



Your Reality Here

Extended Reality and the Web

I'm Peter Gasston

@stopsatgreen

Creative Tech at rehab

What I'm going to talk about

The post-mobile
platform

The reasons

What's missing

The role of the Web

The post-mobile platform

VR

VIRTUAL REALITY

MR

MIXED REALITY

AR

AUGMENTED REALITY



Extended reality (XR)

DIGITAL WORLD
DIGITAL OBJECTS

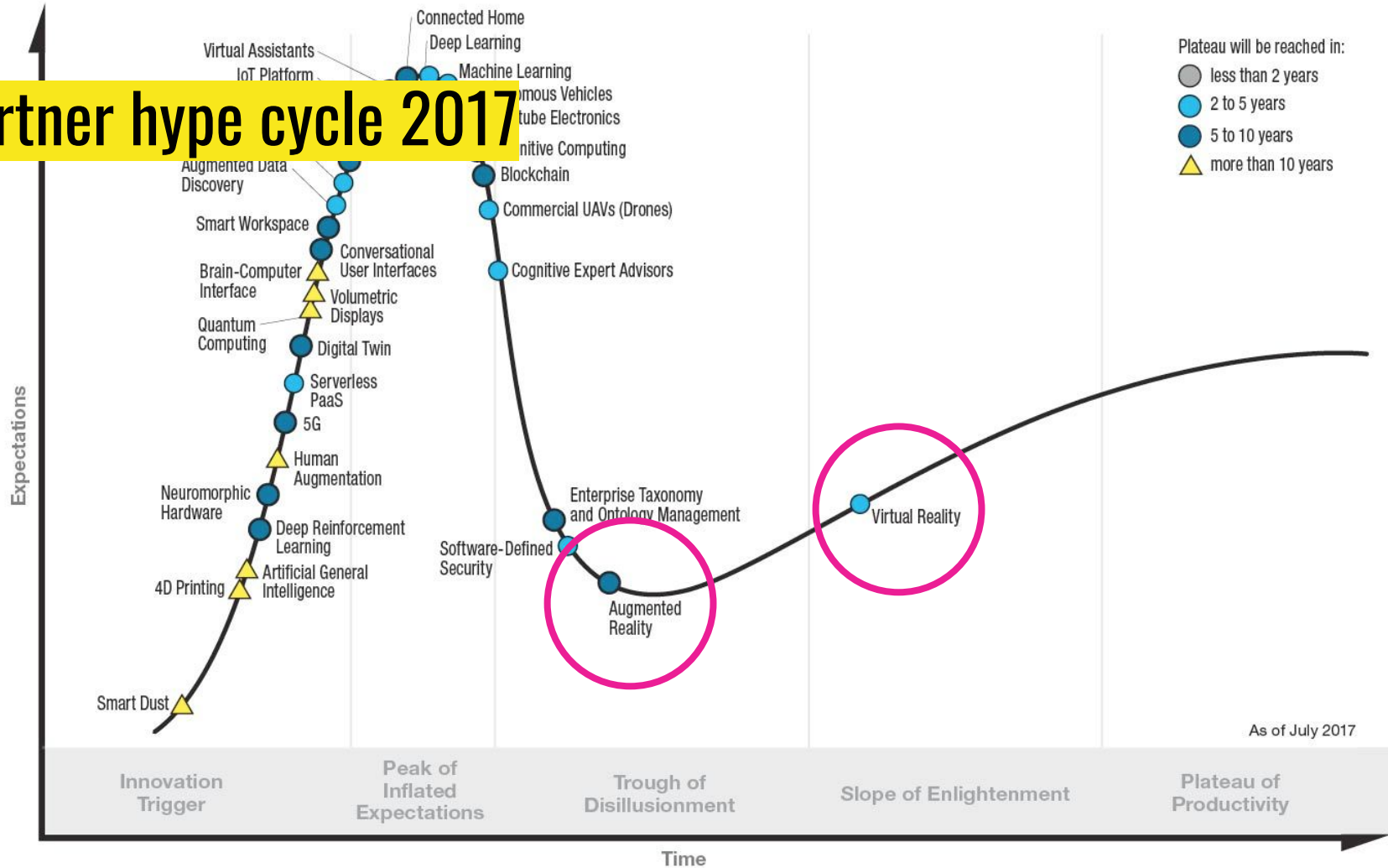
REAL WORLD
DIGITAL OBJECTS

REAL WORLD/OBJECTS
DIGITAL INFORMATION

XR will be the next platform.

Gartner hype cycle 2017

- Plateau will be reached in:
- less than 2 years
 - 2 to 5 years
 - 5 to 10 years
 - ▲ more than 10 years



Device Form Factors & Product Lifecycle

face computers
(AR/VR glasses, HMDs)



wrist computers
(smartwatches)
voice computers
(smart speakers)



hand computers
(smartphones, tablets)



desk computers
(desktops, laptops)



Emergent



Growth Market



Mature Market



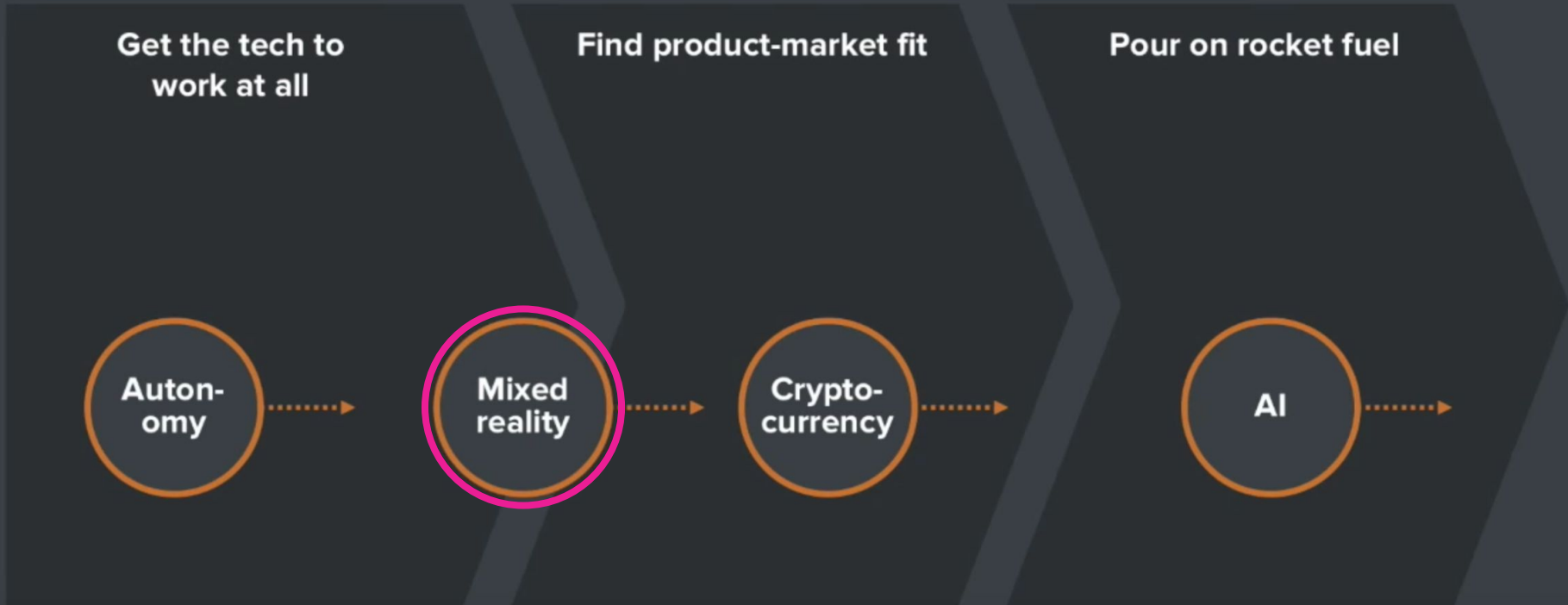
Declining Market

Many Players, still working out biz models

Double digit growth, Ends with consolidation

Slow Migration, Brand Allegiance

Four emerging S Curves to consider



The reasons

Why XR is the next platform

Because we're
told so

Because of
human nature

Because we have
the foundation

Because we're told so

“ One day, we believe this
kind of immersive,
augmented reality will
become part of daily life
for billions of people.”

