

# VR: what it is, what it can be

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# Virtual reality, 1993

(credit: Mike Fisher, AP)

It's been a while



# VR, 2015

Still a ways to go

# What is VR?

- It's immersive. It feels like you're transported.
- It's full head motion: you can look all around.
- It can involve inputs...or not. Passive, or active.

# The Platforms

- Full desktop/console rigs: Oculus Rift, Project Morpheus, HTC Vive
- Mobile VR: Samsung Gear VR, Google Cardboard
- Augmented tech: Microsoft HoloLens, Magic Leap

# Oculus Rift (2016)



- PC-connected, graphically powerful, nice 3D sound
- Bold motion controllers
- Can track some light body motions

# Sony Project Morpheus (2016)

- Works with PlayStation 4 game console
- Wand-type Move controllers
- Mostly games, lower-res
  - Fits over glasses



# HTC Vive (2015)

- ANOTHER PC-connected VR headset
- Can wander a whole room with laser sensors
- Wireless control sticks to navigate
- Works with Valve's Steam store for PCs



The Problem:

too big and bulky...  
needs whole system to run!

(but pretty awesome)

# Mobile VR



Uses a smartphone: the screen you have with you

# Samsung Gear VR

- Superior VR quality (higher-res phone displays, nice headset)
- Needs Samsung Note 4 or Galaxy S6/S6 Edge (limited audience)
- Costs \$200
- Works with Oculus ecosystem
- Bluetooth controller, or touchpad on side of head



# Google Cardboard

- Cheap, fold-your-own VR headset
- Have to hold up to your face to use
- Less impressive, visually
- WORKS WITH ANY PHONE (Android, iPhone)
- Nearly free (\$20, or can be given away)
- Easy to set up



The Lesson:

Free is better for now



# 360 degree video

Immersive, panoramic experiences, but largely passive  
(Screenshot: Clouds over Sidra, VRSE)

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# How VR made me cry

- Personal story
- I could explore the world
- I felt like I was in a very special, theatrical space
- It made everything far more real





# Spherical cameras

Not largely available yet for consumers, but some are on their way  
Many cameras in a ring: GoPro, others creating solutions  
(seen above: Jump, at Google I/O: 16 GoPro cameras)

# CNET: E3 VR video

- Partnered with im360 to create VR video
- Shot on bunch of strapped together GoPros (see picture)
- Lots of simple panoramas
- Video stitched together to create seamless 360-degree sphere
- Worked on Cardboard, Gear VR via im360 app



# VR drawbacks

- Video is grainier, less HD. Trading clarity for immersion (Warcraft experience by Legendary)
- Fewer people can experience it
- Need to learn and use all new tools: camera work, sound editing, avoid nausea
- Different ecosystems: can't play everywhere unless apps exist across the board
- Needs to be short, or I get dizzy!

The Future



# Augmented Reality

Microsoft HoloLens, Magic Leap  
Virtual worlds projected into reality

Unproven, hard to tell when it will feel ready: but theoretically amazing



# Whole new ways to interact

Oculus Touch, motion controllers, haptics:  
Touching and engaging with virtual worlds

Good VR content is  
needed: I'm eager to try it

Good luck!