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How virtual reality is revolutionizing healthcare

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September 22, 2017

Please introduce yourself in text chat!

Question 1

Have you tried:

a) Mobile VR (cell phone in a headset)

b) PC or game console tethered VR

c) AR headsets

d) None

Question 2

Is your organization:

a) Using VR or AR

b) Exploring the use of VR or AR

c) None

Google Cardboard

Google Daydream

GearVR

360-video viewers

HTC Vive

Oculus Rift

Immersive VR

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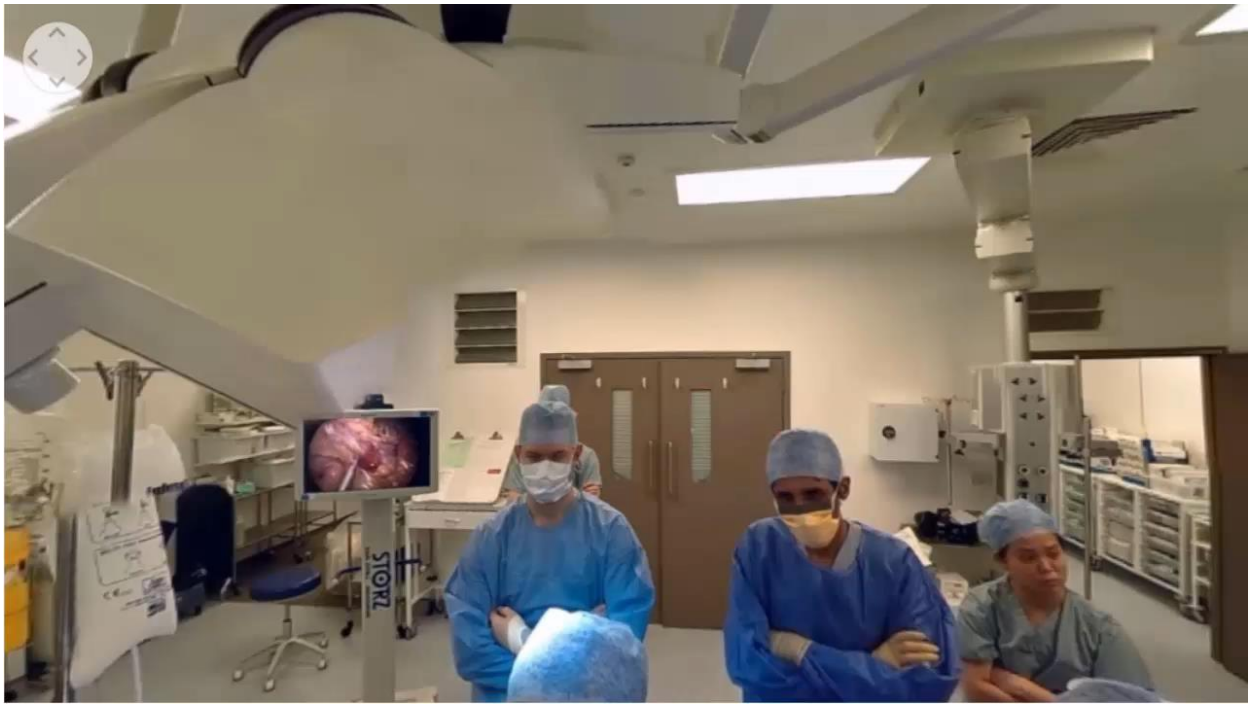

Feeling of presence

360-video livestreamed surgery

Embodied cognition

"A flight simulator" for any task that's too dangerous, expensive or inconvenient to practice in real life

Go inside the heart

Do things you can't do any other way!

5 NFL teams &
9 college teams use VR

Improved decision-making by 30%
and one second faster

Customers have 36% better recall of how to complete a tiling project compared to video

Walmart

The worlds largest employer will train 140,000 employees in 200 training centers with VR this year

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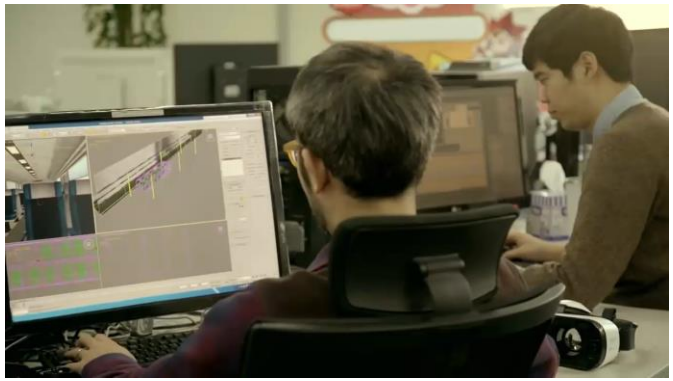