—*Mark Zuckerberg*

“I regard [AR] as a big idea,
like the smartphone.”

—*Tim Cook*

Some of Apple's moves in XR

2013: Buy

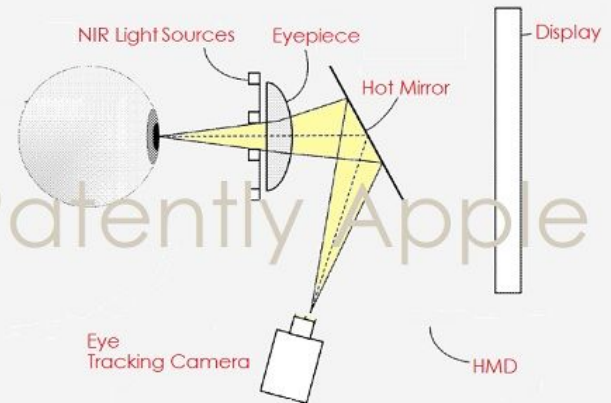
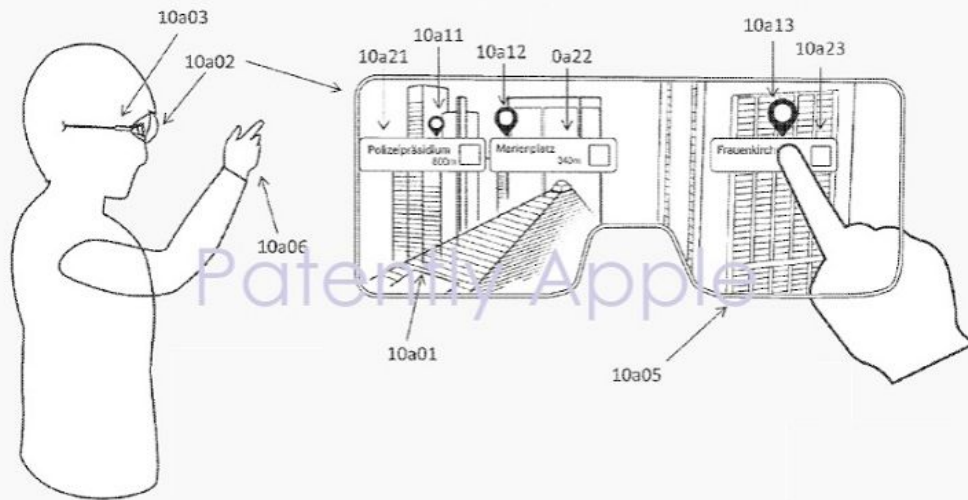
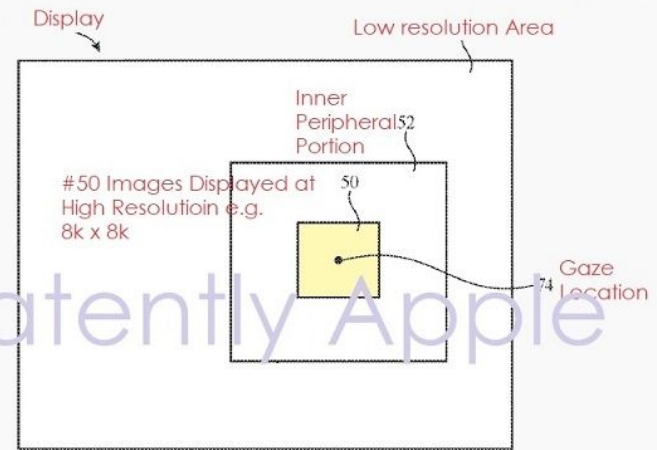
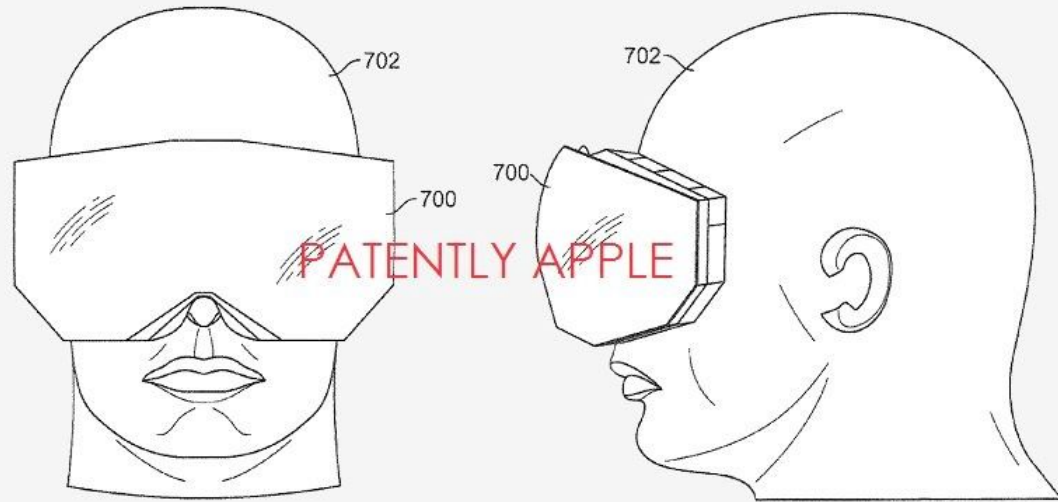
PrimeSense

2015: Buy Metaio

2016: Buy Flyby

2017: Buy VRVana

2017: Launch ARKit



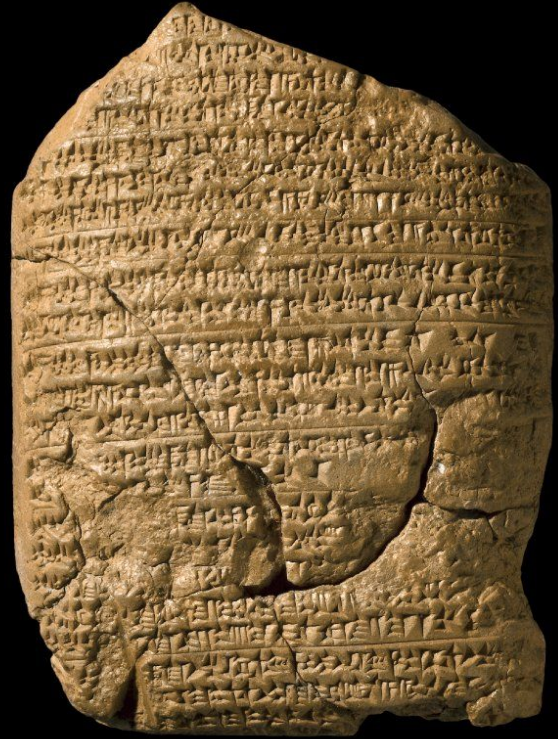
Because of human nature

XR meets two persistent
human desires: to know,
and to be tricked.

The desire to know

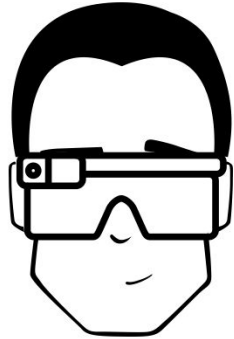
Knowledge is power.
Scientia potestas est.

Spoken language developed so that we could pass on knowledge; and written language so that we could record it.



What would augment reality?

“identify”



If I could see anything, what should I see?

