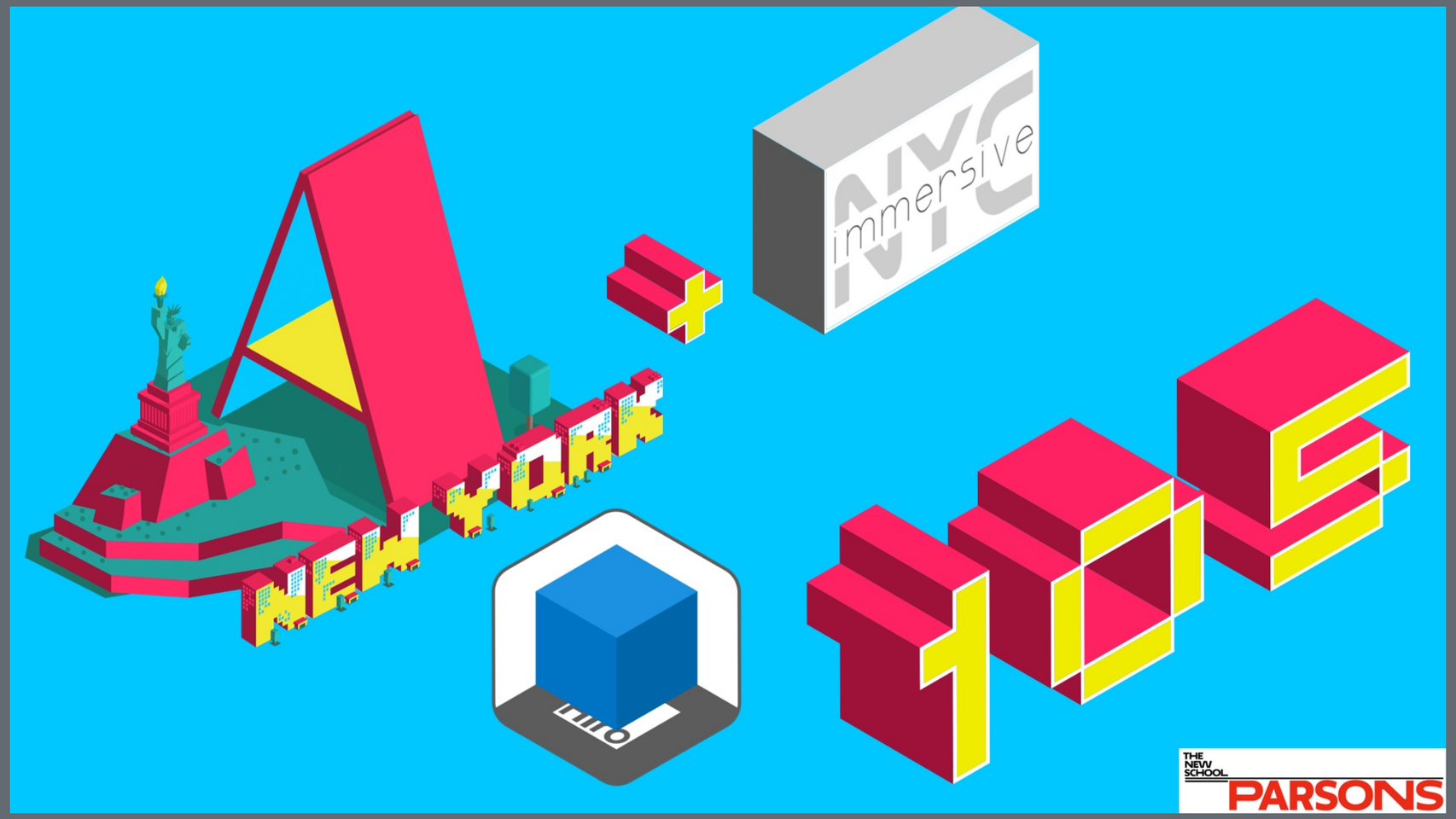
