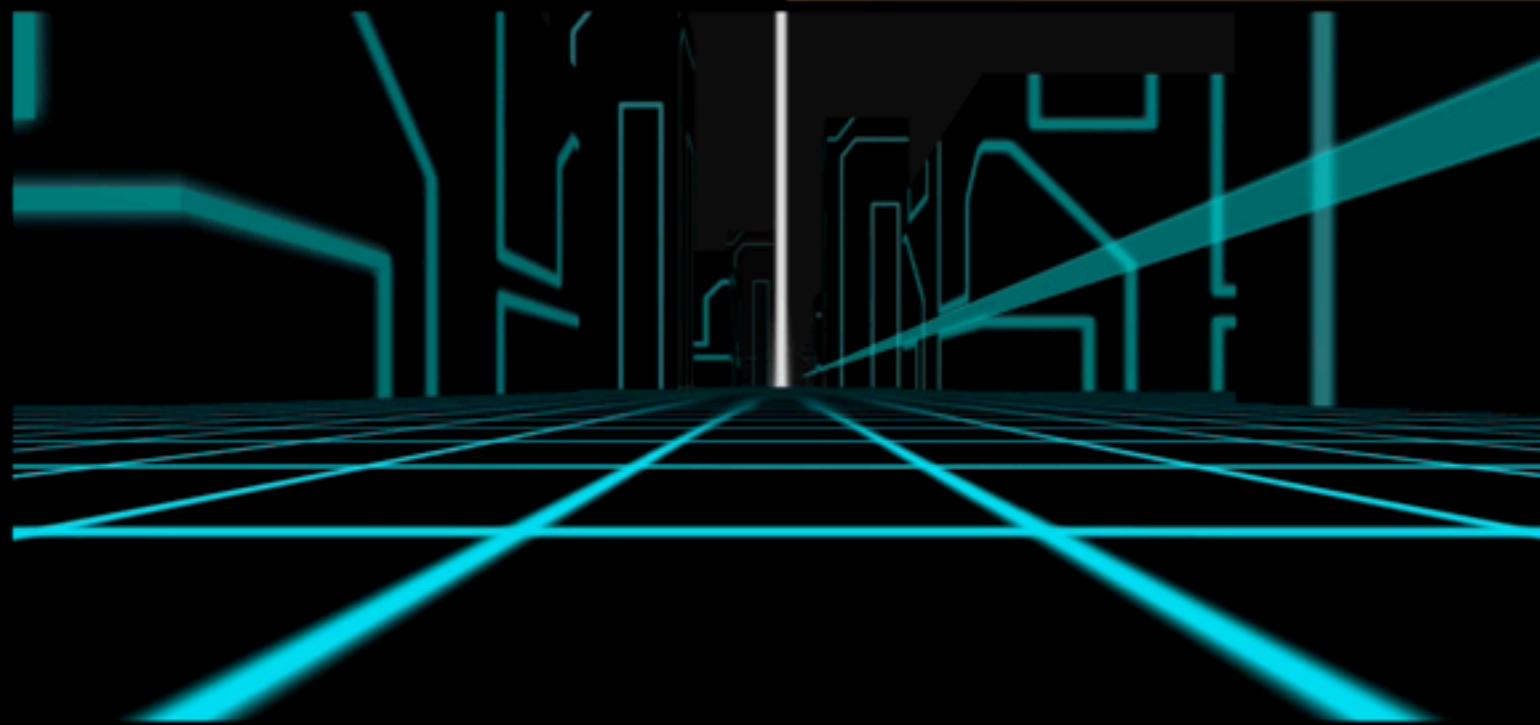
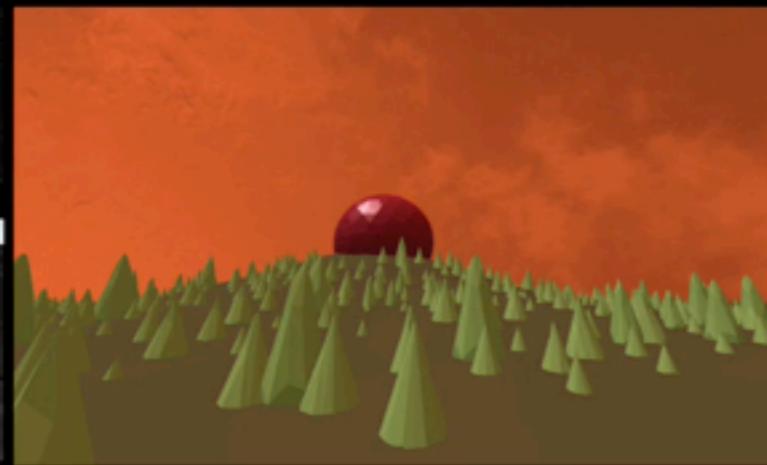
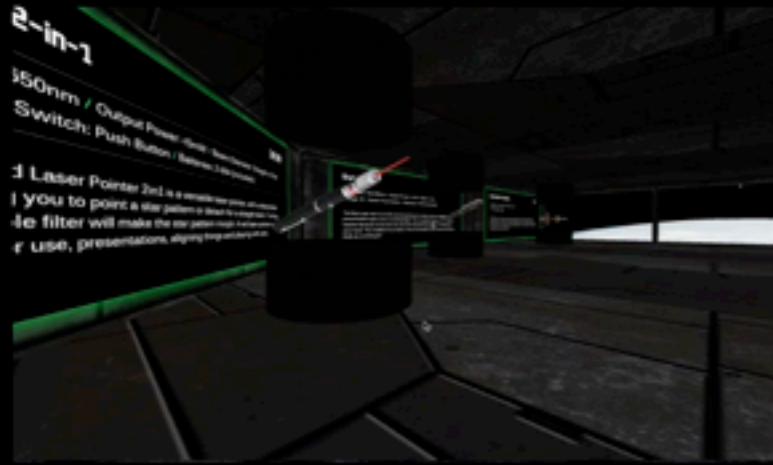