Look at the world and tell me about it

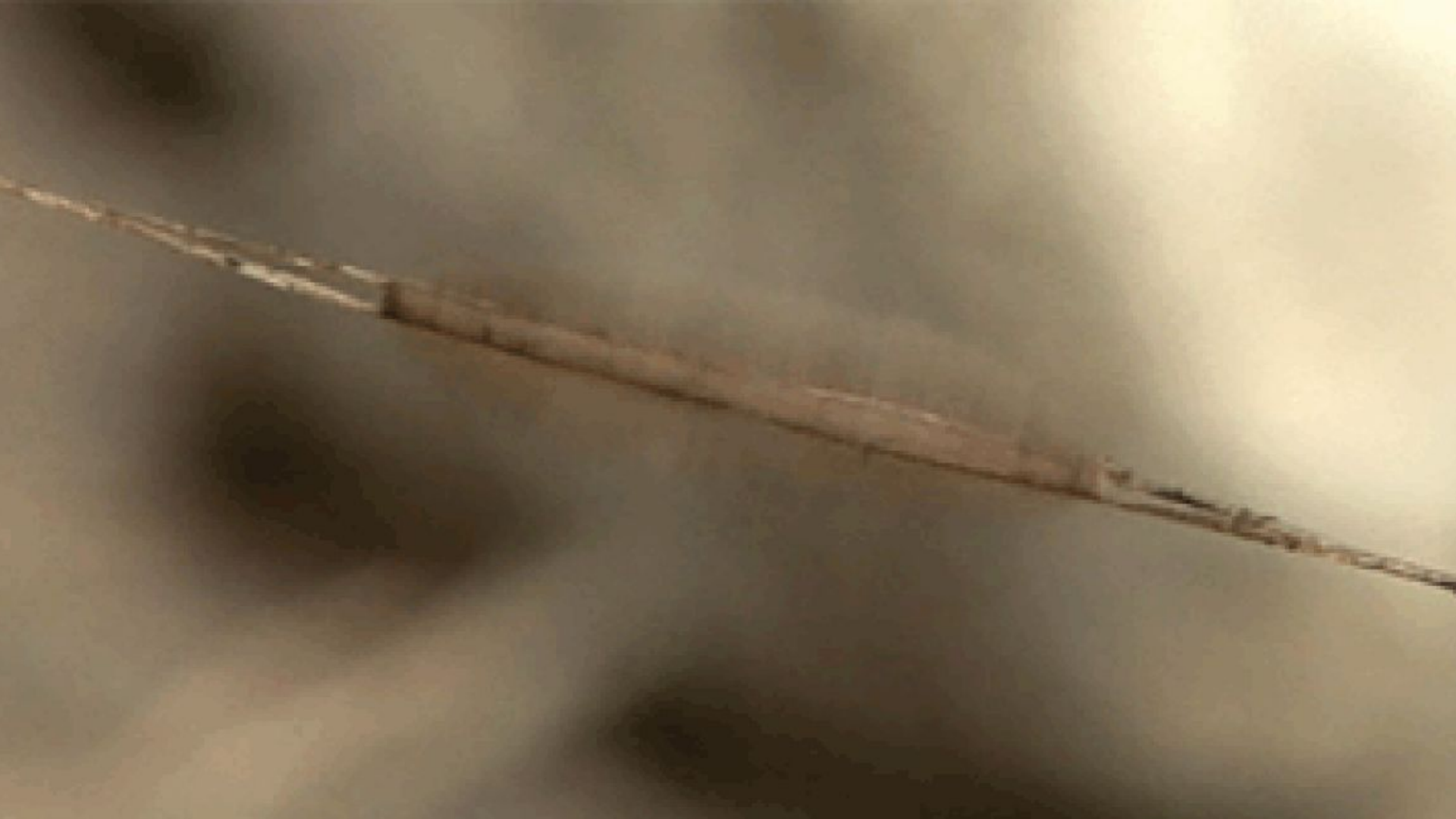
Who is this person?

Is this cheaper on Amazon?

Where did I leave that?

The desire to be tricked

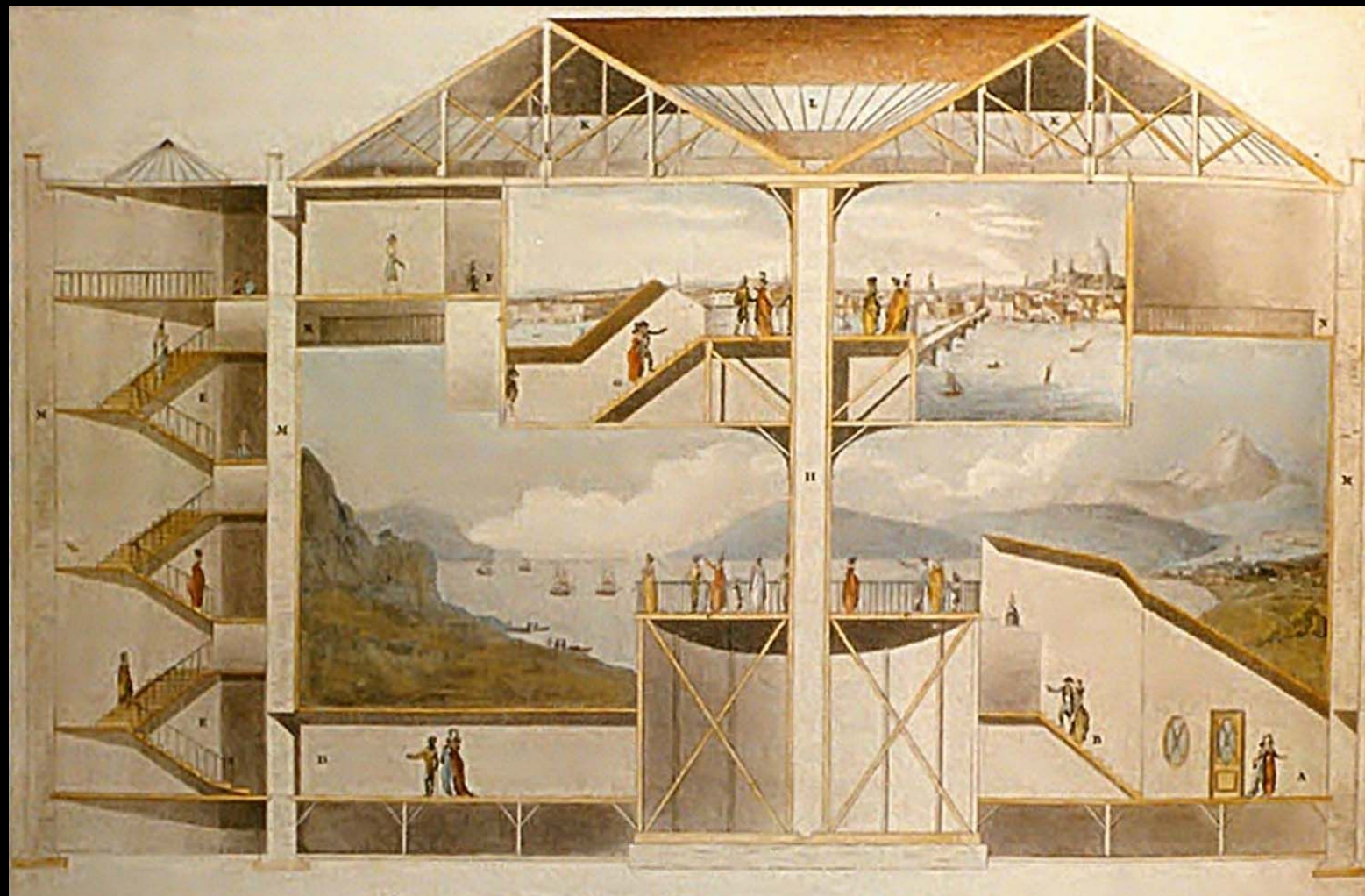






“Perspectival representation aimed to give viewers the illusion that they had been transported into geometrically coherent and psychologically convincing other worlds.”

— *Margaret Wertheim*







If I could see anything, what should I see?

Look at the world and tell me about it

Who is this person?

Is this cheaper on Amazon?

Where did I leave that?

