Making Virtual Reality a Reality

Surviving the ‘hype cycle’ to achieve real societal benefit.


Game
Changer?
Fad?

A Timeline of VR

A Timeline of VR

1939 - View-Master 3D Stereoscopic viewer

1939

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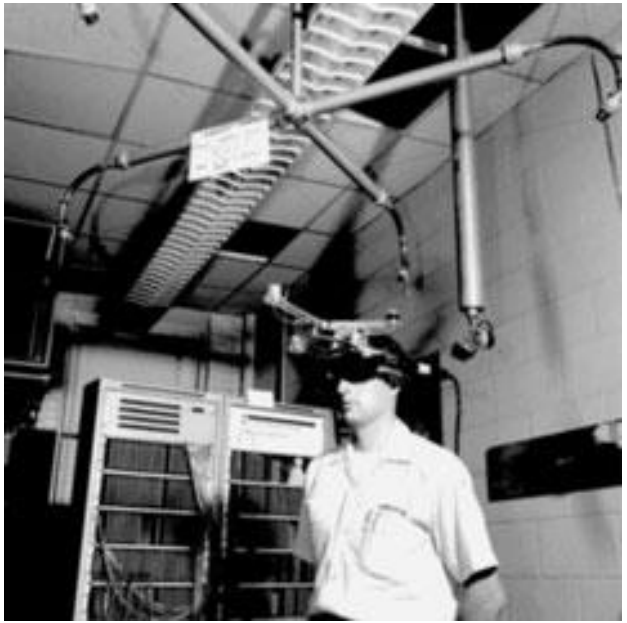
1968 - Evans & Sutherland create first head-mounted display (HMD)

1968



A Timeline of VR

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1988

A Timeline of VR

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1992 - Forte VFX1

1992

260 x 230 LCD display
256 colours
Required computer with 16MHz 386 processor running MS-DOS 5

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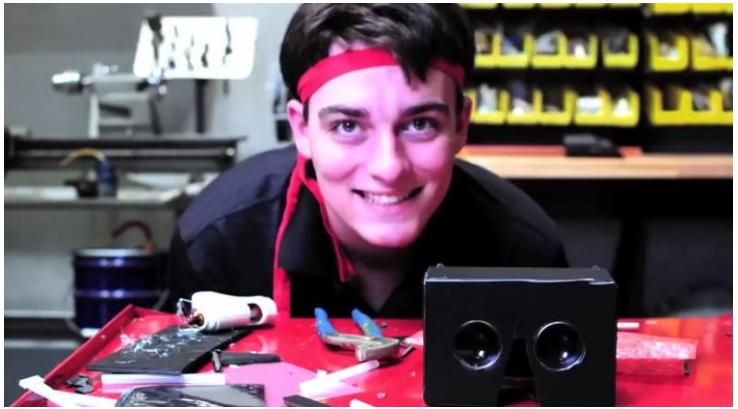

Palmer Luckey. 20 years old in 2012.

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Modern Day ViewMaster - with Video

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Phone used for processing and display.

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2016 - Oculus & HTC Vive consumer headset products released

2016

1080 x 1200 OLED display
Millions of colours
Requires computer with 3.2 GHz processor (200x faster than VFX1)