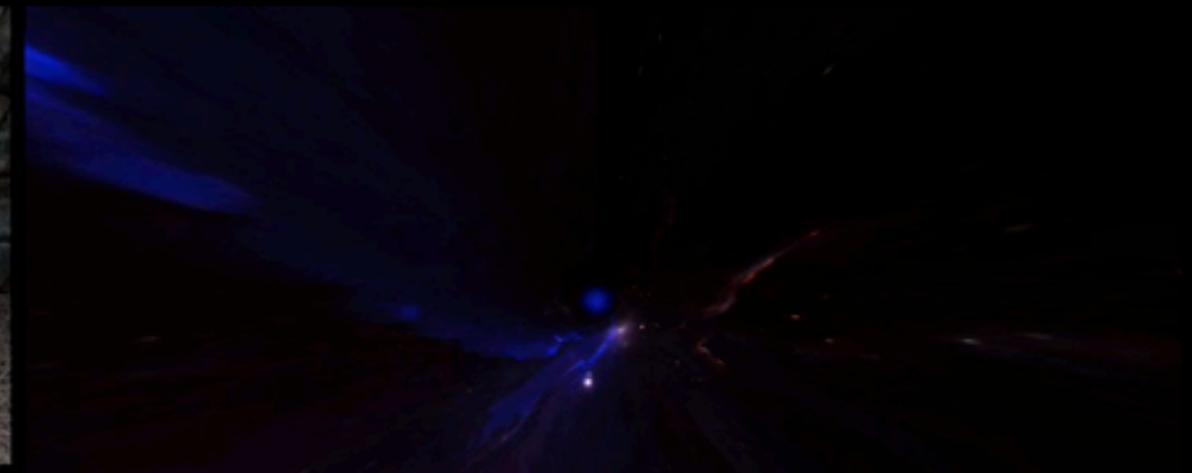
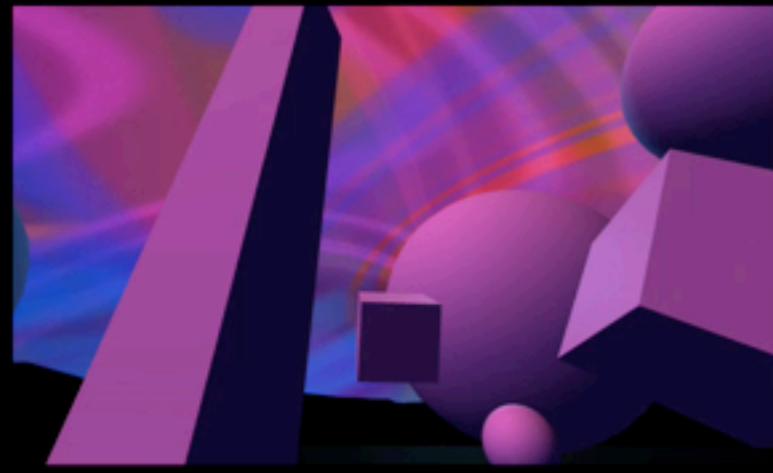
Declarative ECS framework for three.js