Add something to the world

Make every wall a screen

Put Minecraft on the table

Show me the recipe

Because we have the foundation

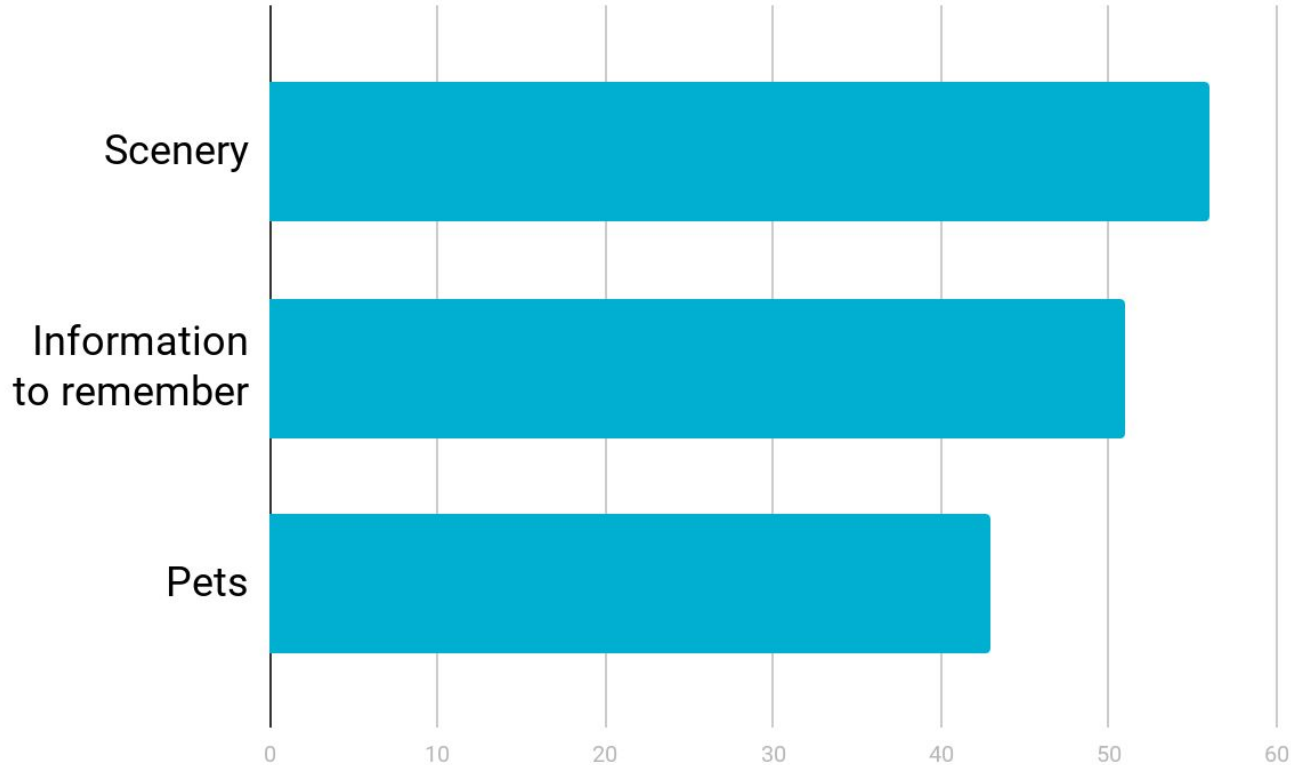


“Mixed reality is
a **display** problem,
a **sensor** problem and
a **decision** problem.”

— *Benedict Evans*

The sensor

Top three most-photographed subjects



Source:
Creative Strategies, Inc Smartphone
Photography Survey. n=965.
Audience: Mainstream.

“We’re going from
computers with cameras,
that take photos, to
computers with eyes,
that can see.”

— *Benedict Evans*



Google Lens preview

Prospect Of Whitby Text selection

Prospect Of Whitby 4.3 ★★★★★ 791 Reviews · \$\$ Pub Open · Closes 10:30PM



The Prospect of Whitby is a historic public house on the banks of the Thames at Wapping in the London Borough of Tower Hamlets. It lays claim to being the site of the oldest riverside tavern, dating from around 1520. Wikipedia



Save



- + flip flop flop flipping havaianas sa



Original Vintage Thong. Yes, they were called thongs.



(@co.catinca) auf Instagram: „#flipflops“



IT'S A PAWTY!

“Information I’d never have had unless I’d asked whoever I was with to describe it to me. Having the ability to do that independently is really quite remarkable.”

— *Léonie Watson*

Recognize friends.
Describe faces and emotions



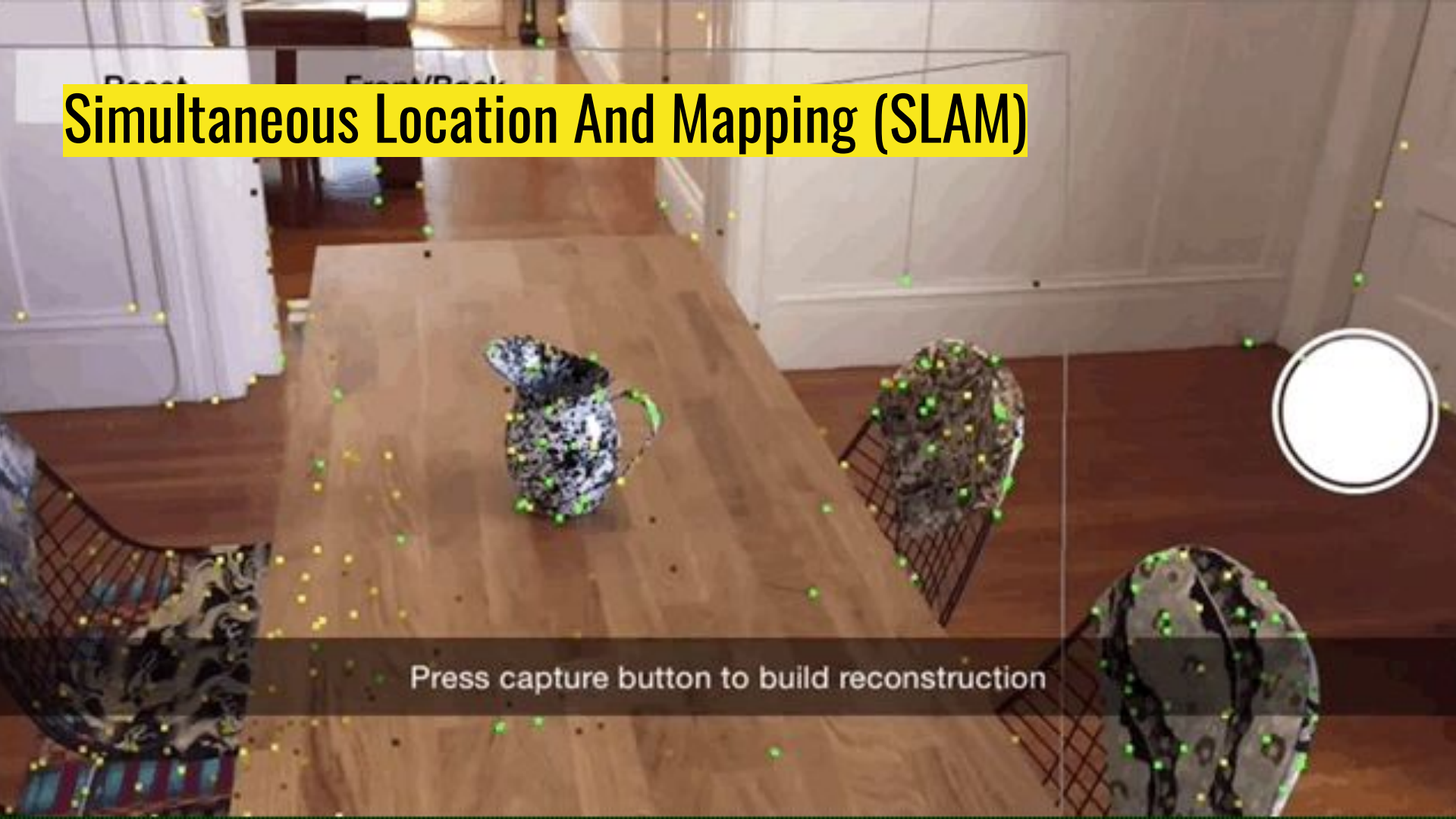
34 year old male wearing glasses looking happy.

 Save Photo

 Share

Computer vision has
become commoditised in
a very short time.