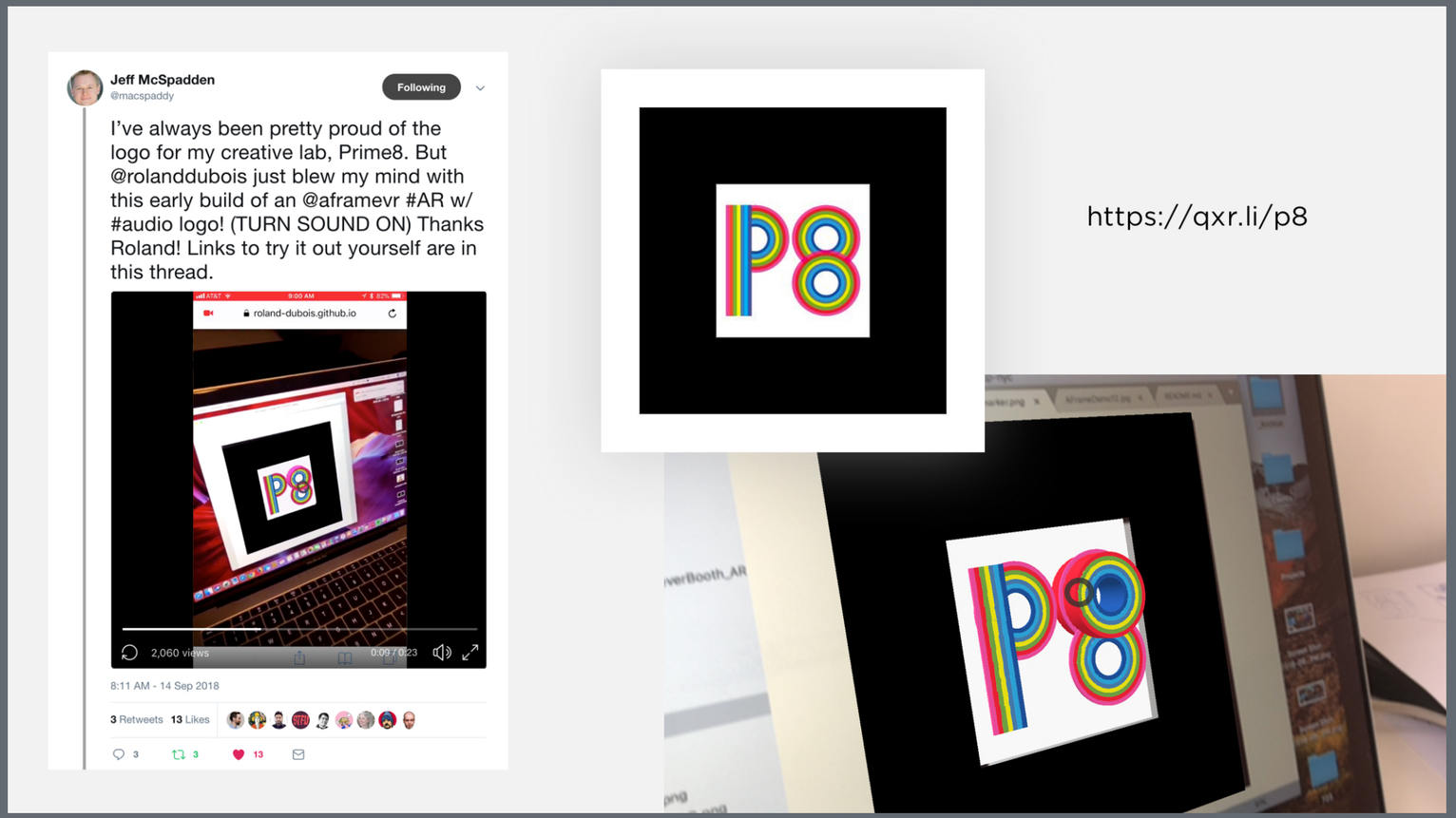
Welcome to A-Frame NYC