A-Frame

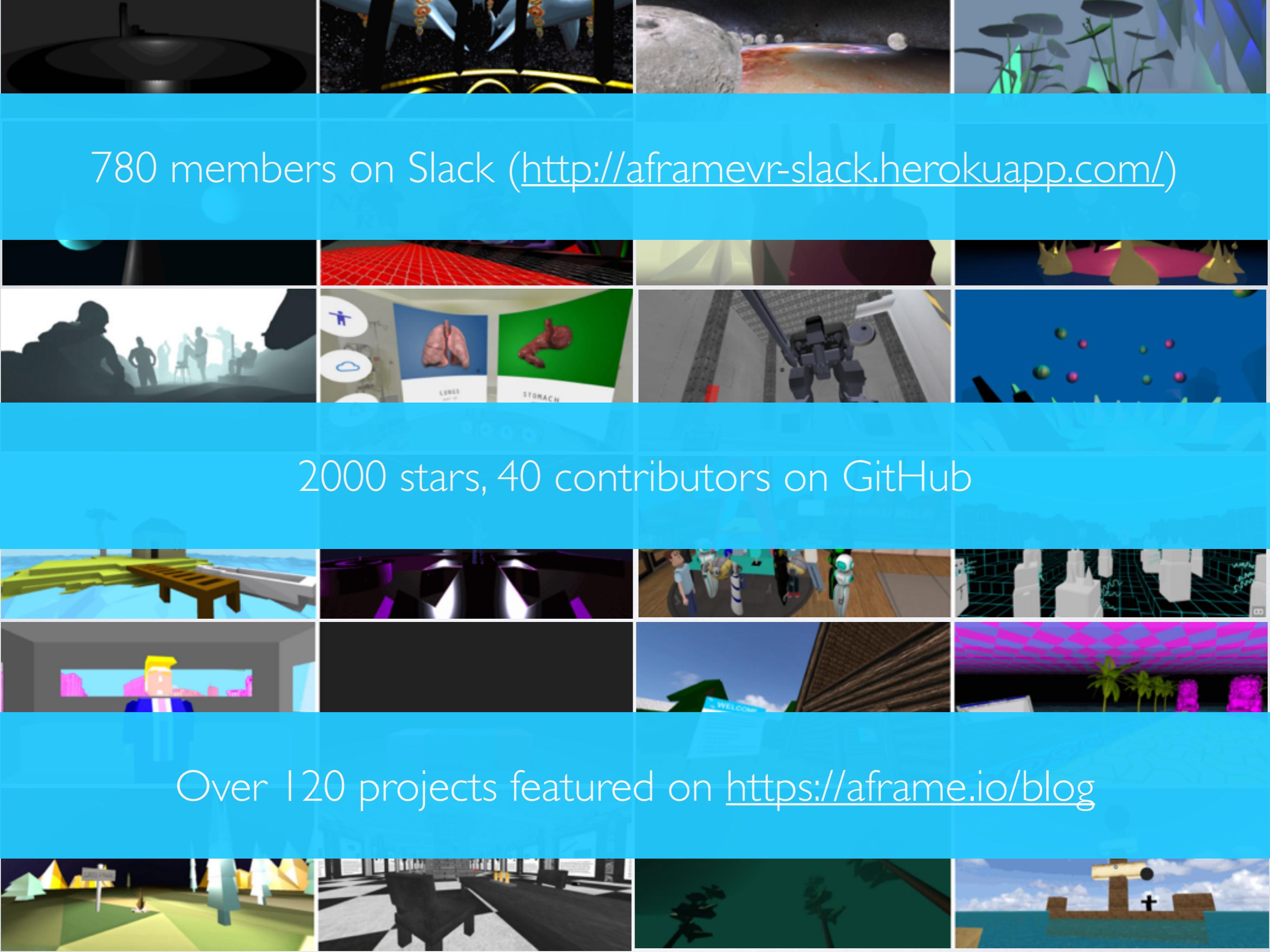
Community

Sneak Peeks



position rotation
controls scale light material
fog geometry sound
text obj-model collada-model

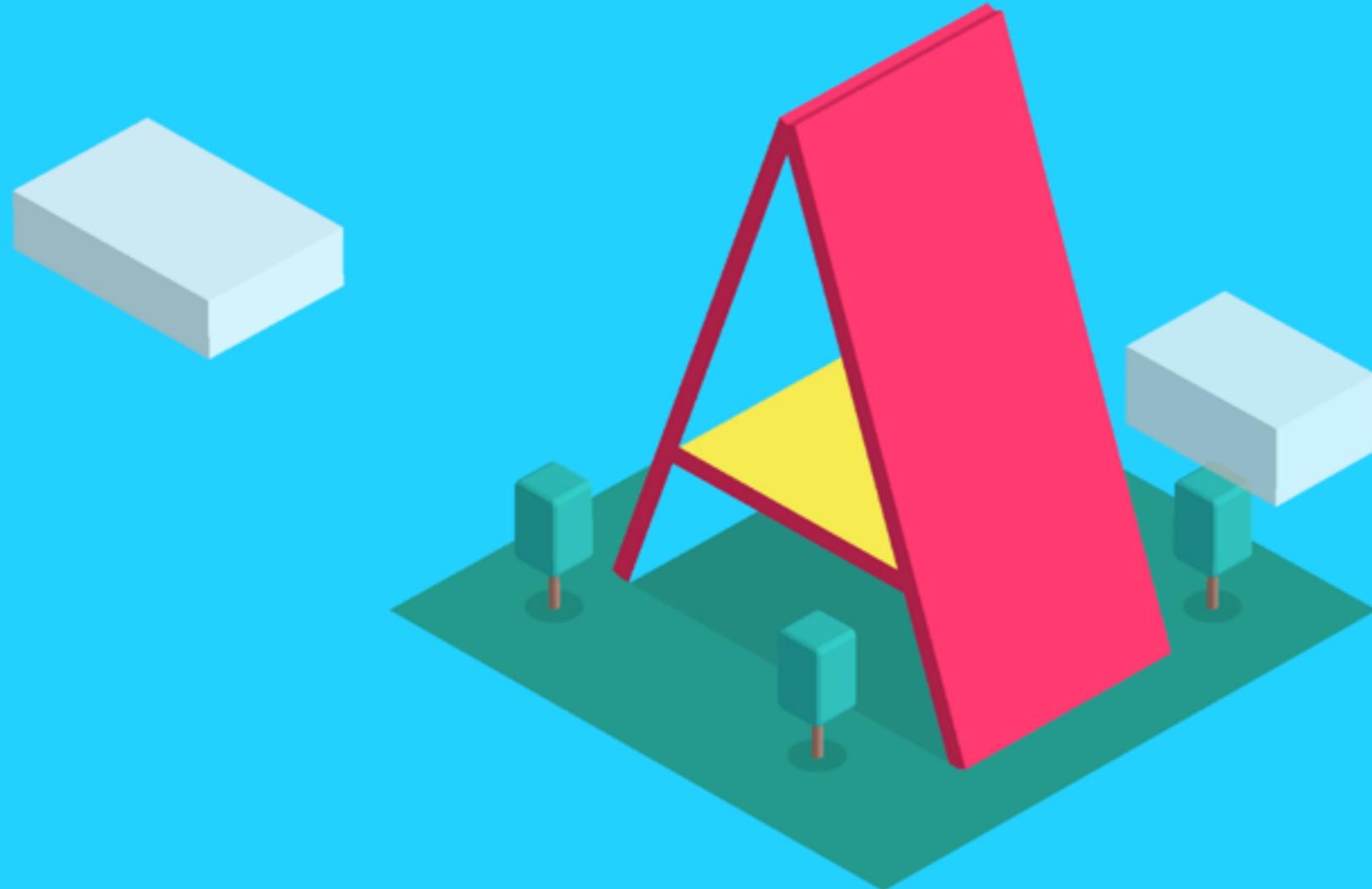
explore aframe-react look-at selectable altspace
no-click-look-controls hud gif-shader draw noise
orbit-controls crease mouse-cursor html-shader
meshline firebase audio-visualization
template physics layout along-path randomizer
text lazy-load position rotation leap-motion-controls
lathe-geometry controls scale light material
gltf collider fog geometry sound gamepad-controls
aframe-meteor proxy-controls collada-model fbx
stereo fence href extrude-geometry follow
fit-texture interpolation entity-generator ocean
universal-controls mesh-line grid-helper draggable
aframe-extras d3