Simultaneous Location And Mapping (SLAM)



Press capture button to build reconstruction

The display

Video see-through (VST)



Optical see-through (OST)

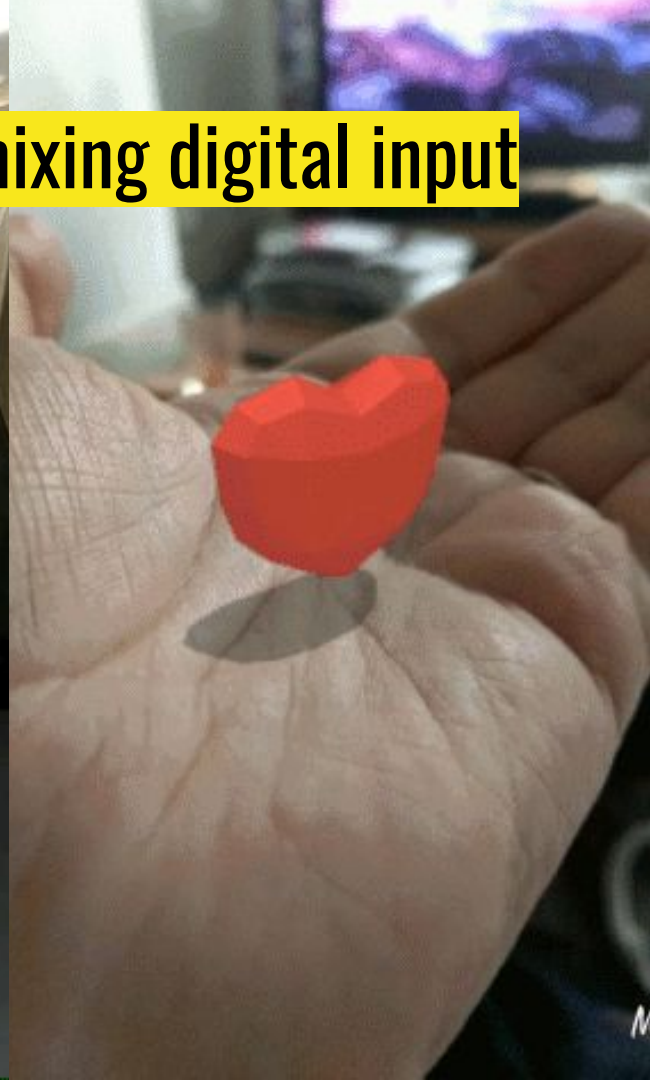


Phone-based AR is a social impediment and can be uncomfortable for more than short bursts.

“ Having your hands free to manipulate, hold, touch or help while you’re taking a snap... greatly increases the sense of ‘place’ that you get out of it.”

— *Matthew Panzarino*

Digital things in physical spaces, and remixing digital input



Digital things sharing space with physical things



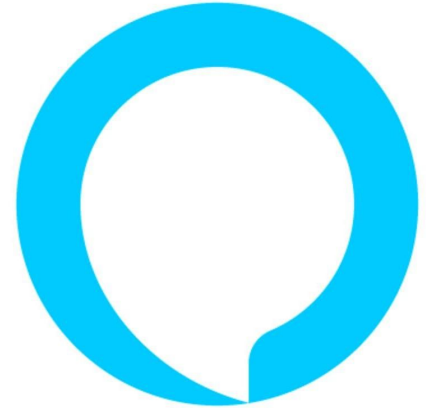
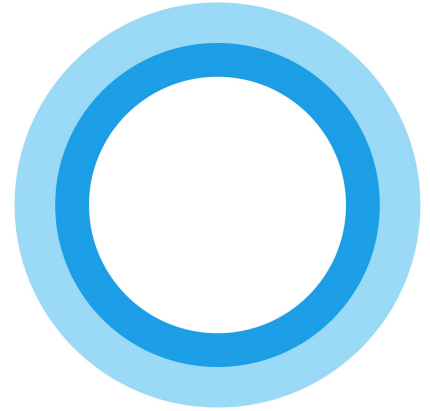
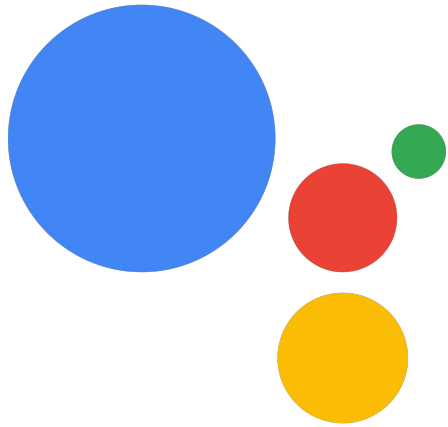
Shot directly through Magic Leap technology on October 14, 2015.
No special effects or compositing were used in the creation of these videos.

The decision-maker

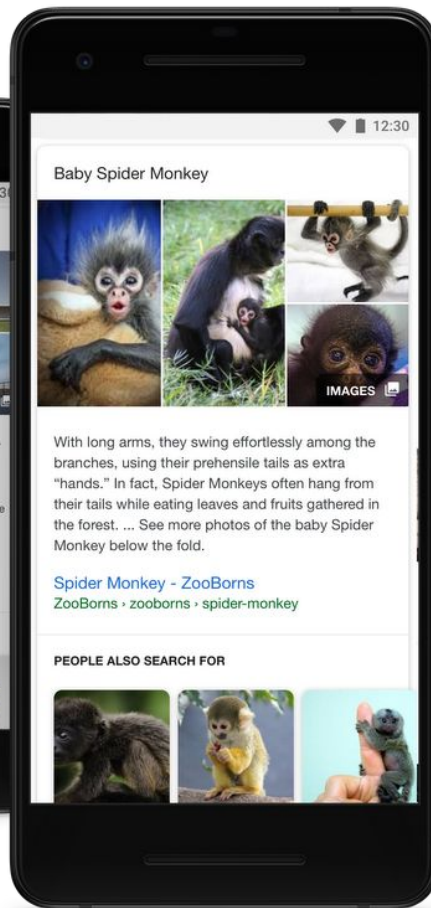
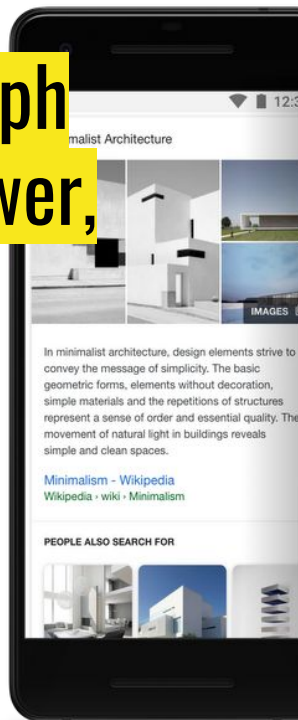
Hyperreality



In MR, what you **don't** see
could be as important as
what you see.



Google's Knowledge Graph aims to give you an answer, not a page of links.