Reduced fear of public speaking

Reduced fear of height

Twice as effective as narcotics for pain relief

Better than eye-patch for lazy-eye treatment

Reduced PTSD symptoms

VR for treatment

Marketing exhibits & events

Product design: VR as a creation tool

Data visualization

Consumer behavior research: Track eye movement with heat map

Collaboration

Other healthcare use cases

“The ultimate patient empathy machine”

You are in the interactive scenario

“The ultimate patient empathy machine”

Creates empathy for and reduces bias against elderly, different gender and ethnicities

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"The ultimate patient empathy machine"

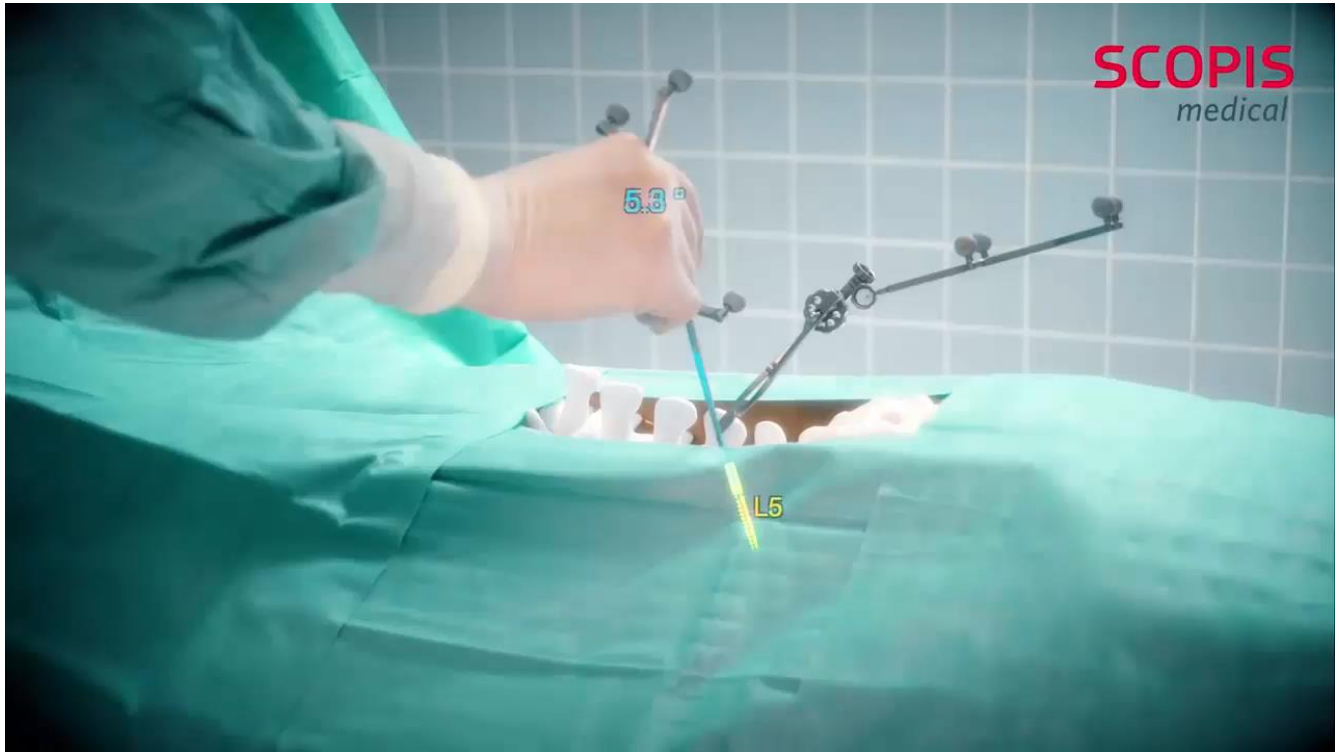
Creates empathy for animals and trees!