Todays Workshop Project: Demo 12 A-Frame Logo AR (AR.js)



AR.js projects we have built in the past

Welcome
to

NYC immersive

&

Immersive NYC

meetup.com/ **Immersive-NYC**
@immersivenyc

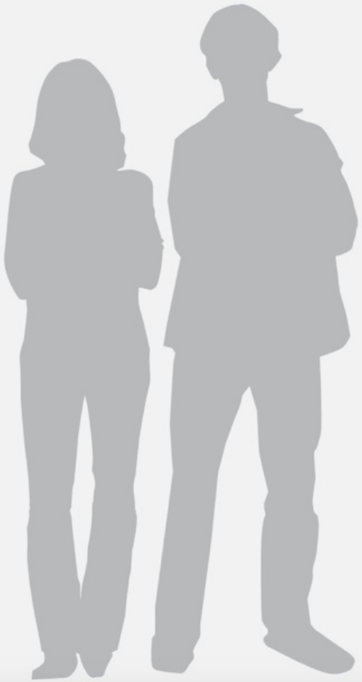
A-Frame NYC

meetup.com/ **A-Frame-NYC**
#aframe_nyc

at propelify Innovation Festival 2018.

Join our vibrant NYC-based community of professionals in immersive technologies (**XR**) - virtual reality (**VR**), augmented reality (**AR**), and mixed reality (**MR**).

Interested to become a **partner** or **sponsor**?
Contact us @**rolanddubois** @**debraeanderson**



Imagenation_poster_24X36

Imagenation_poster_18X24

Hang poster at a height that positions the marker (black frame) exactly 1 meter (39.37 inches) from the ground

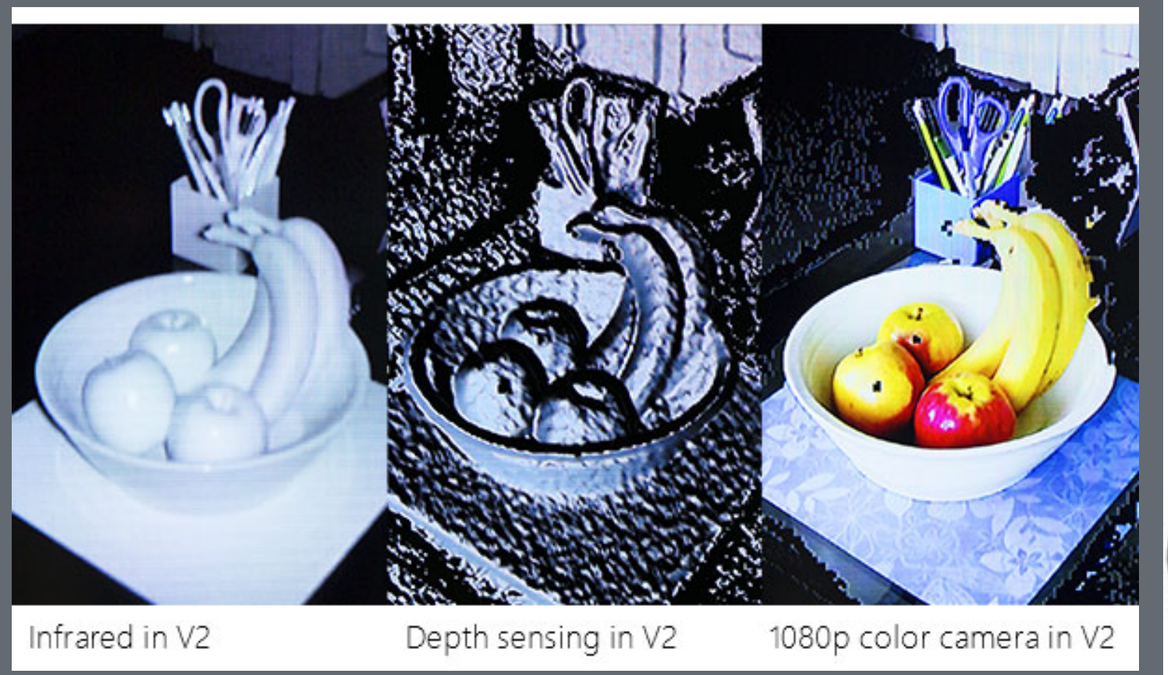
We will be covering:

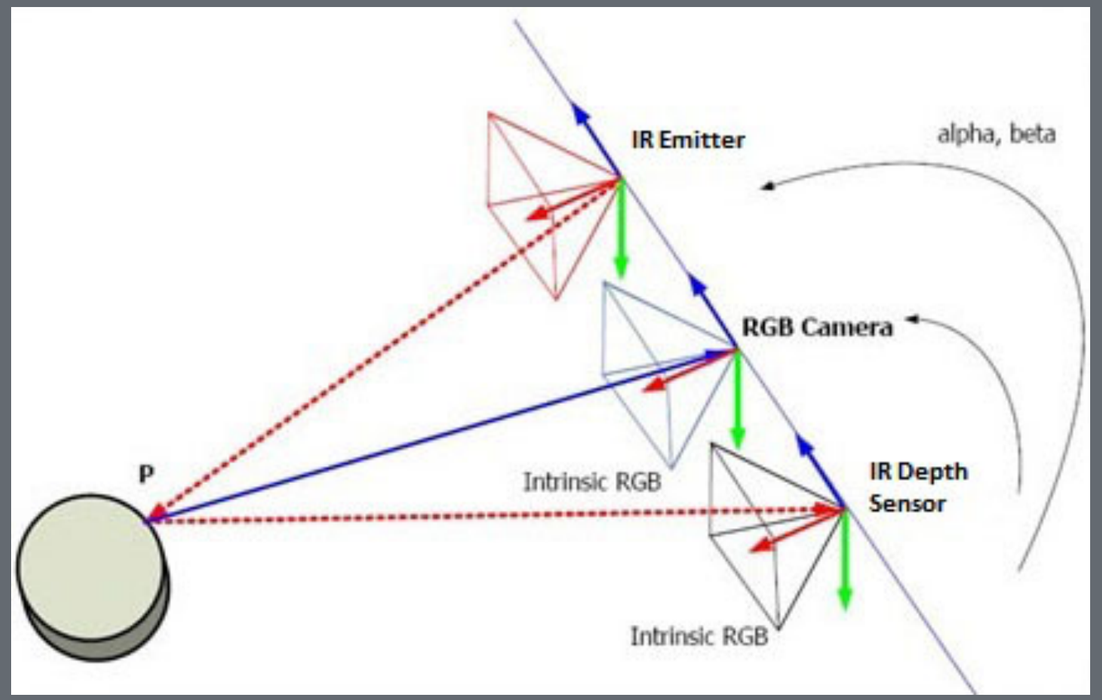
- Overview of the current web-based AR landscape
- A-Frame AR (marker-based AR with AR.js)
- Setup: Dev Environment & Git or Glitch
- AR "Hello World"
- Custom markers and how to do it right
- Building the Logo Demo

Overview of the current web-based AR landscape

Depth Sensors vs Computer Vision (+ DL)