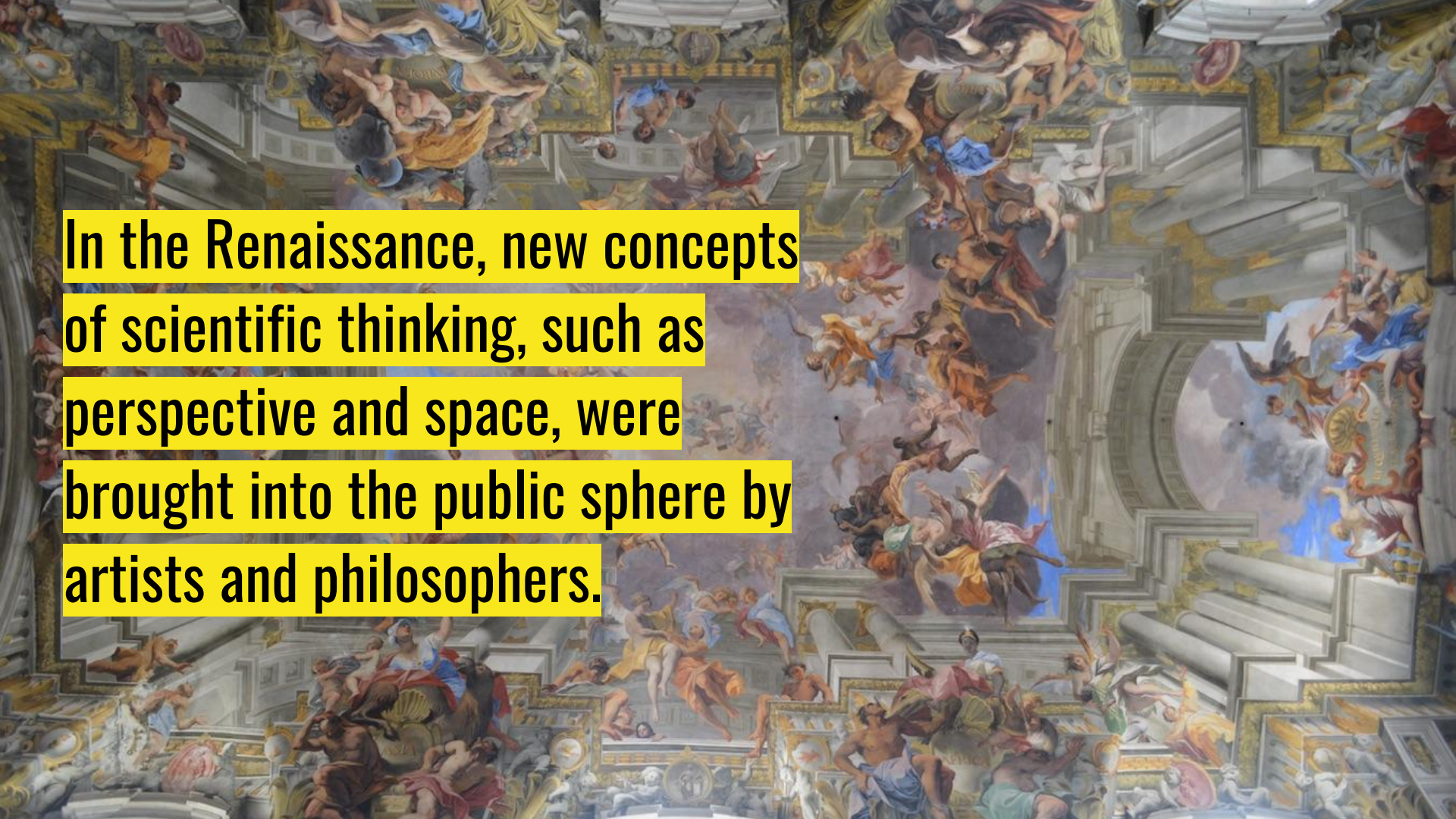
“An *intent* represents a mapping between what a user says and what action should be taken by your software.”



What's missing

Diverse voices

A platform that's closely integrated with the real world should reflect real world values—not just those of Silicon Valley.



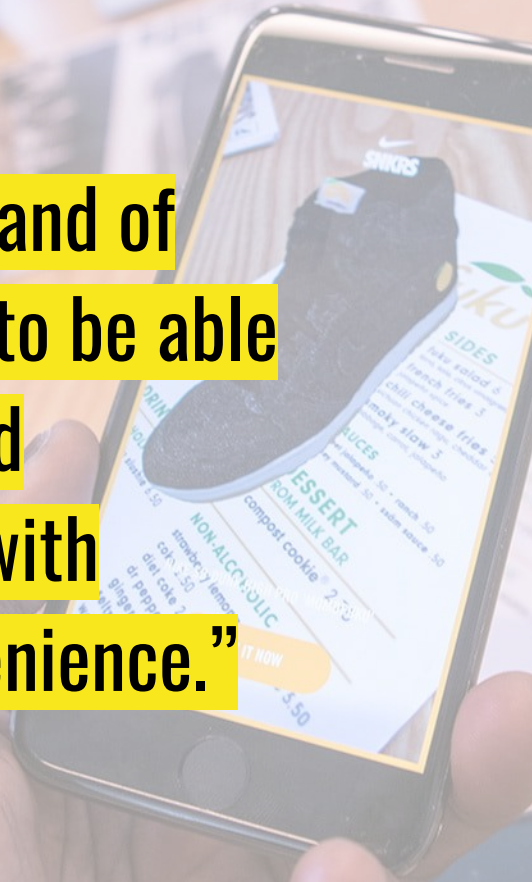
In the Renaissance, new concepts of scientific thinking, such as perspective and space, were brought into the public sphere by artists and philosophers.

A shared space

“AR has the ability to re-enable scarcity. Many AR experiences will be tied to the location in which you experience it.”

— *Matt Miesniks*

“The future of Nike and of sneaker culture is to be able to seamlessly blend real-world charm with digital world convenience.”



“The biggest thing that’s
been missing for the
entire last decade was our
physical embodied space.”

— *Anjney Midha*

Reset
SLAM

Front/Back



Press capture button to build reconstruction

“The AR Cloud is a shared [digital] memory of the physical world. It’s the single most important software infrastructure in computing.”

— *Ori Inbar*

Google Maps for gaming + virtual positioning system (VPS)



How do we stop massive
platforms dominating the
AR Cloud in the same way
they dominate the Web?

The role of the Web

“The Web has transformed
the world, but stands
aloof from it.”

— *Mark Pesce*

**Mixed Reality Service (MRS)
adds a missing metadata
layer to the real world,
adding links in space.**



53.796852, -1.543991

63.0

false

//alldayhey.com/

Comptoir Libanais
Modern cinema with...