780 members on Slack (<http://aframevr-slack.herokuapp.com/>)

2000 stars, 40 contributors on GitHub

Over 120 projects featured on <https://aframe.io/blog>



A-Frame

Community

Sneak Peeks



Multiuser

See you at tiny.cc/aframe-multi

A-Frame Editor

The A-Frame Editor interface consists of several panels:

- SCENEGRAPH:** A tree view of scene components. Visible nodes include Camera, Scene (with children Box_1, Box_2, Point_light_1, Cylinder_1, Cylinder_2, Plane_1, Light_2, Light_3), Scene 2 (with children Box_3, Point_light_2, Point_light_3, Cylinder_3, Cylinder_4, Plane_2, Plane_3, Light_4, Light_5), Scene 3 (with children Cylinder_5, Box_4, Point_light_4, Box_5, Box_6), and Scene 4 (with children Box_6).
- ATTRIBUTES:** A tabbed panel showing attributes for selected objects. The "COMMON" tab is active, displaying:
 - Type: Box
 - ID: B47D0BFC-D63A-4CBB-98...
 - Position: 5.76 2.00 3.14
 - Rotation: 0.00 0.00 0.00
 - Scale: 1.10 1.00 2.00
 - Visible:
- ASSETS:** A tabbed panel showing assets. The "COMMON" tab is active, displaying:
 - Short
 - Yellow
 - Cube
- 3D EDITOR:** A large 3D coordinate system showing a wireframe scene. It features a large rectangular box at the top center, several smaller boxes, and various light sources represented by starburst symbols.

A-FRAME EXAMPLES

[AFRAME.IO](#) [GITHUB](#) [SLACK](#) [TWITTER](#) [UPLOAD ASSETS](#)

SHOWCASE

[Anime UI](#)

[Composite](#)

[Curved Mockups](#)

[Dynamic Lights](#)

[Shopping](#)

[Spheres and Fog](#)

BOILERPLATES

[Hello World](#)

[360 Video](#)

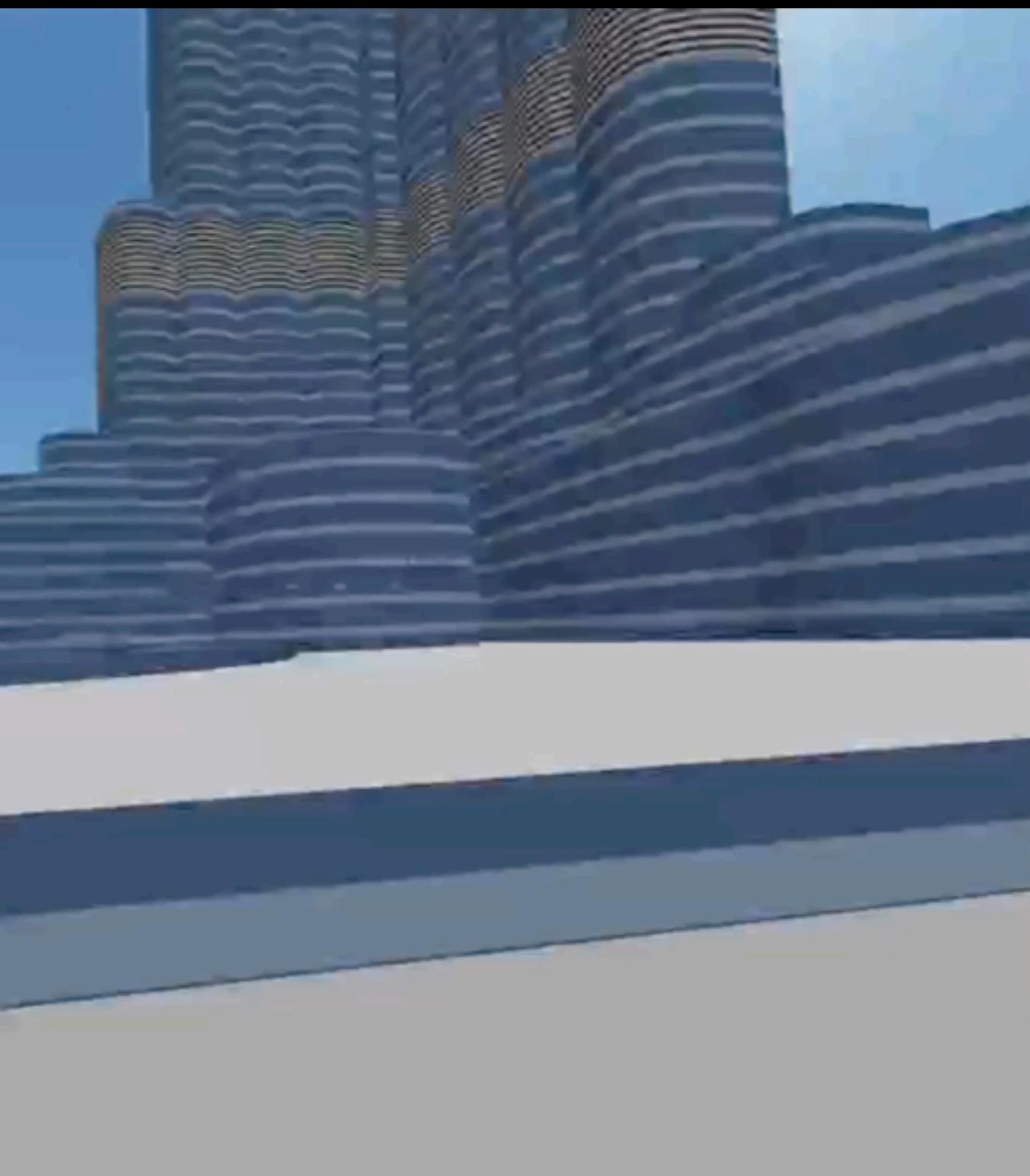
[Panorama](#)