VR can put you anywhere

AR can bring anything to you

Virtual vs. Augmented Reality

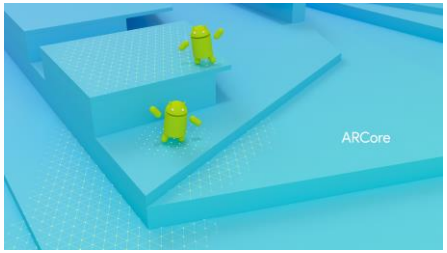
AR anatomy



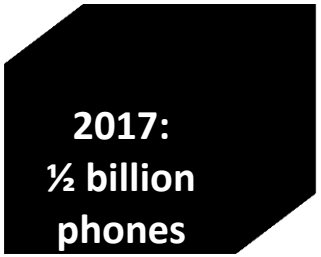
AR gives X-ray vision

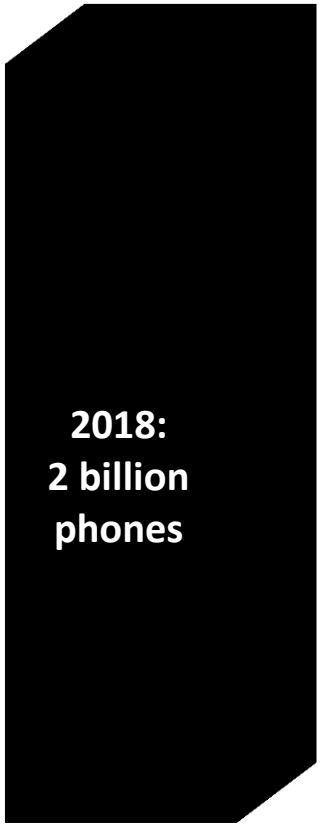
AR glasses are still 2-4 years away from mass market

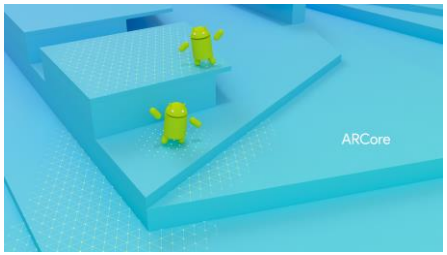
The phone is the first augmented reality platform