er Leeds

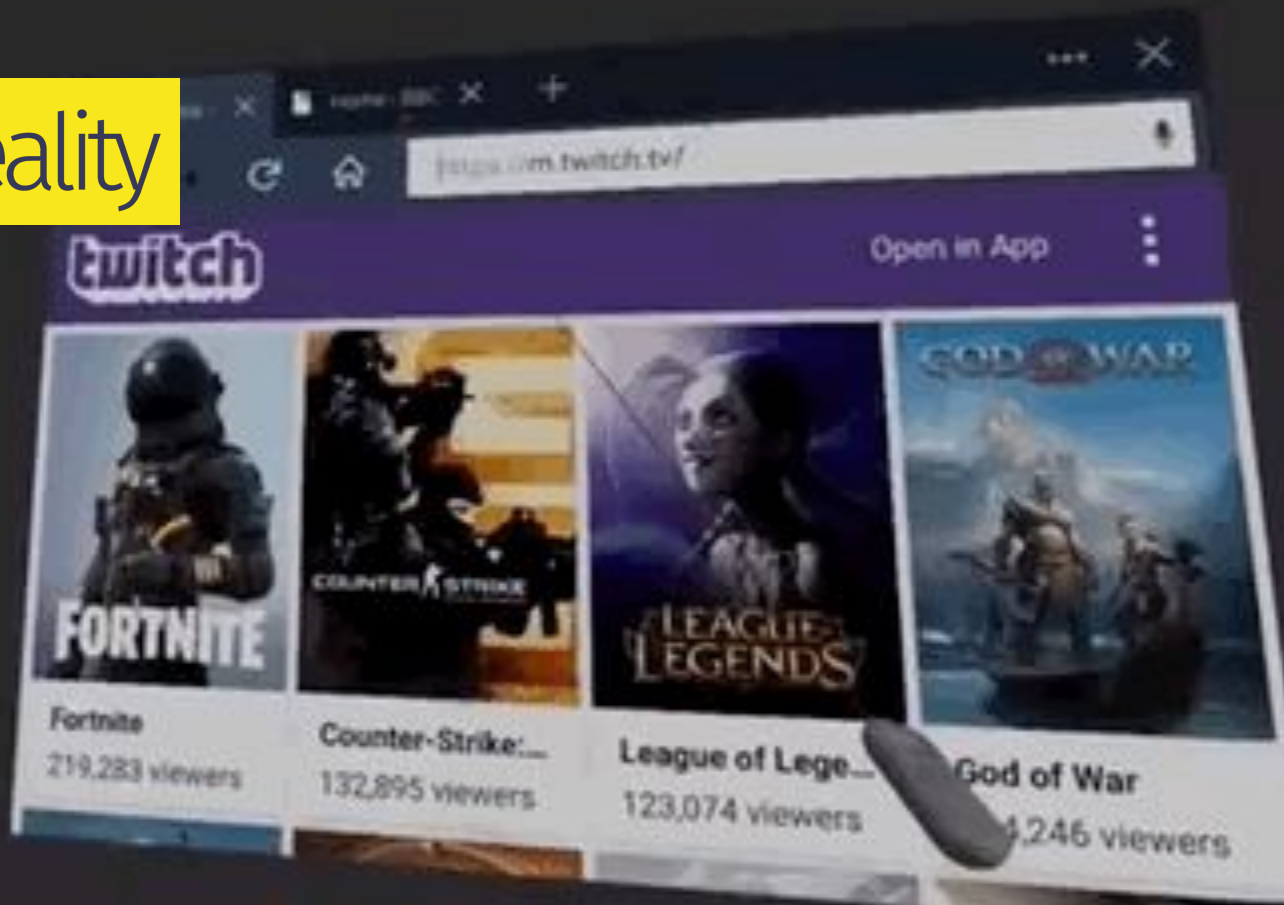
Whitlock's Ale House

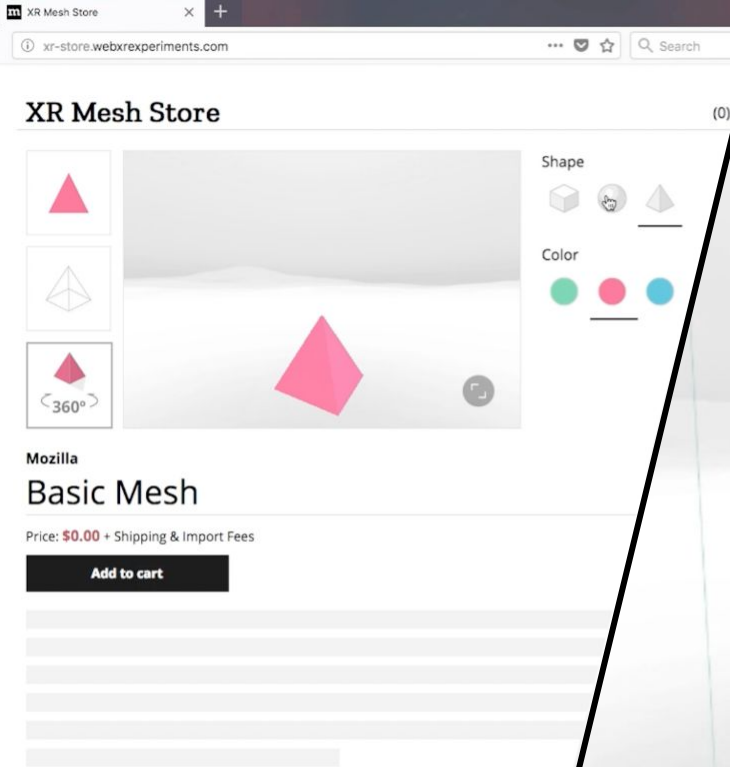
Hololens App Model



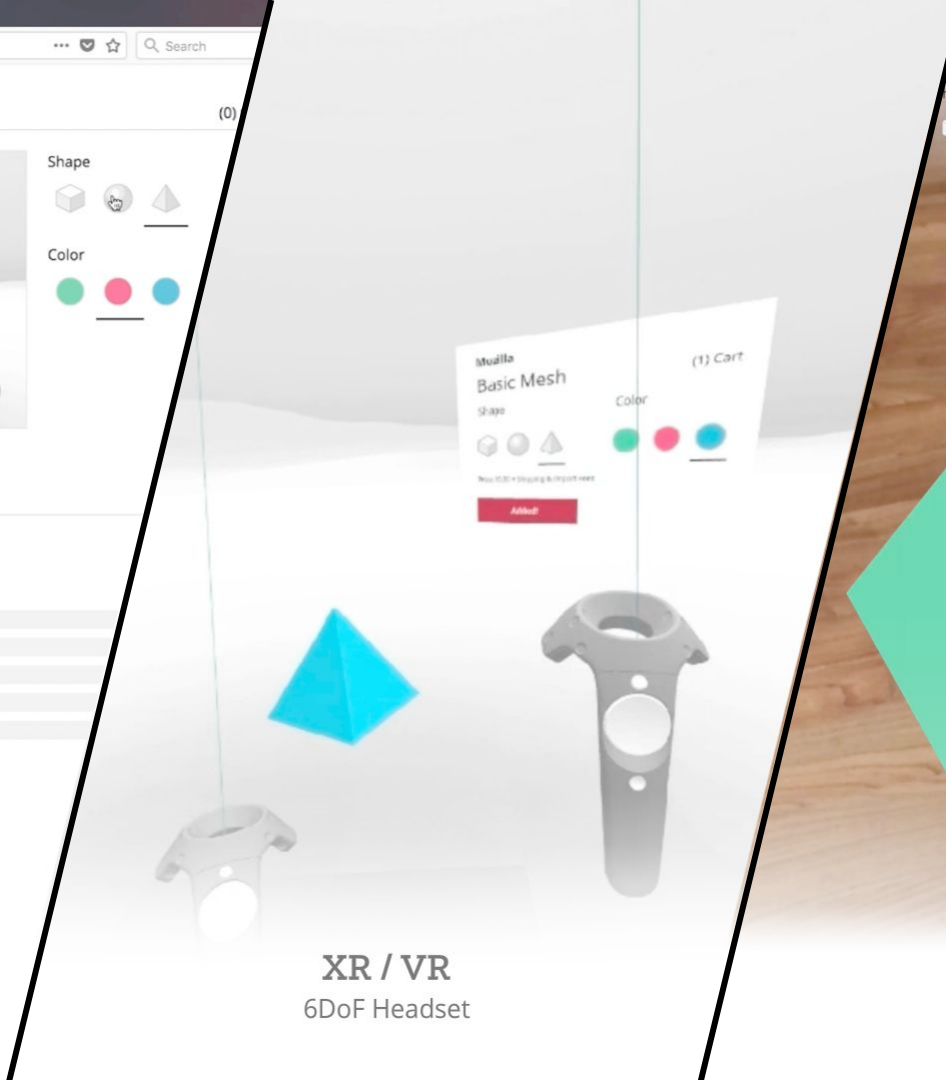


Firefox Reality

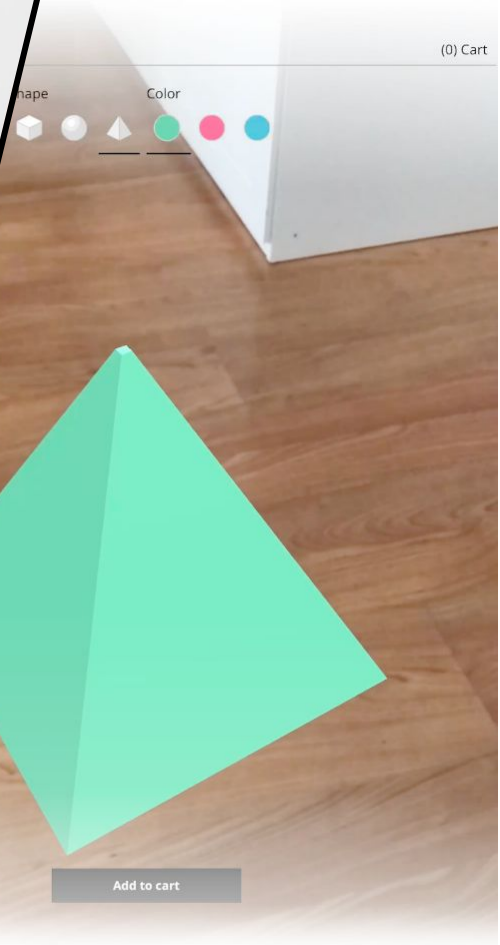




Non-XR / Flat Displays
Desktop / Mobile

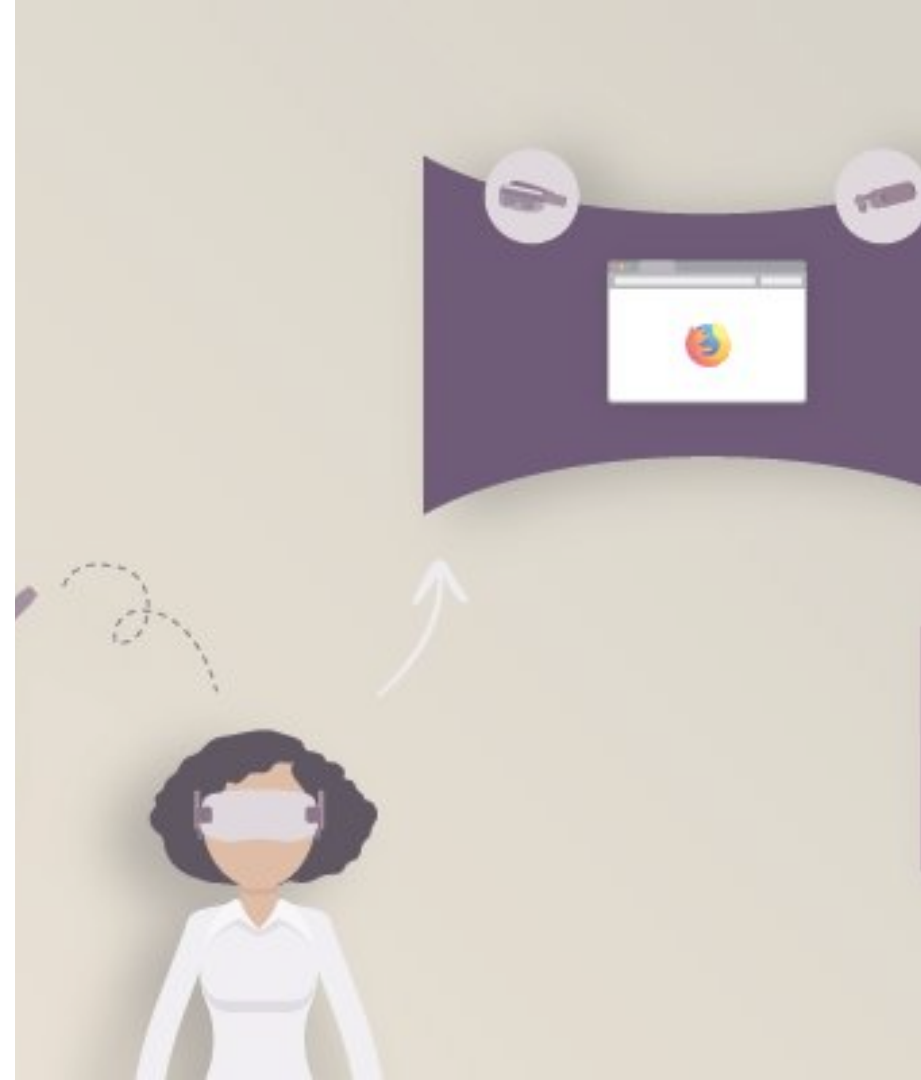


XR / VR
6DoF Headset



XR / AR
Handheld AR

WebXR is aimed at letting you create VR/AR experiences that are embedded in the web.





Pull the Web Out of the Screen

Magic Leap One allows web developers to optimize for content extraction and spatial browsing, enabling new ways to shop and explore with 3D objects.



Article (Google prototype)

Contents

Requirements

Theories of design

Countdown technologies

Models of significance

Emerging technologies

in fiction

See also

References

Bibliography

External links

A **space suit** is a garment worn to keep a human alive in the harsh environment of outer space, vacuum and temperature extremes. Space suits are often worn inside spacecraft as a safety precaution in case of loss of cabin pressure, and are necessary for extravehicular activity (EVA), work done outside spacecraft.

Space suits have been worn for such work in Earth orbit, on the surface of the Moon, and en route back to Earth from the Moon. Modern space suits augment the basic pressure garment with a complex system of equipment and environmental systems designed to keep the wearer comfortable, and to minimize the effort required to bend the limbs, resisting a soft pressure garment's natural tendency to stiffen against the vacuum. A self-contained oxygen supply and environmental control system is frequently employed to allow complete freedom of movement, independent of the spacecraft.