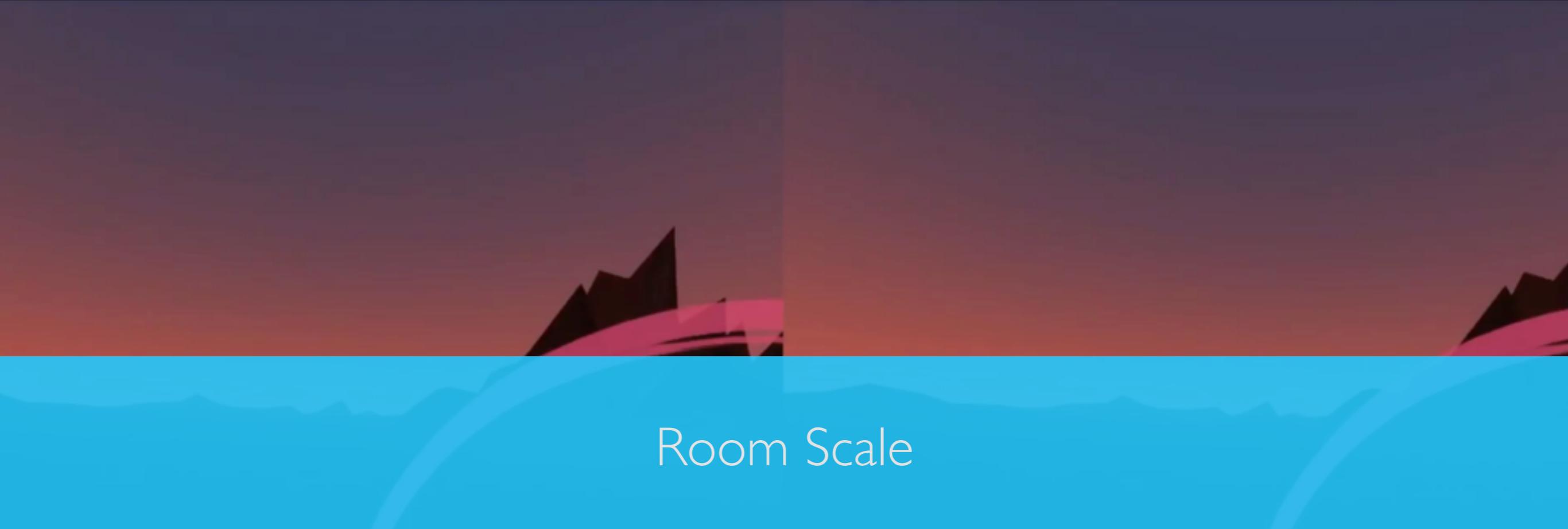
[3D Model](#)