3. Lights and shadows

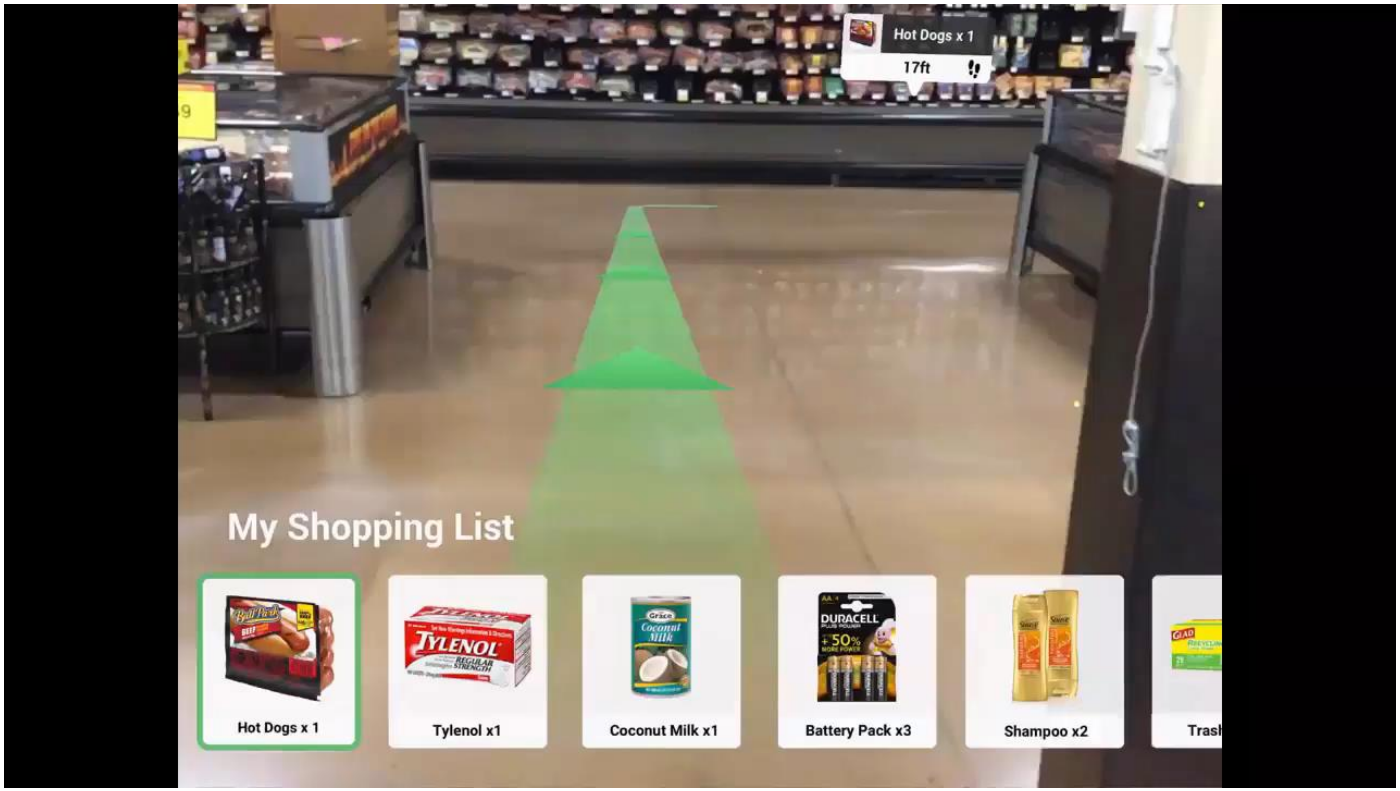




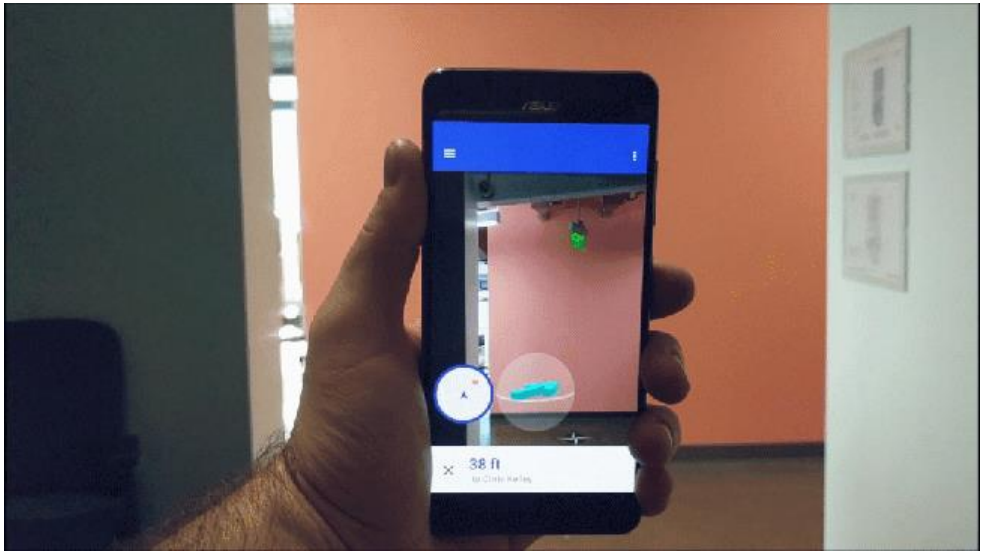


# of phones with ARKit or ARCore

It will be on your CEO's phone in weeks

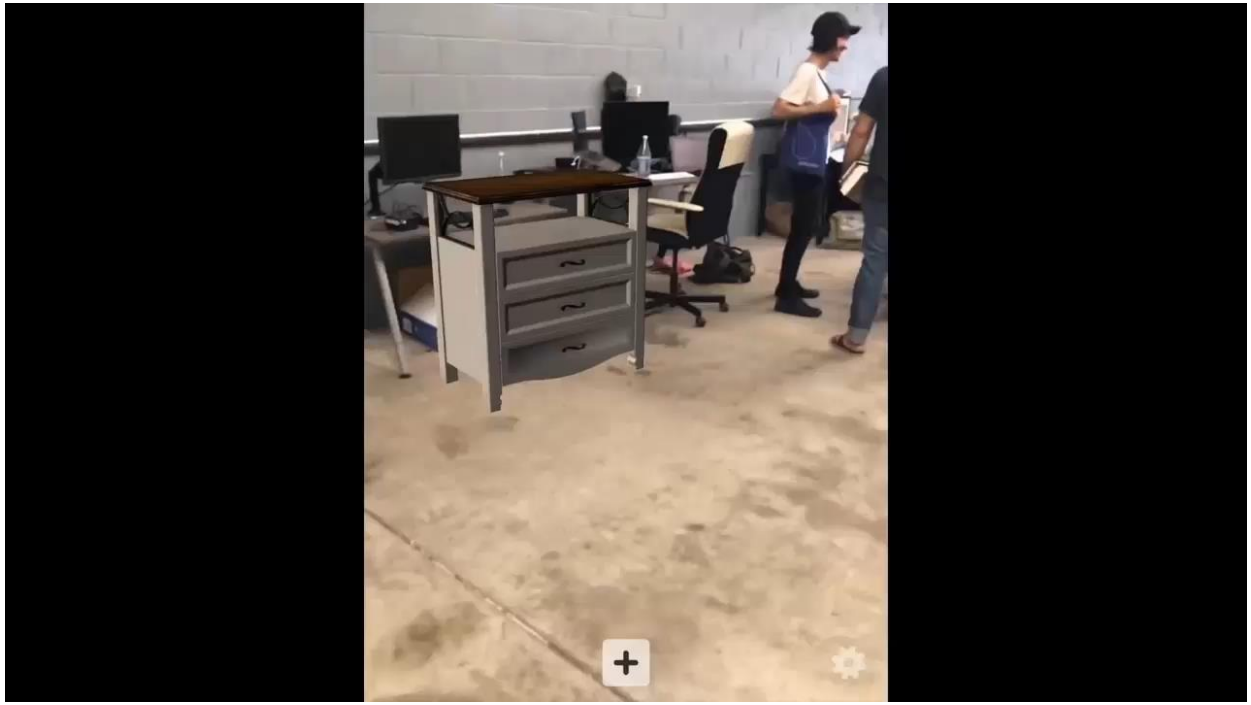