A Timeline of VR

2018

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2015 - Oculus Gear released

2016 - Oculus / Vive consumer headset products released

2018 - Oculus Go standalone headset released

1280 x 1440 display
Fully self-contained
3DOF

A Timeline of VR

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2019 - Oculus Santa Cruz

2019

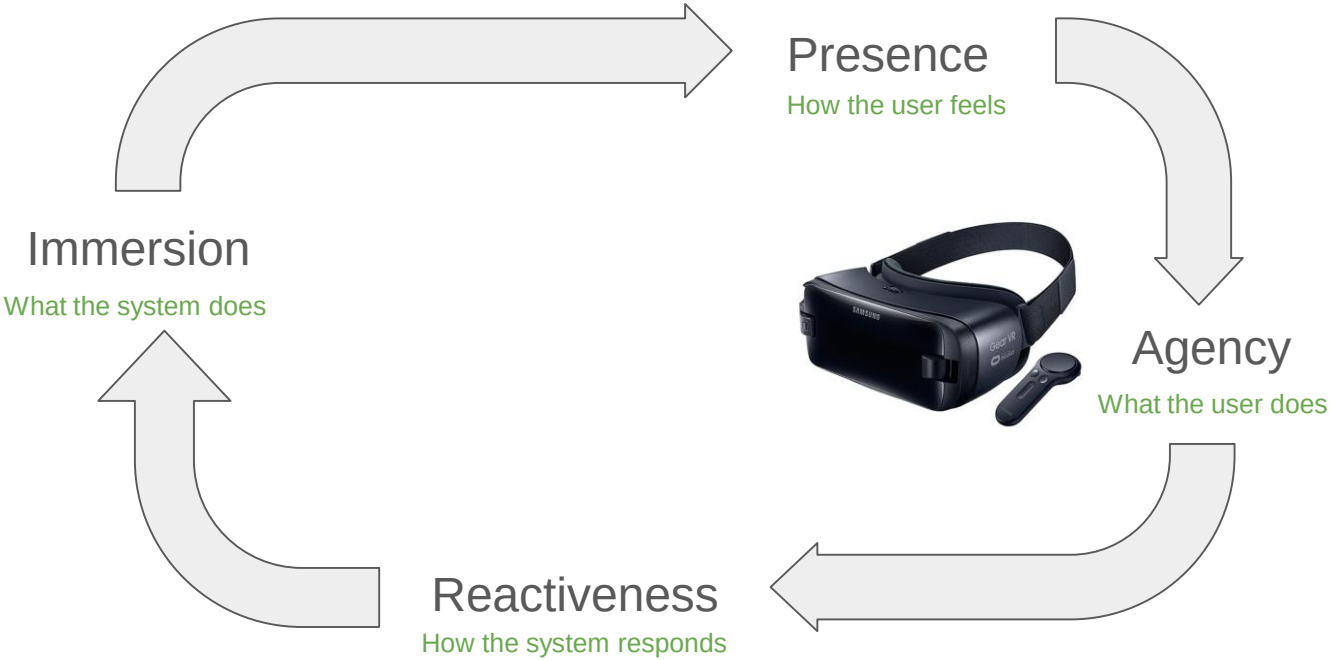
1440 x 1600 display
Fully self-contained
6DOF via ‘inside-out tracking’

Our mission is to give people the power to experience anything.