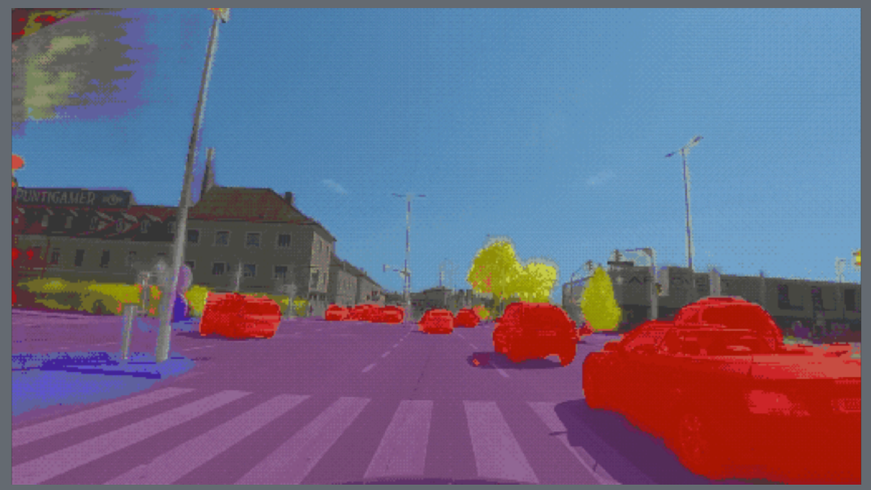
Depth sensors

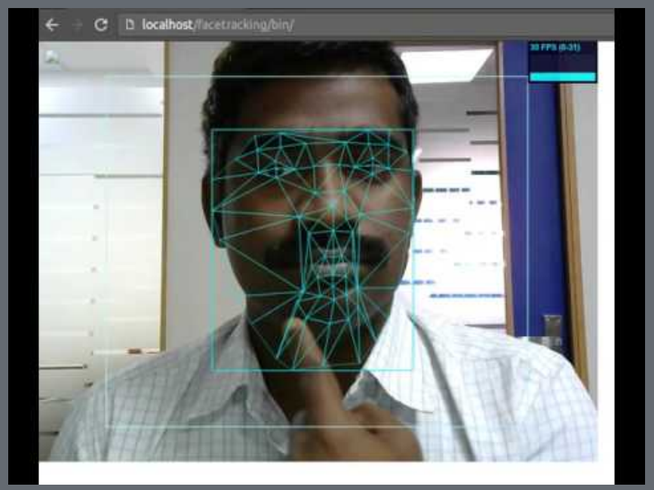




Tango, Kinect, Leap Motion, or Asus Xtion
IR (Infrared) or Laser point cloud

Computer Vision & Deep Learning