Way-finding

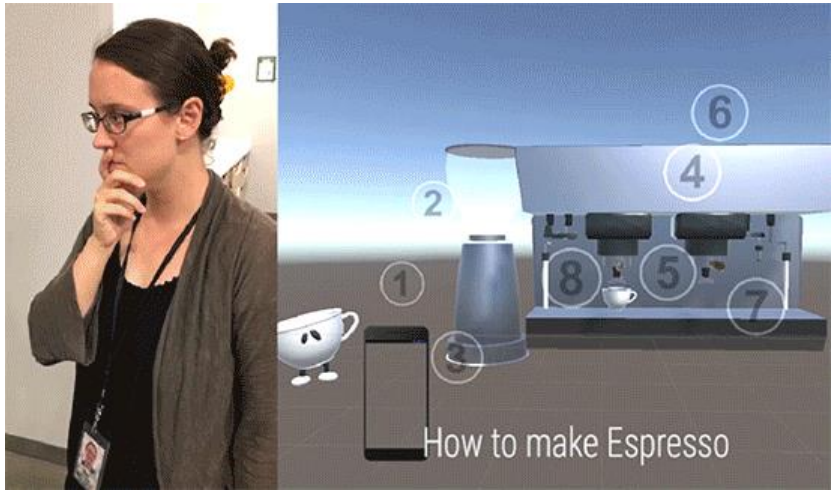


People finding

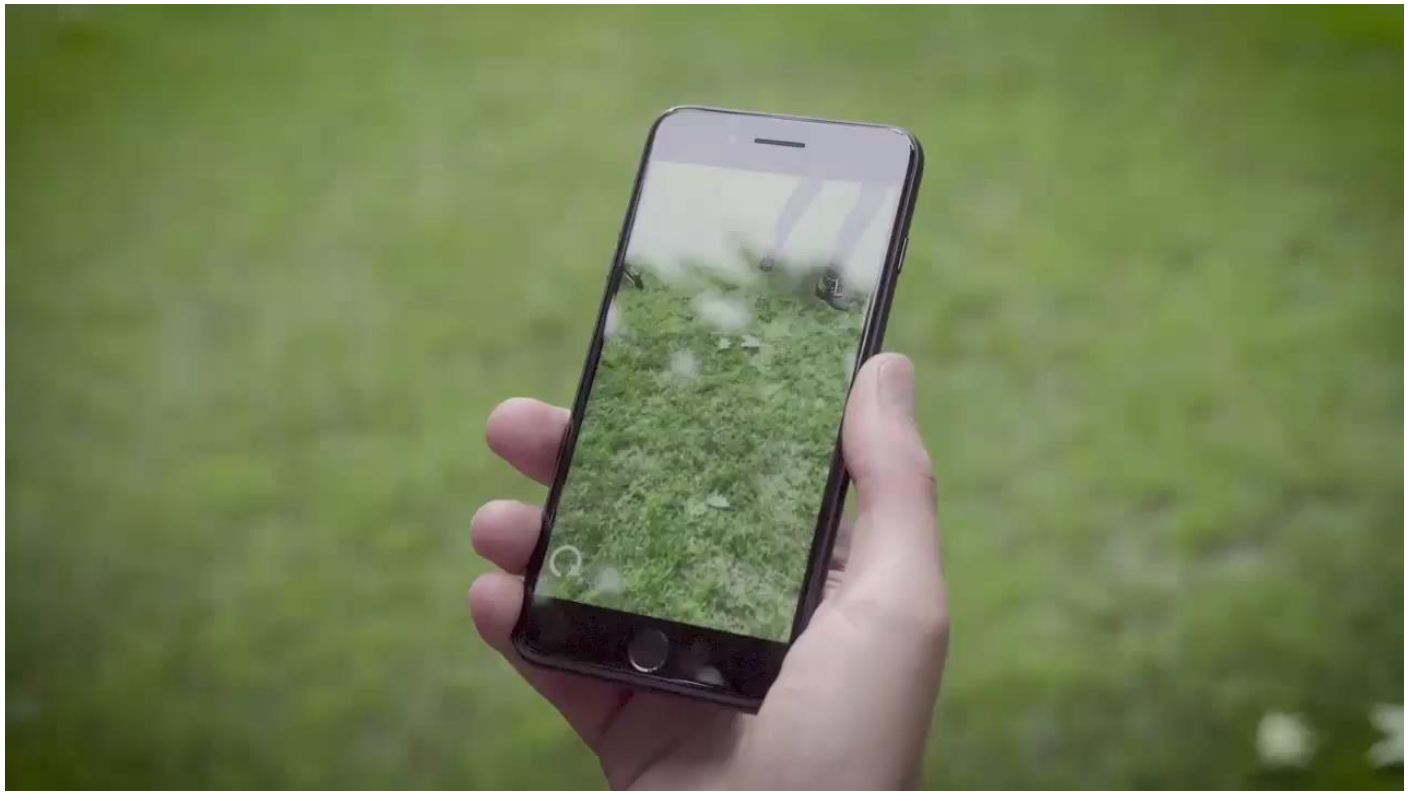
Patient custom design



Medical facility custom design & measurement

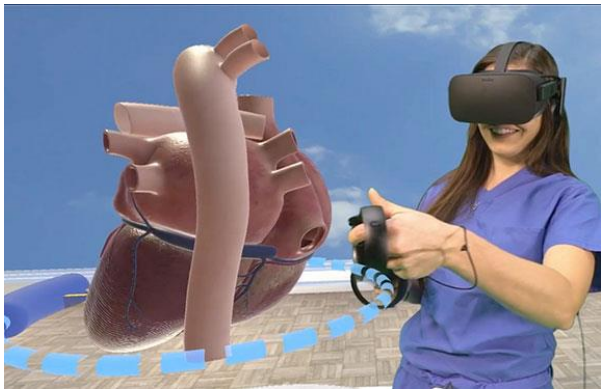


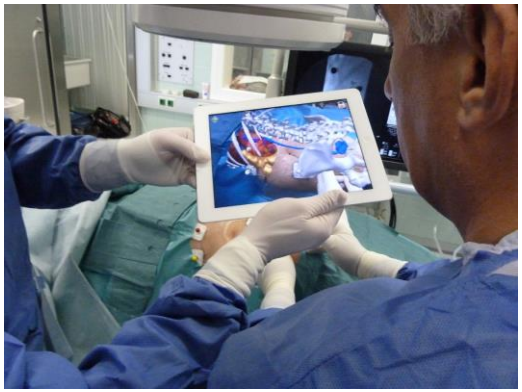
Performance support



AR scavenger hunts

AR hospital sim
dollhouse view





mixed reality continuum

VR: Learning and practice

”ultimate (patient) empathy machine”