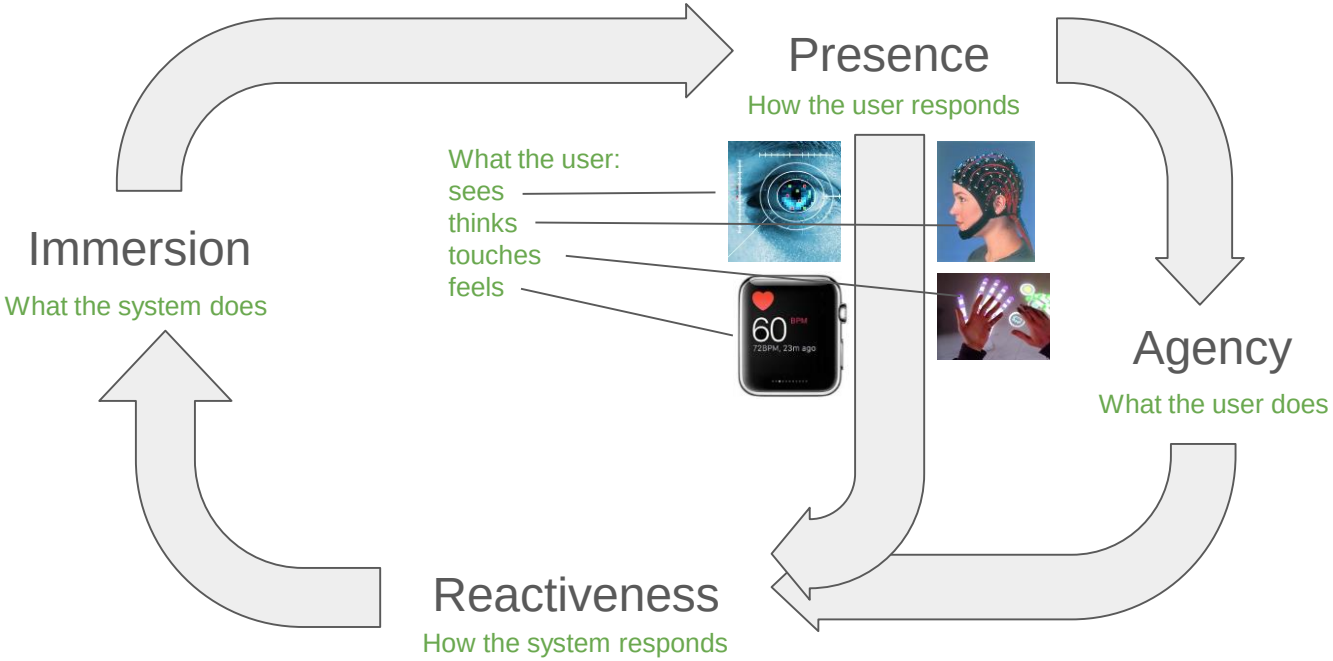
Even if you don’t have the ability to travel somewhere, or to be with someone in person, the goal is to help build a medium that will give you the ability to do all of these things you might not otherwise be able to do.