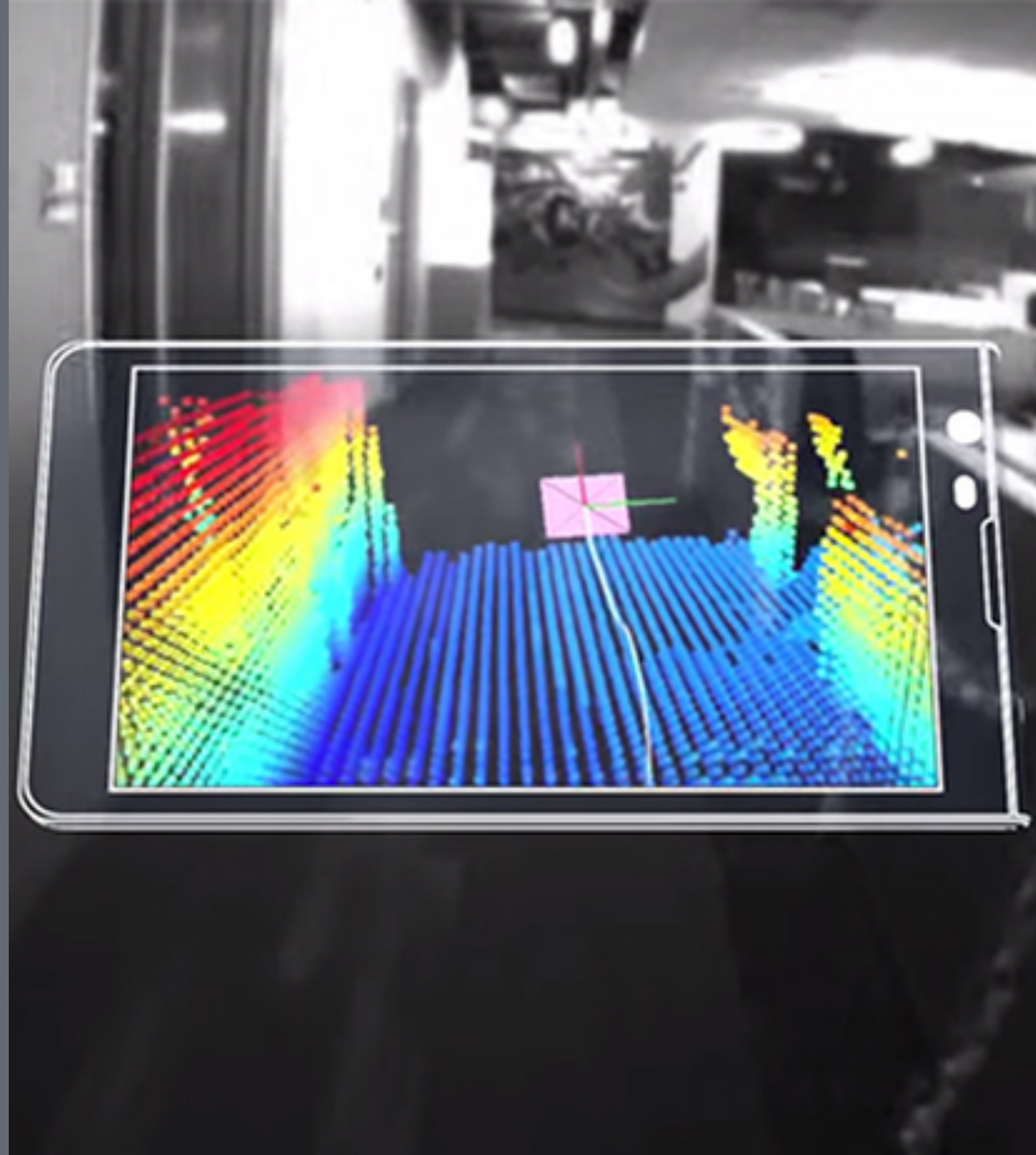
OpenCV (open-source C++ Library from Intel)

- tracking.js
- three.ar.js / jsartoolkit

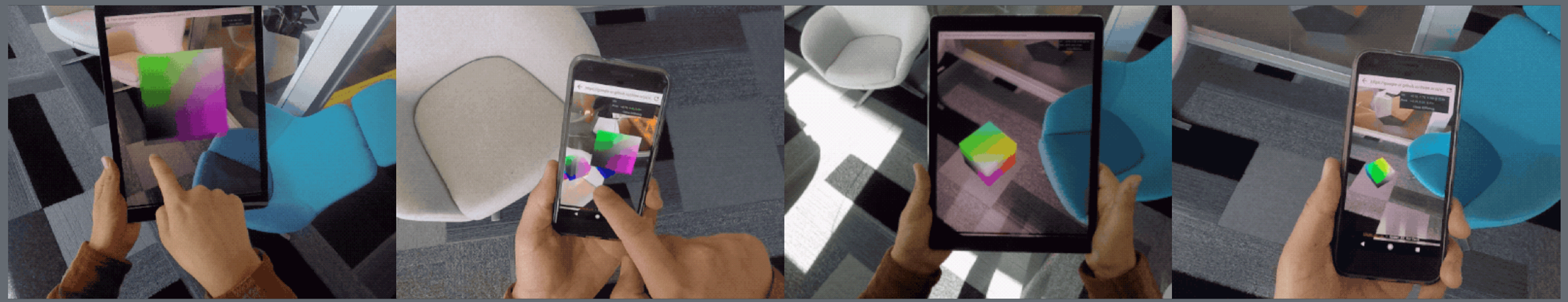
WebARonTango shut down to focus on ARCore