“flight simulator” for any skill training
patient treatment and education

AR: Performance support

Productivity, moment-of-need,
work-flow support

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From idea to (virtual) reality

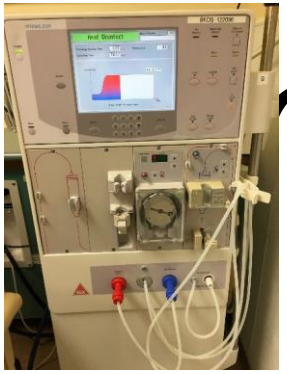
Interactiviy: By clicking on an EKG machine the EKG leads will be applied to the patient. As with the emergency cart, we will have multiple trigger points on the EKG machine that are clearly labeled and mouse over icons for the different trigger points to make it obvious where to click for: (1) moving the EKG machine to the examination room, (2) moving it back to the original location, and (3) applying leads to the patient, (4) removing the leads from the patient.

Interactivity: Clicking on the sphygmomanometer will apply the cuff to the arm of the patient avatar. This assumes the patient avatar is lying on the table. Clicking again will detach it. There will also be a place to click on the device to provide a reading.
Role-play: Doctor prescribes 4 baby aspirin. Medical assistant reads blood pressure to Doctor.

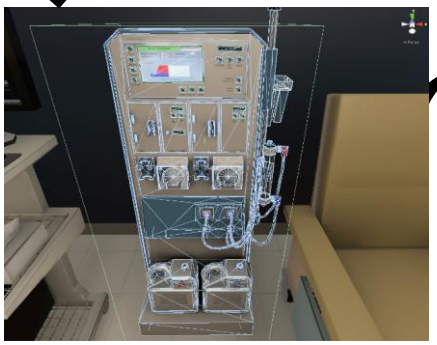
Design, conceptualization and story boarding

Client provided blue prints

Floor layout



Client provided reference pictures



Modelling and texturing in Maya

Import to Unity, cleanup and light bake in Unity

Creating 3D assets

Client reference picture

3D design

Options to custom development of 3D assets:

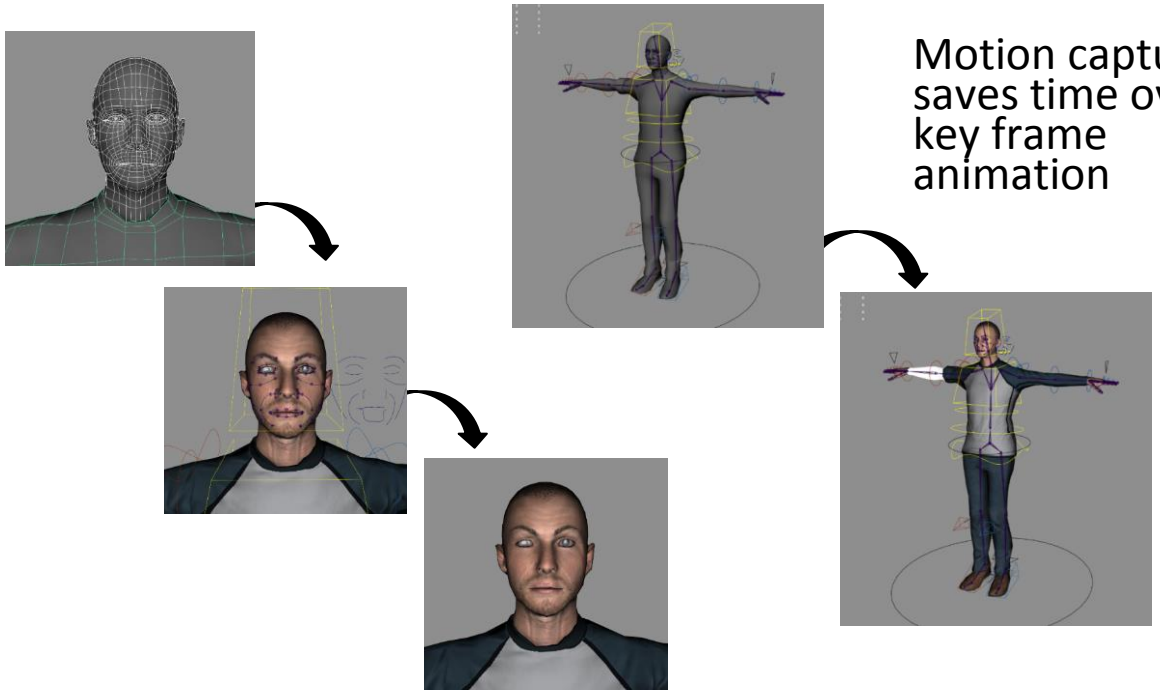
- purchase generic assets
- import 3D assets from the client,
- shoot and import 360-video,
- and make 3D assets with photogrammetry scans.