- Mark Zuckerberg

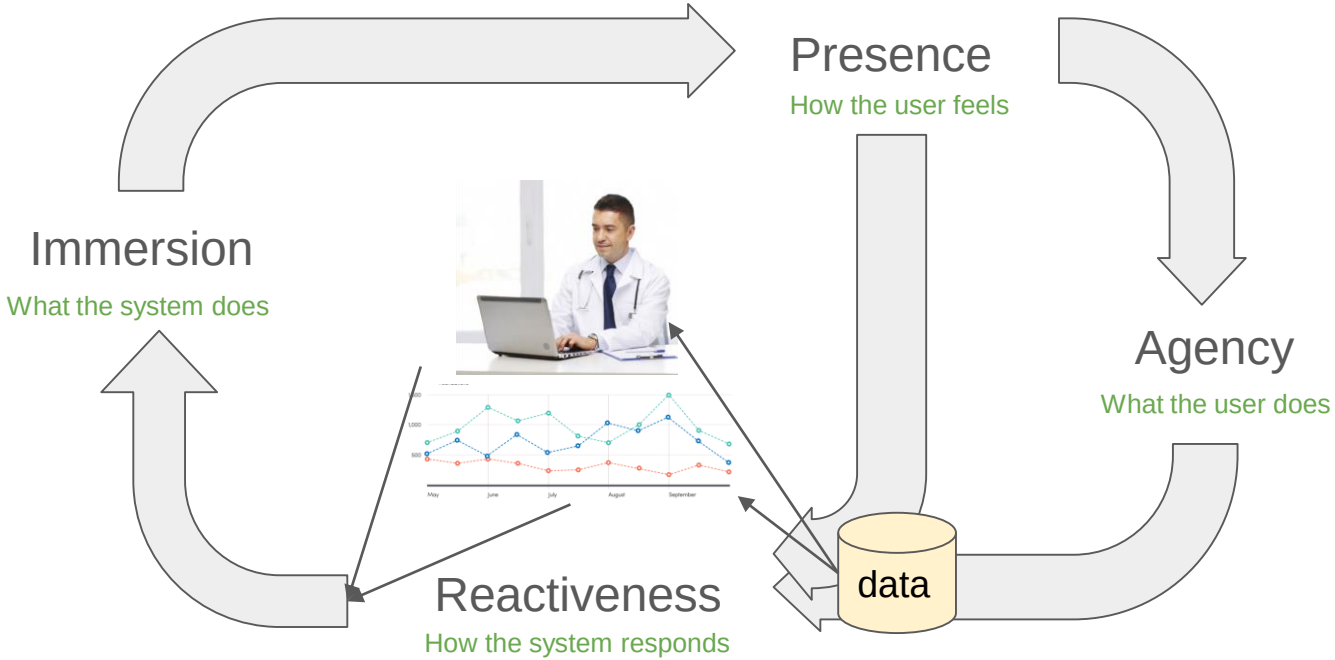
Principles of VR



Principles of VR - Advanced



Principles of VR - Advanced +



Current Therapeutic Applications of VR

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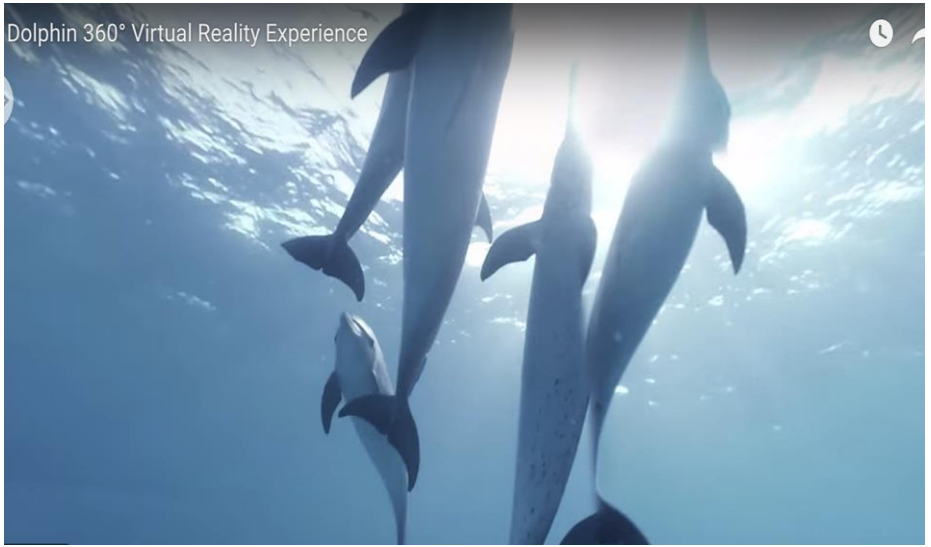
- Phobias and PTSD

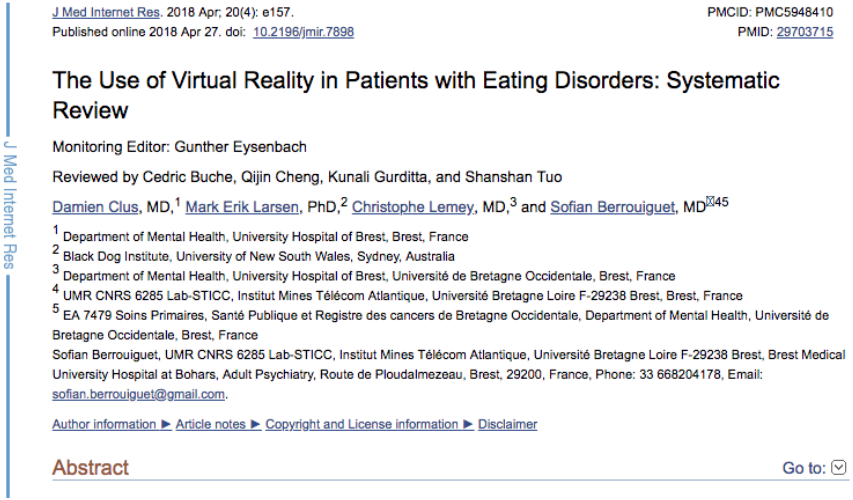
Current Therapeutic Applications of VR

- Phobias and PTSD
- Depression and anxiety



Current Therapeutic Applications of VR

- Phobias and PTSD
- Depression and anxiety
- Eating disorders / body dysmorphia



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PMCID: PMC5948410
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The Use of Virtual Reality in Patients with Eating Disorders: Systematic Review