ANIMATIONS

Embedded Scenes

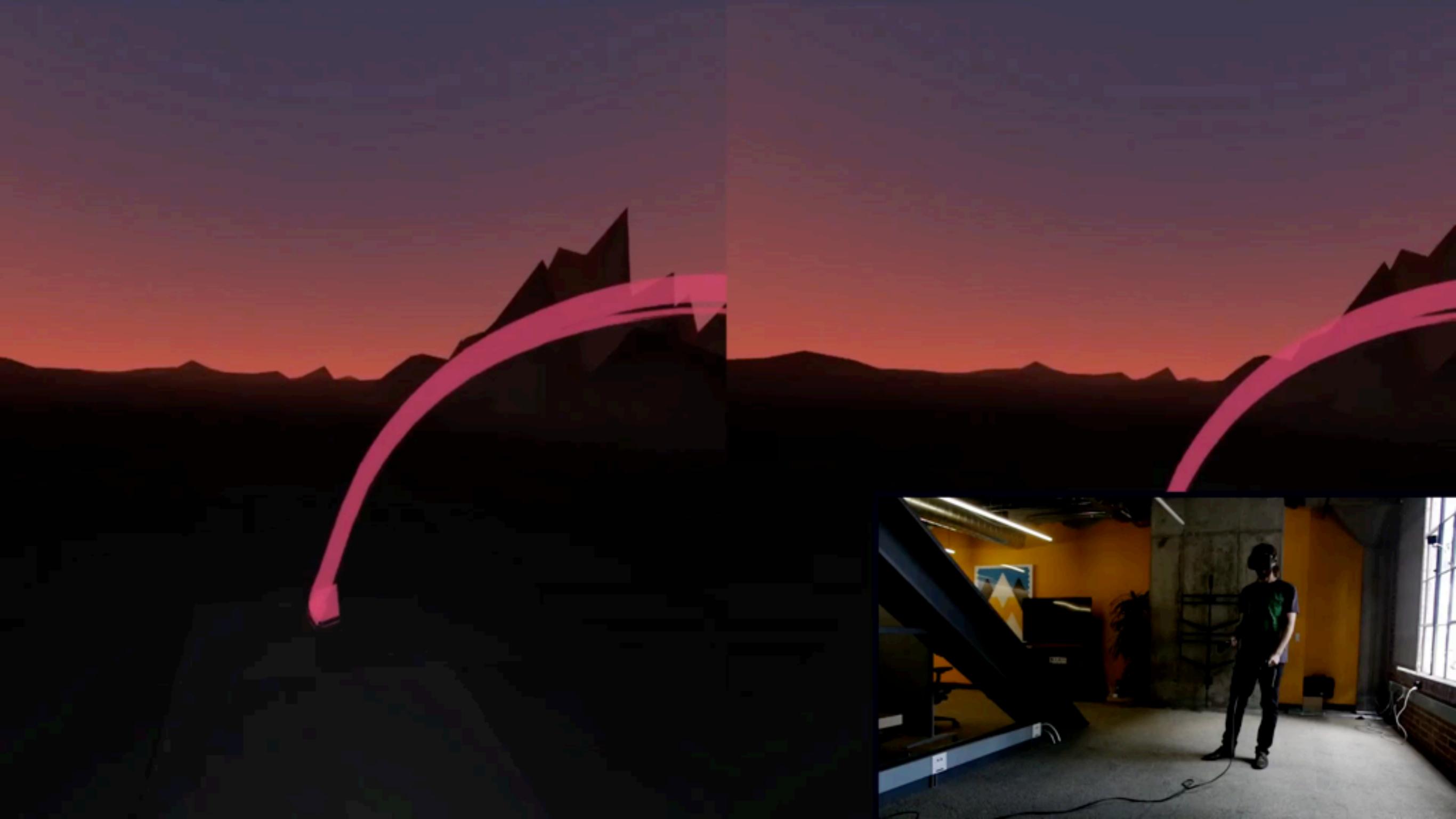






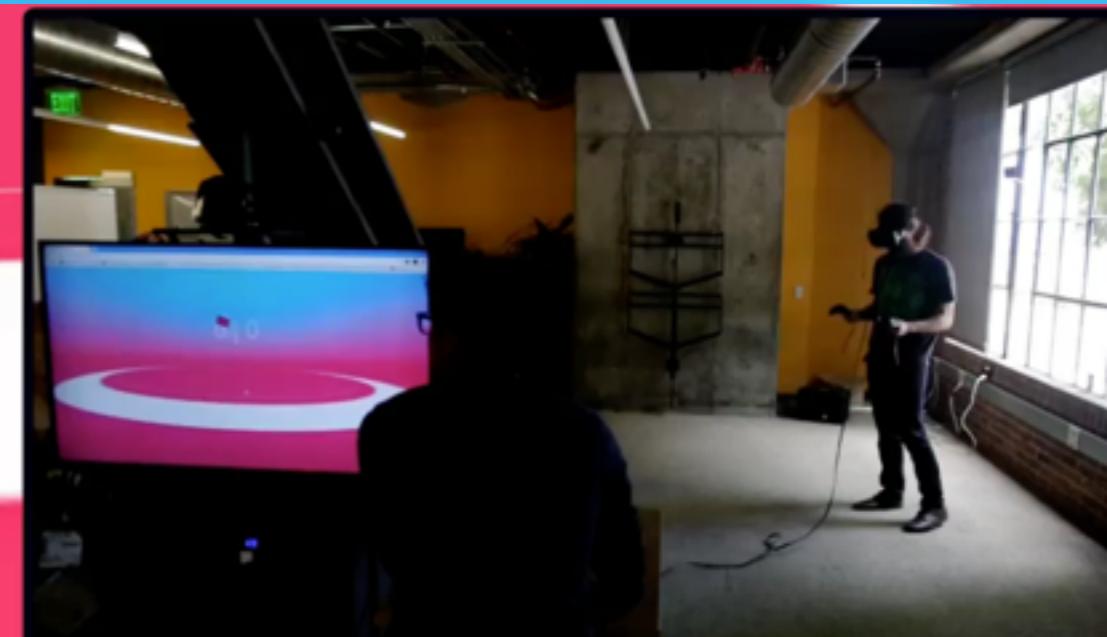
Room Scale



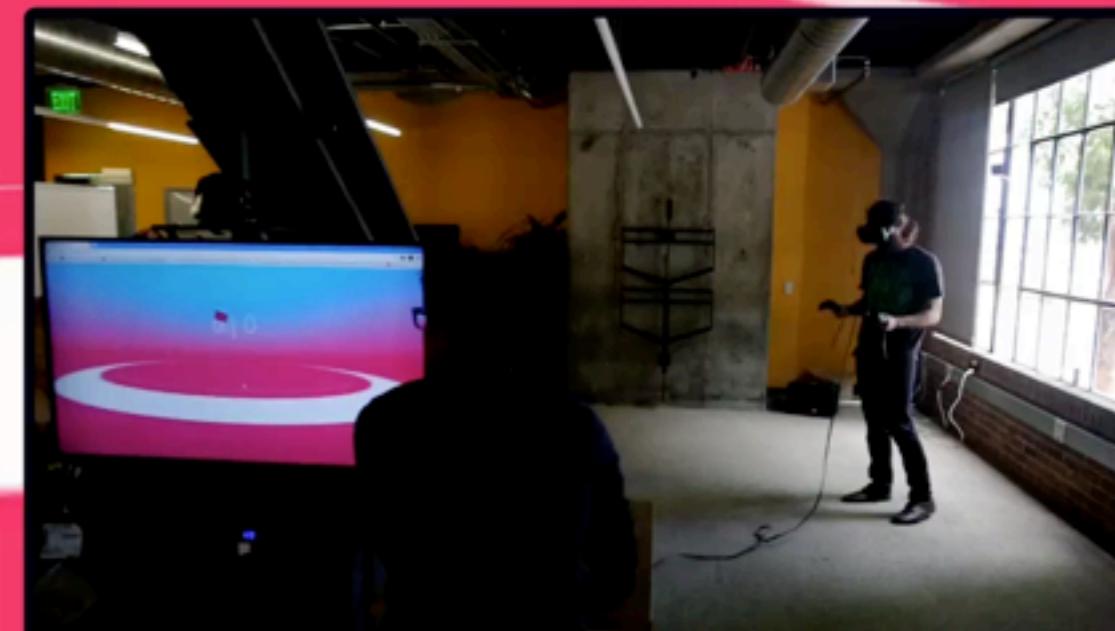


U|O

Local Multiplayer



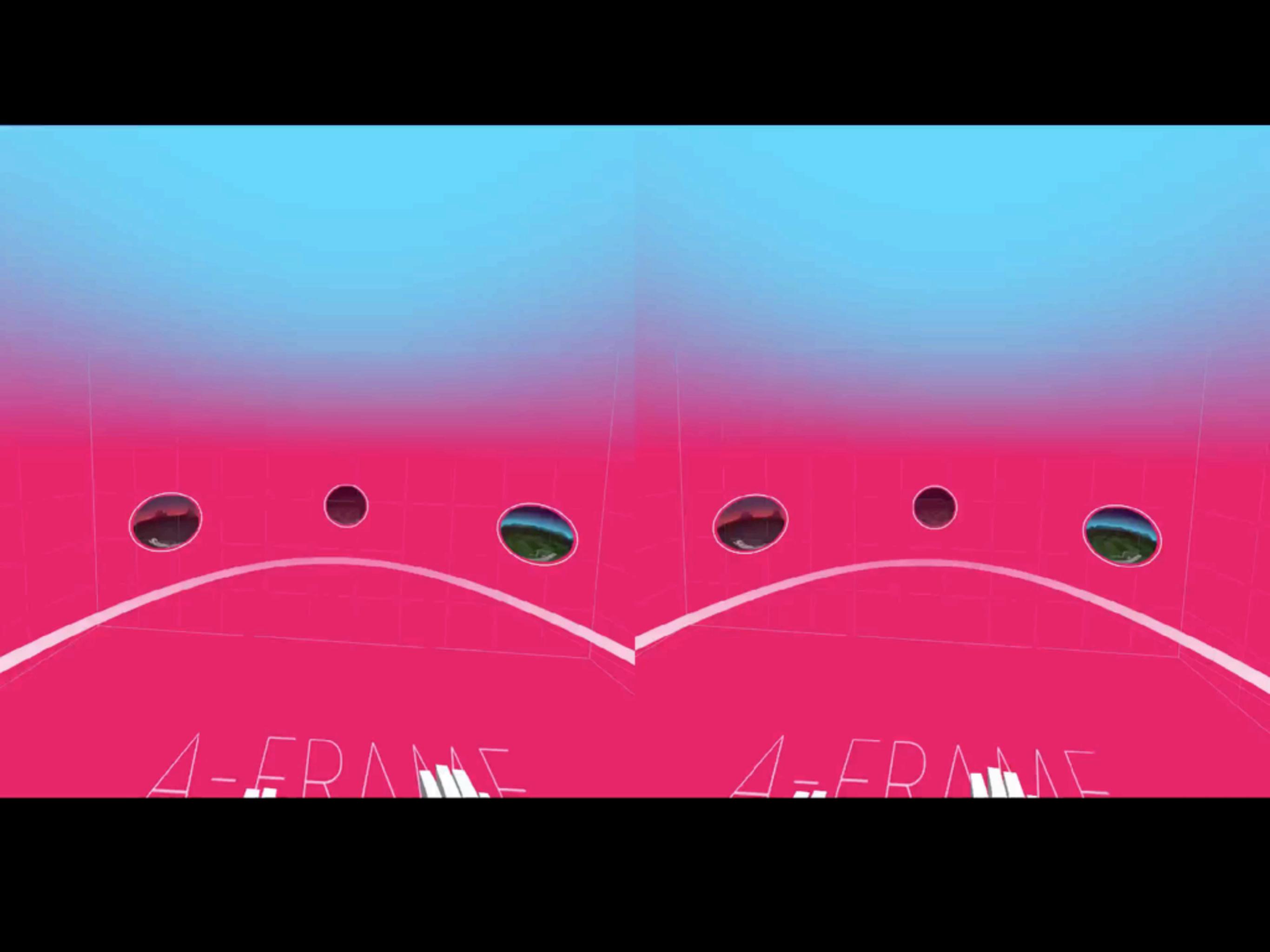
u | o



Link Traversal

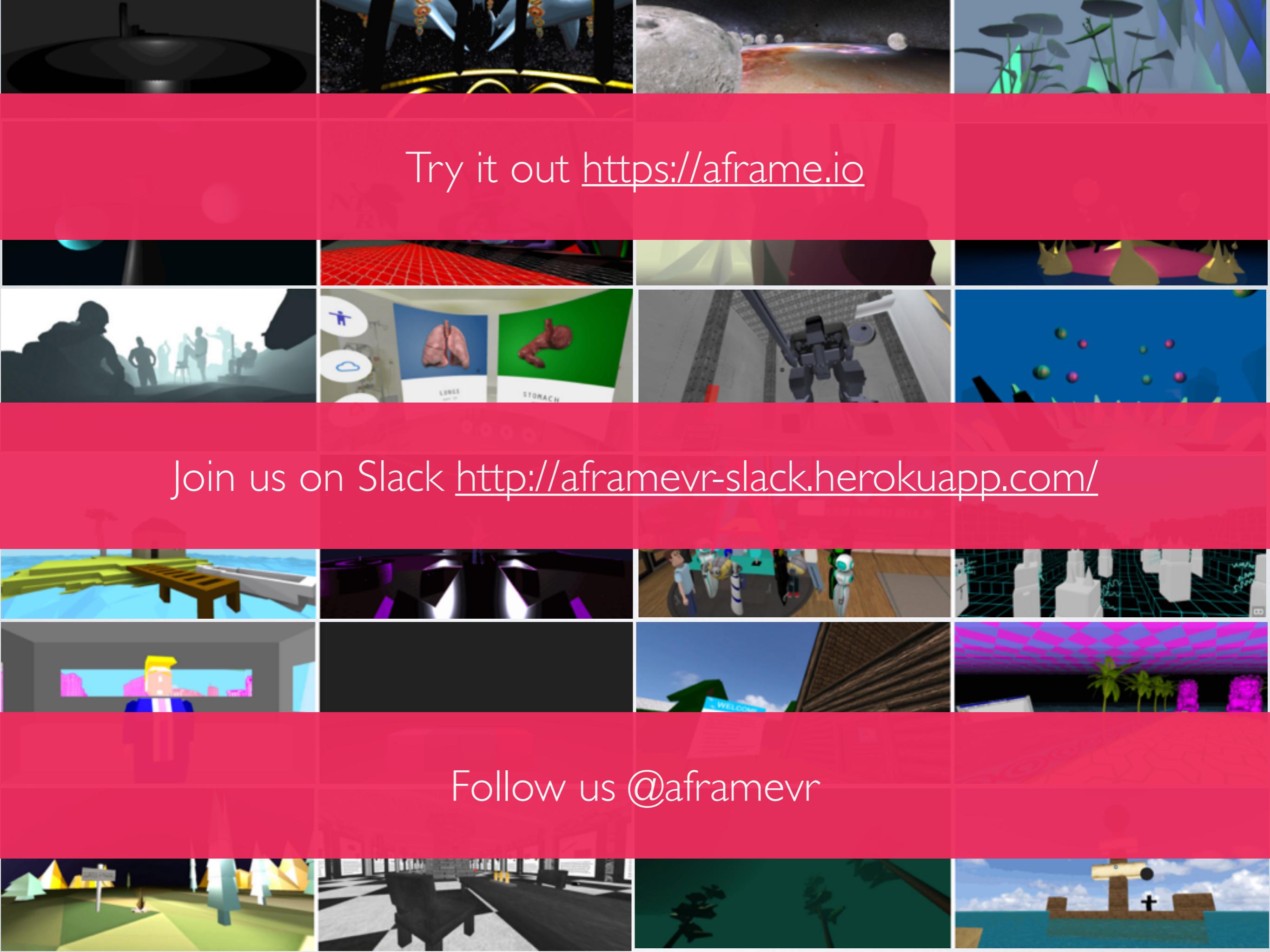
A-FRAME

A-FRAME



A-FRAME

A-FRAME



The image is a collage of 18 screenshots from various A-Frame VR projects, arranged in a grid. The projects include a night sky with a satellite dish, a colorful abstract scene with yellow and blue shapes, a close-up of a textured rock, a green landscape with purple flowers, a red grid floor in a dark room, a white silhouette of people on a beach, a medical interface showing lungs and a stomach, a blue humanoid robot in a hallway, a blue background with floating colored spheres, a wooden dock on water, a dark purple geometric scene, a group of people in a room, a white bottle on a grid floor, a man in a suit on a screen, a black background, a wooden building with a welcome sign, a pink and blue checkered wall, a night scene with colorful trees, a black and white street view, a green forest scene, and a beach with a cross.

Try it out <https://aframe.io>

Join us on Slack <http://aframevr-slack.herokuapp.com/>

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