Tango (launched in 2014) and Chromium (extending the WebVR 1.1 API)
Needed a Tango enabled device

- Wide FOV Camera & Infrared Camera
- Features: Marker detection, ADF support (Tango saves these area scans in an Area Description File), motion tracking, rendering of the camera's video feed, and basic understanding of the real world



WebARonARCore/WebARonARKit



- Install custom app/browser to access device hardware for exposure to browser
- Limited to devices that support ARCore/ARKit (provide marker detection capabilities, plane detection and hit testing)

THREE.AR - WebVR API extension for smartphone AR

- Motion tracking - exact location and orientation in 3D space (6DOF)
- Rendering the pass through camera (rendering on top of camera feed)
- Basic understanding of the real world - identify planes in the real world (or meshes, objects/markers, point clouds)

AR.js (& A-Frame)

- **Fast** - up to 60 fps on two year-old devices
- **Web-based** - no installation, javascript based on three.js + jsartoolkit5
- **Open Source** - large community
- **Using Web Standards** - WebGL and WebRTC (no additional hardware needed)

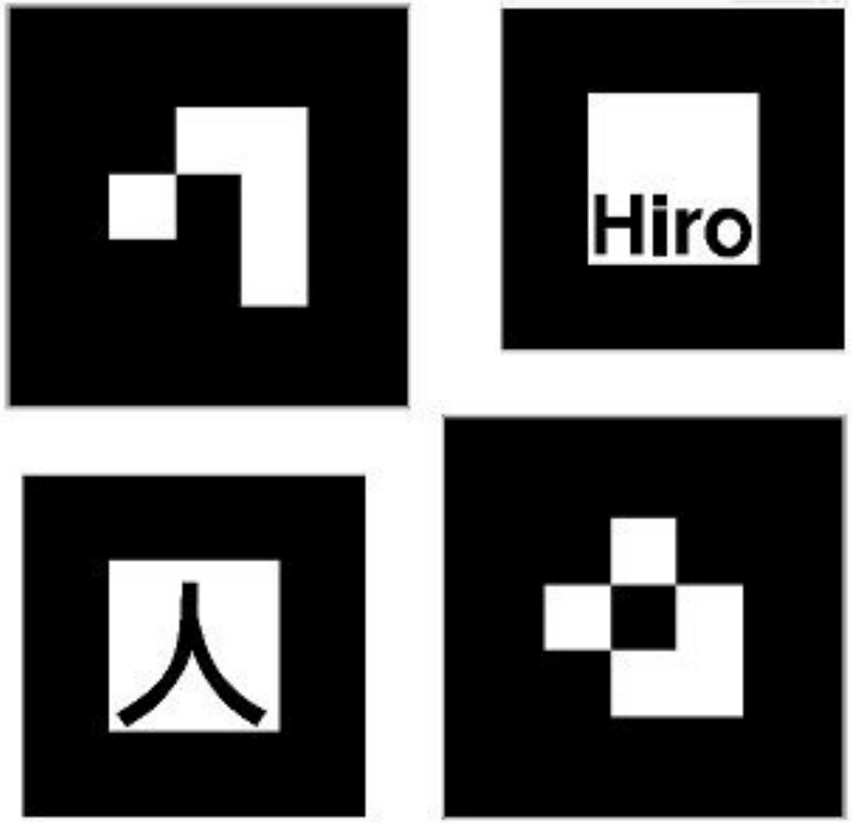
Anchors

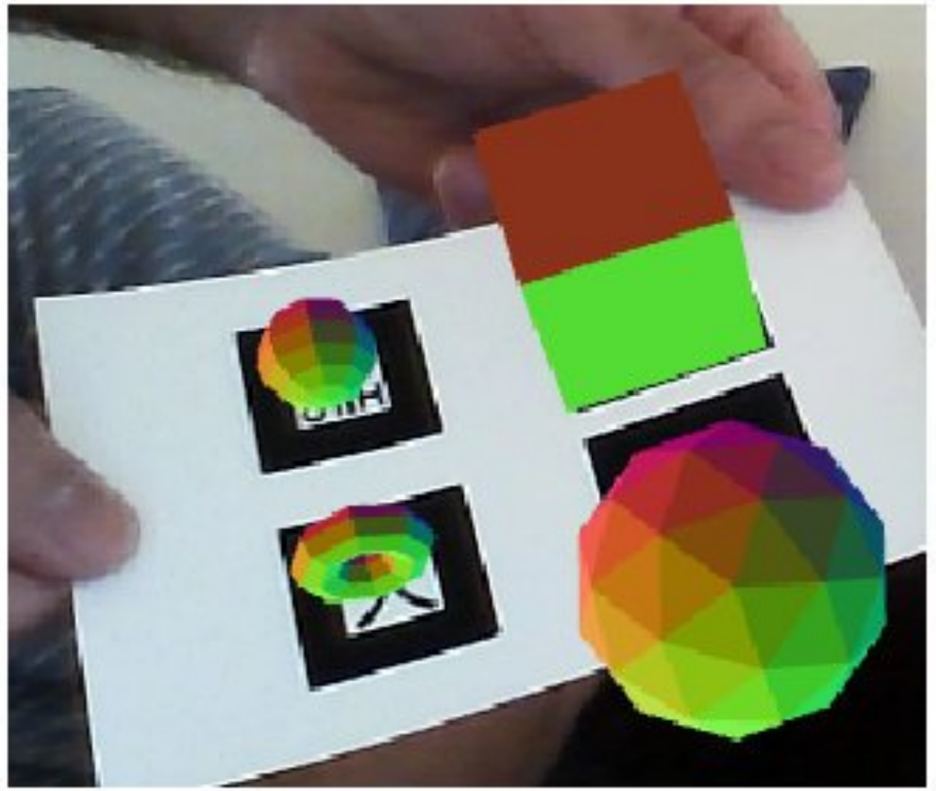
- Estimation of the pose of the device in the real world with the highest accuracy possible.
- Evolves over time as the system "learns" more about the real world - value is updating.
- Notifying the application about changes in the tracking estimation so the virtual element can correct its pose.

Markers

- Printed tags that the AR system can recognize when they are in the line of sight of the camera so their world scale pose can be calculated.
- Useful to trigger an experience or to share the same coordinate system between different devices, among others.
- Two types of markers: QRCodes and ARMarkers. Both allow to obtain their world pose but in the case of QRCodes, they can contain a string that is encoded in the marker itself. ARMakers have a unique identifier, a number between 0 and 255.