Monitoring Editor: Gunther Eysenbach

Reviewed by Cedric Buche, Qijin Cheng, Kunali Gurditta, and Shanshan Tuo

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Abstract

Go to:

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  - Reminiscence Therapy
  - Mood calming
  - Carer respite

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- Remobilisation
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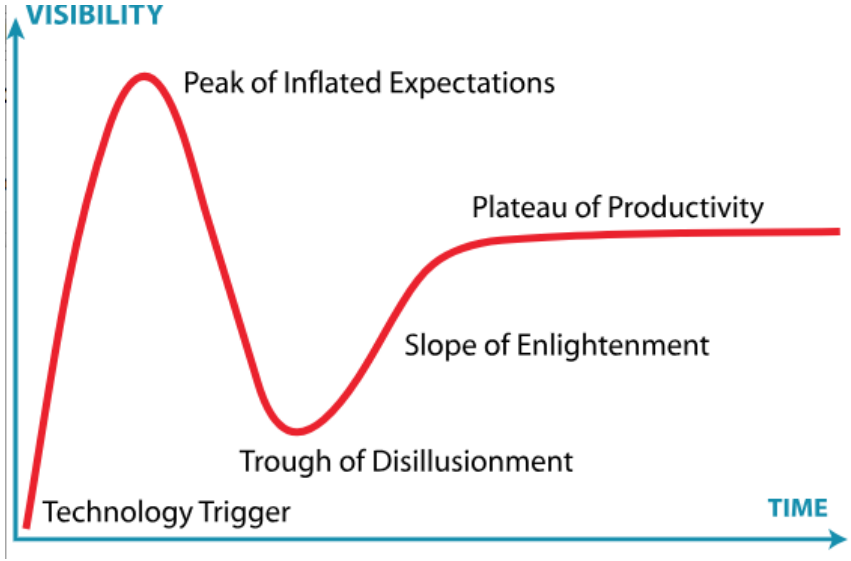
- Chronic Pain
- Social isolation
- Dementia

Lot of promise, 

Emerging clinical evidence 

Navigating the hype cycle



Expect a wave of VR salesmen

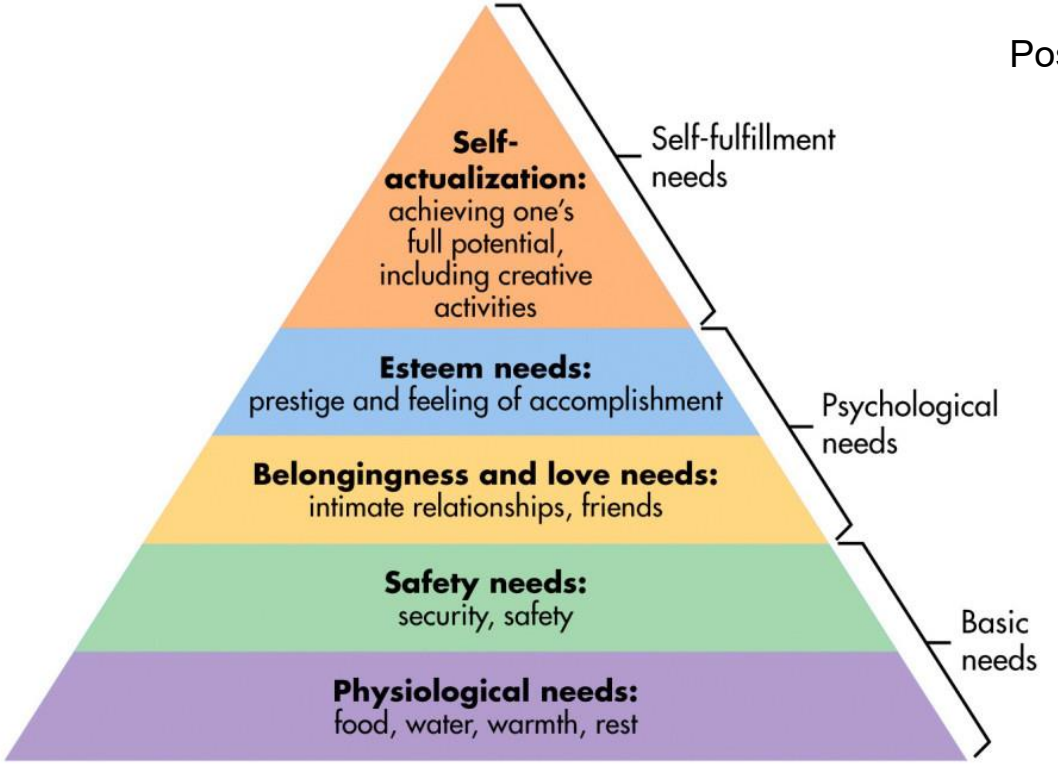
What is novelty, what is real?
Tech-led vs needs driven
(push vs pull)