Three types of spacesuits exist for different purposes: IVA (intravehicular activity), EVA (extravehicular activity), and IEXA (intra/extravehicular activity). IVA suits are meant to be worn inside a pressurized spacecraft, and



Apollo 11, second suit worn by astronaut Buzz Aldrin on Apollo 11





Jurassic World shared a link.



20 February · 🌐

Facebook 3D post

Get a closer look at Blue — in 3D. Add her to your photo or video with the JurassicWorld effect on your Facebook camera here:
<https://unvrs.al/JWFBCam>



 Like

 Comment



We have an opportunity to
more fundamentally
reconsider what we want
the Web to be.

“ We expect Stories are on track to overtake posts in Feed as the most common way that people share across all social apps.”

— *Mark Zuckerberg*

The rise of Stories



What happens in
your brain when
you listen to
music?

Mic | Jan. 19, 2018

emmatangerine 10m



Send Message



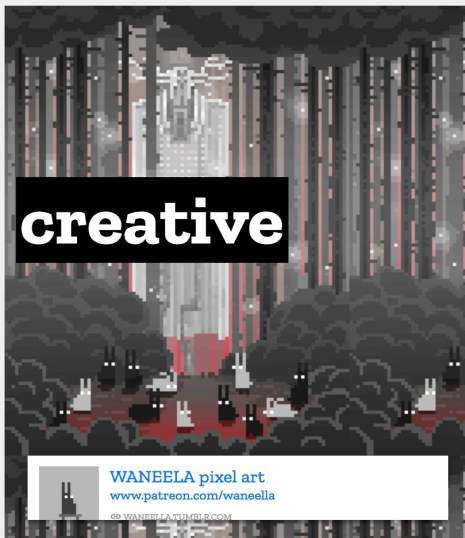
NASA Astronauts @NASA_Astronauts
Fri 8pm ET, @NASA and @NatGeoChannel broadcast
live from #ISS w/ @AstroRM, @Astro_Wakata.

Hopscotch (concept)—fluffy-shanks.glitch.me

To work for everyone,
today's web must be...



bite-sized



“ Our current idea of what qualifies as a site, and the value (or lack thereof) that this implies, may be holding the web back.”


— *Stephanie Rieger*

A richer, more shareable Web

“There’s a disconnect between the Web we have — which is largely text — and the Web we need, which is richly visualised.

“ Our world is not text, and the Web, as it becomes more a part of this world, must become more like the world.”

— *Mark Pesce*

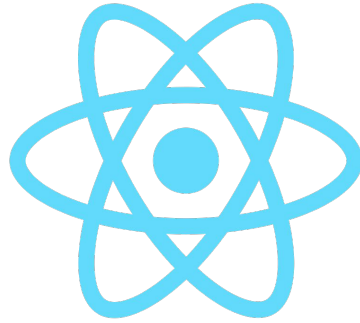
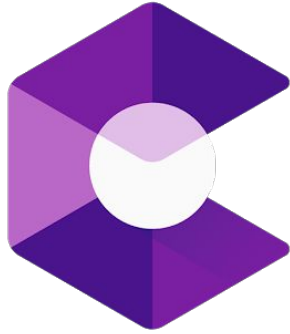
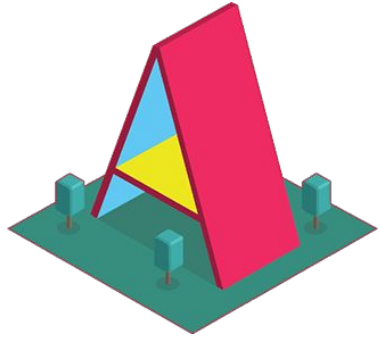


**“We use ‘X’ not as part of
an acronym but as an
algebraic variable to indicate
‘Your Reality Here’.”**

Let's make the Web
be the X in XR.

The End

How to experiment with XR on the Web now



WebXR

AR.js, three.ar.js