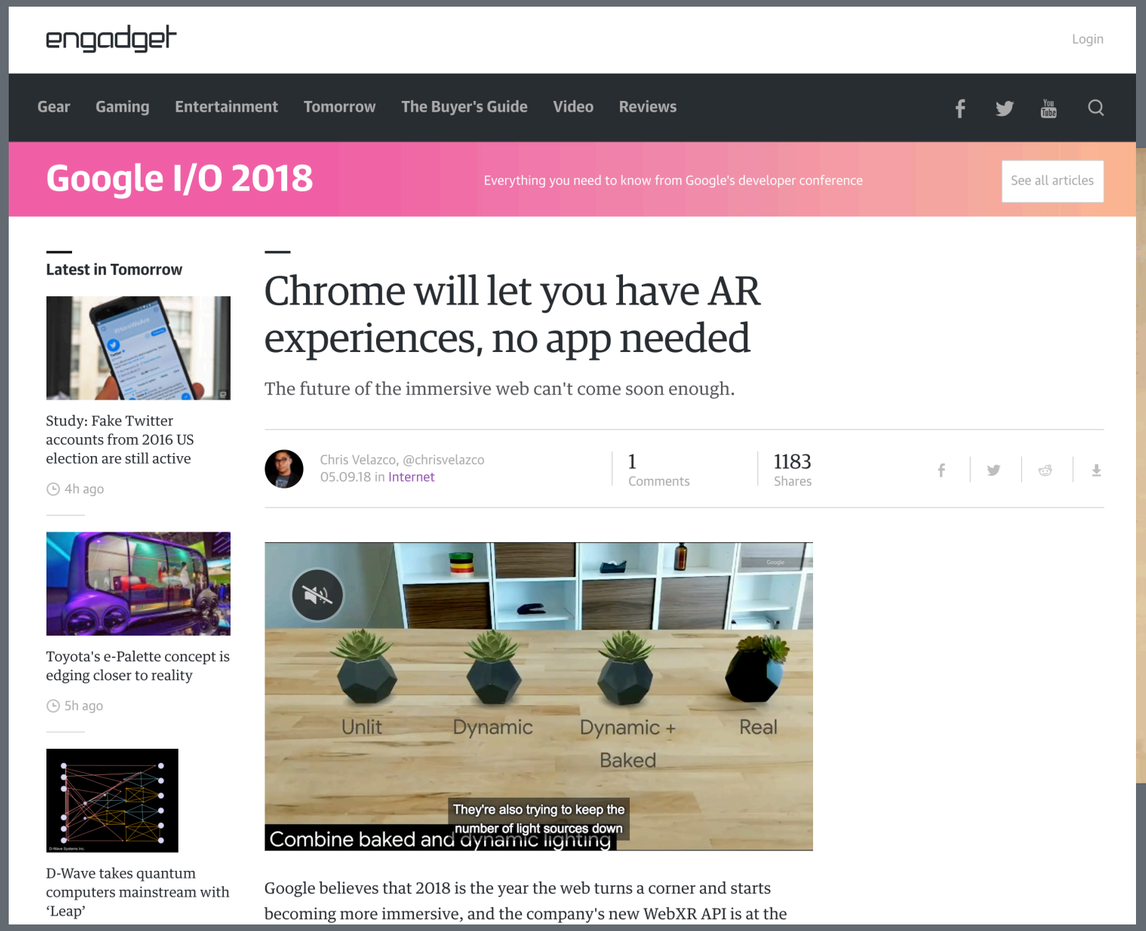
https://artoolkit.github.io/jsartoolkit5/examples/pattern_and_barcode_threejs.html





Global WebXR Hackathon: 2nd Place Winner ARs Attacks

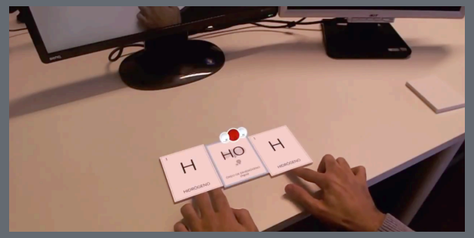
Read more here at Virtuleap


engadget
Login
Gear
Gaming
Entertainment
Tomorrow
The Buyer's Guide
Video
Reviews
Google I/O 2018
Everything you need to know from Google's developer conference
See all articles
Latest in Tomorrow
Study: Fake Twitter accounts from 2016 US election are still active
4h ago
Toyota's e-Palette concept is edging closer to reality
5h ago
D-Wave takes quantum computers mainstream with 'Leap'
Chrome will let you have AR experiences, no app needed
The future of the immersive web can't come soon enough.
Chris Velazco, @chrisvelazco
05.09.18 in Internet
1
Comments
1183
Shares
Unlit
Dynamic
Dynamic + Baked
Real
They're also trying to keep the number of light sources down
Combine baked and dynamic lighting
Google believes that 2018 is the year the web turns a corner and starts becoming more immersive, and the company's new WebXR API is at the

Read more


8TH WALL Web
apps.8thwall.com

Creative AR Projects that *could* be built in WebXR (instead of Unity&Vuforia)



Using Augmented Reality to teach chemistry lessons!

Controlling Hue lights and shooting them out with a bow and arrow

It's code time!

Custom Marker

Project
A-Frame AR "Hello World"
Building the logo with primitives
Animation component and interaction

A-Frame AR "Hello World"

```
<!DOCTYPE html>
<html>
  <head>
    <title>Hello World</title>
    <script src="https://aframe.io/releases/0.8.2/aframe.min.js"></script>
    <script src="https://jeromeetienne.github.io/AR.js/aframe/build/aframe-ar.js"> </script>
  </head>
  <body style="margin: 0px; overflow: hidden;">

    <a-scene embedded arjs>
      <a-marker preset="hiro">
        <a-box position="0 0.5 0" material="color: blue;">
        </a-box>
      </a-marker>
      <a-entity camera></a-entity>
    </a-scene>

  </body>
</html>
```

- github.com/roland-dubois/aframe-meetup-nyc
- Setup: Gulp Tutorial & Git Repo
- Marker: AR Marker
- Build: Logo AR

Didn't finish? Take the challenge home! Got stuck? Reach out!

@rolanddubois
rolanddubois.com