How to pick the winners?

Where to invest?

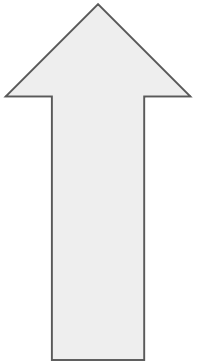
When to invest?

A return to First Principles



Hierarchy of Needs (Maslow)

Positive ageing is “Being younger for longer”



Occupation as Therapy

Personalised Activities

Occupation as Therapy

Bucket List

Occupation as Therapy

Reminiscence Therapy

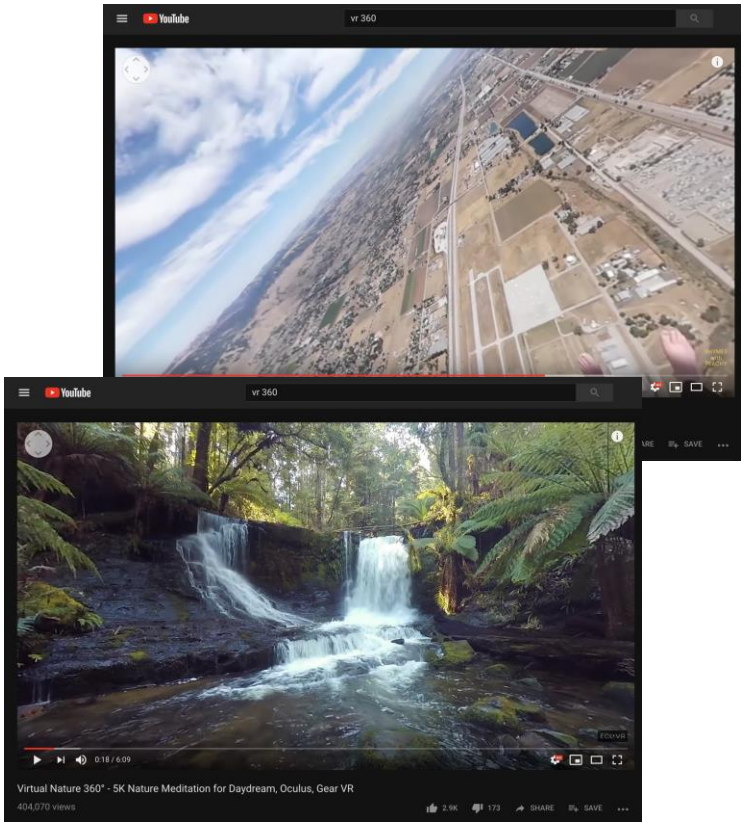
Social Connection

The Virtual Tour Bus

VR Technology Trends

VR Technology Trends

- YouTube VR
- Facial Tracking
- Full Body Tracking
- Avatars
- Physical World Mapping
- Locomotion
- Brain Interface
- Controllers & Haptics