Creating 3D assets (cont.)

Reference picture

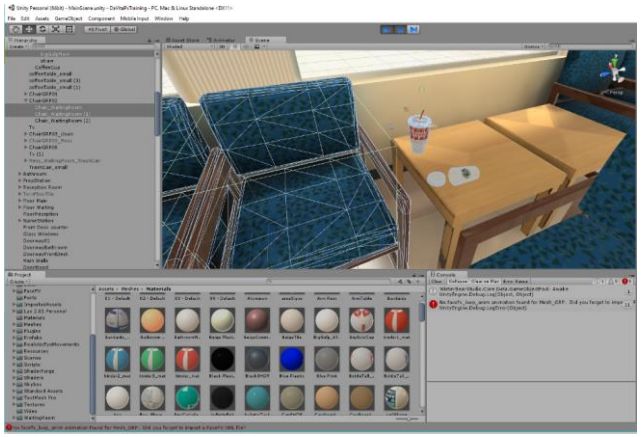
Characters created in Maya

Creating characters

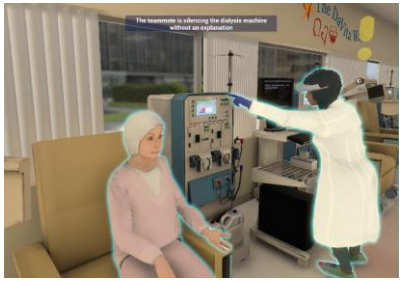


Motion capture saves time over key frame animation

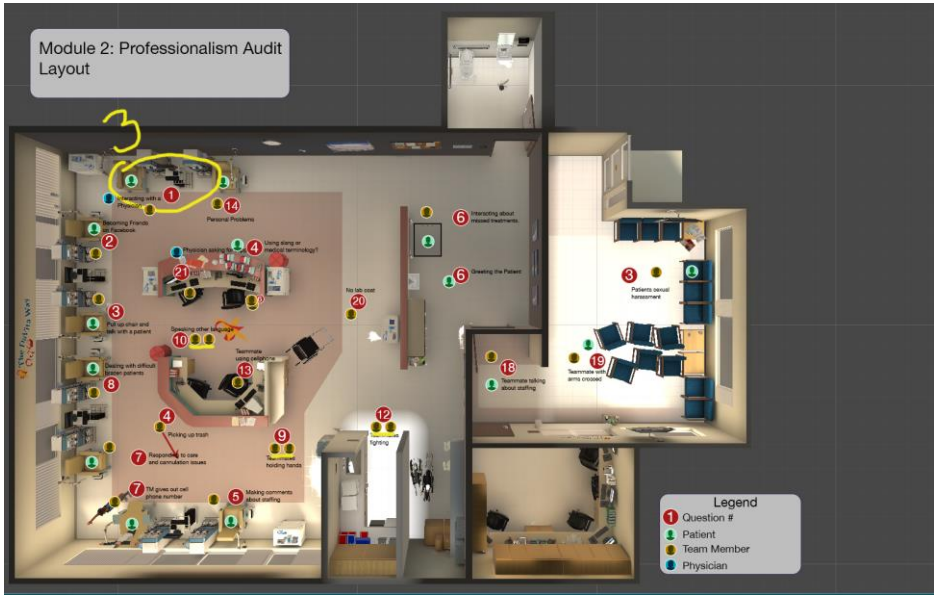
Character and face rigging and animation



All logic, when to show a menu, scoring, interactivity, etc. coded in C# in Eclips



Gameplay logic



Sequence of interactivity has to be coded

Dialogue layout

GRONSTEDT GROUP

A digital training agency at the intersection of gaming, media and learning. Our custom-developed learning programs drive performance improvements and business results for clients like Google, HP, KPMG, and DaVita

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