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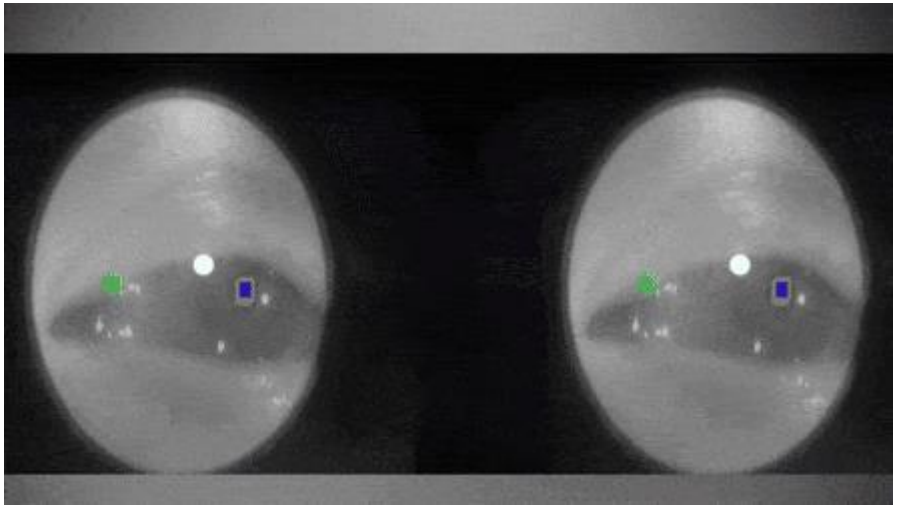

Eye tracking for content control, analytics and foveated rendering.

VR Technology Trends

- YouTube VR
- Facial Tracking
- Full Body Tracking

Sub-millimetre precision. Real time rendering. Movement magnification.
Diagnostics and content control.

VR Technology Trends

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- Avatars

Realtime avatar rendering for social communications, content control, diagnostics.

VR Technology Trends

- YouTube VR
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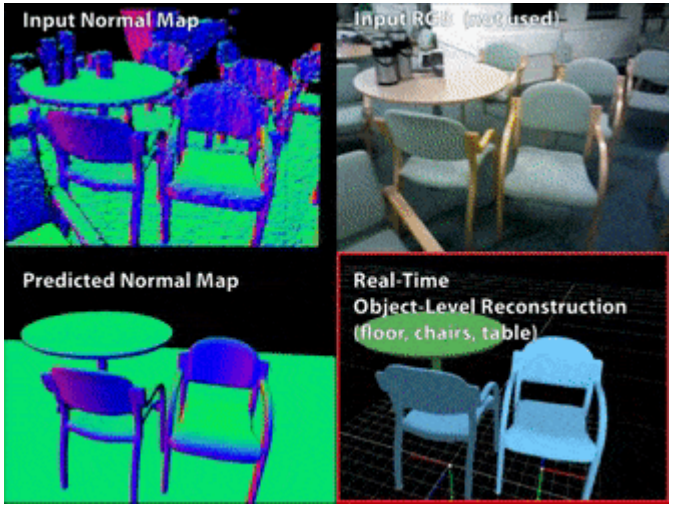
- Physical World Mapping



Alternative to AR. Create representations of real physical objects in a virtual environment.

VR Technology Trends

- YouTube VR
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Expansive exercise in a confined environment. Content control. Diagnostics.

VR Technology Trends

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- Brain Interface

EEG for realtime feedback and content control

VR Technology Trends

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Sub-millimeter positional tracking precision

Haptic gloves and suits

Touch, texture, temperature, pressure, motion capture, biometrics.

The BIG VR Trends

Virtual Reality (VR) becomes Extended Reality (XR)

- Processing Power + Display Quality = **Photorealism**
- The Disappearing Interface
- Data-driven content
- Social Connection

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“If you assume any improvement at all, games will be indistinguishable from reality”

Elon Musk

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