

History and Future of VR

Amber Case

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Slides! [Slideshare.net/caseorganic](https://www.slideshare.net/caseorganic)

Qcon San Francisco, CA

07 November 2016

Part I: Early VR Demos

**Let's put you on a
rollercoaster!**



VR Roller Coaster for Android



VR Roller Coaster for Android

Rollercoasters:

**NOT A GOOD IDEA
FOR VR**

***nauseating* games
and *advertising*
demos**

**Bad thing #2:
People want to move!
How can we make them
move?**

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People want to move!
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What about Treadmills?







Treadmill Drawbacks:

- **Clunky**
- **EXPENSIVE**
- **Requires special shoes**
- **Not great**

FIXES!

- Allow limited movement with a 'guide'
- Add **teleportation!**

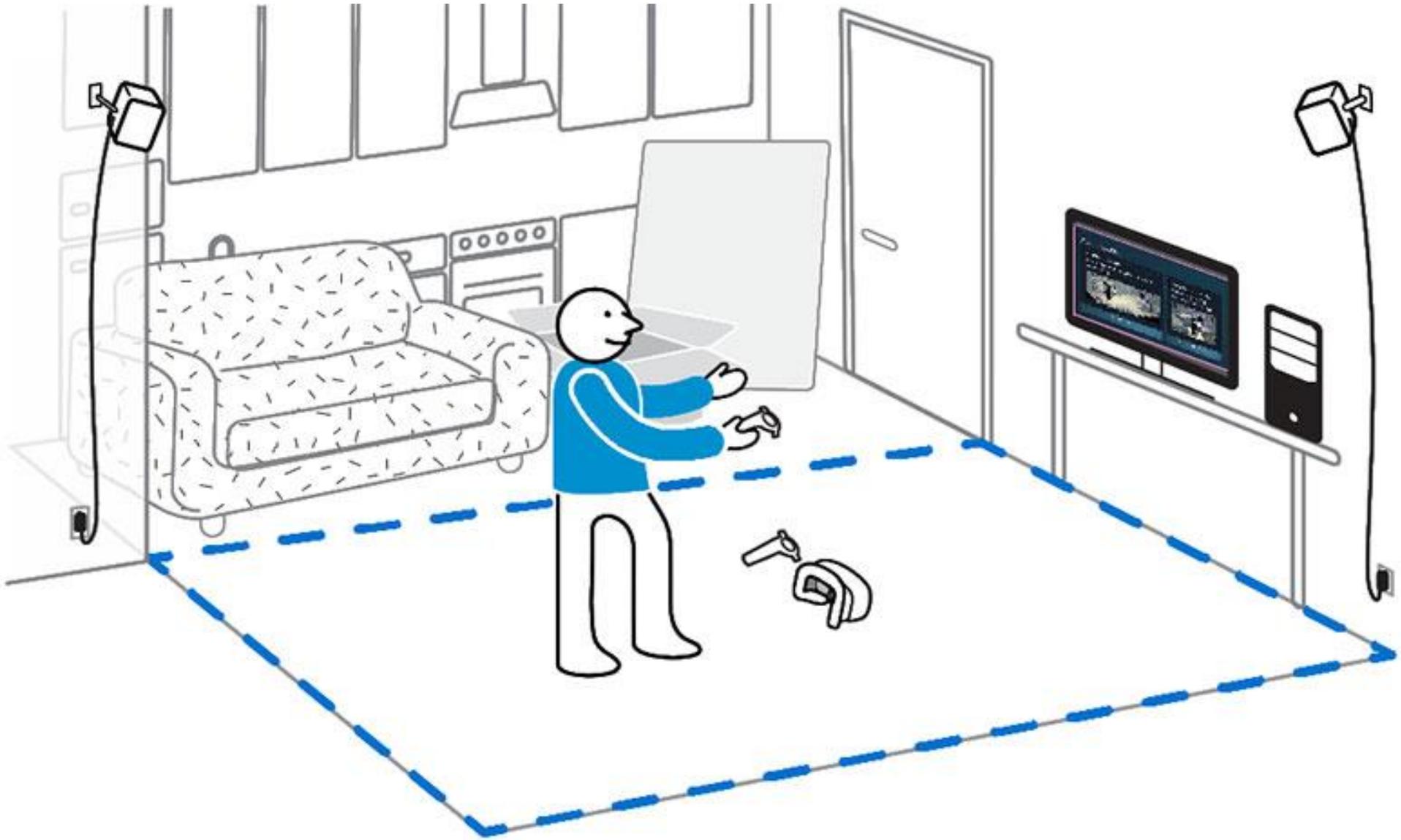


VIVE

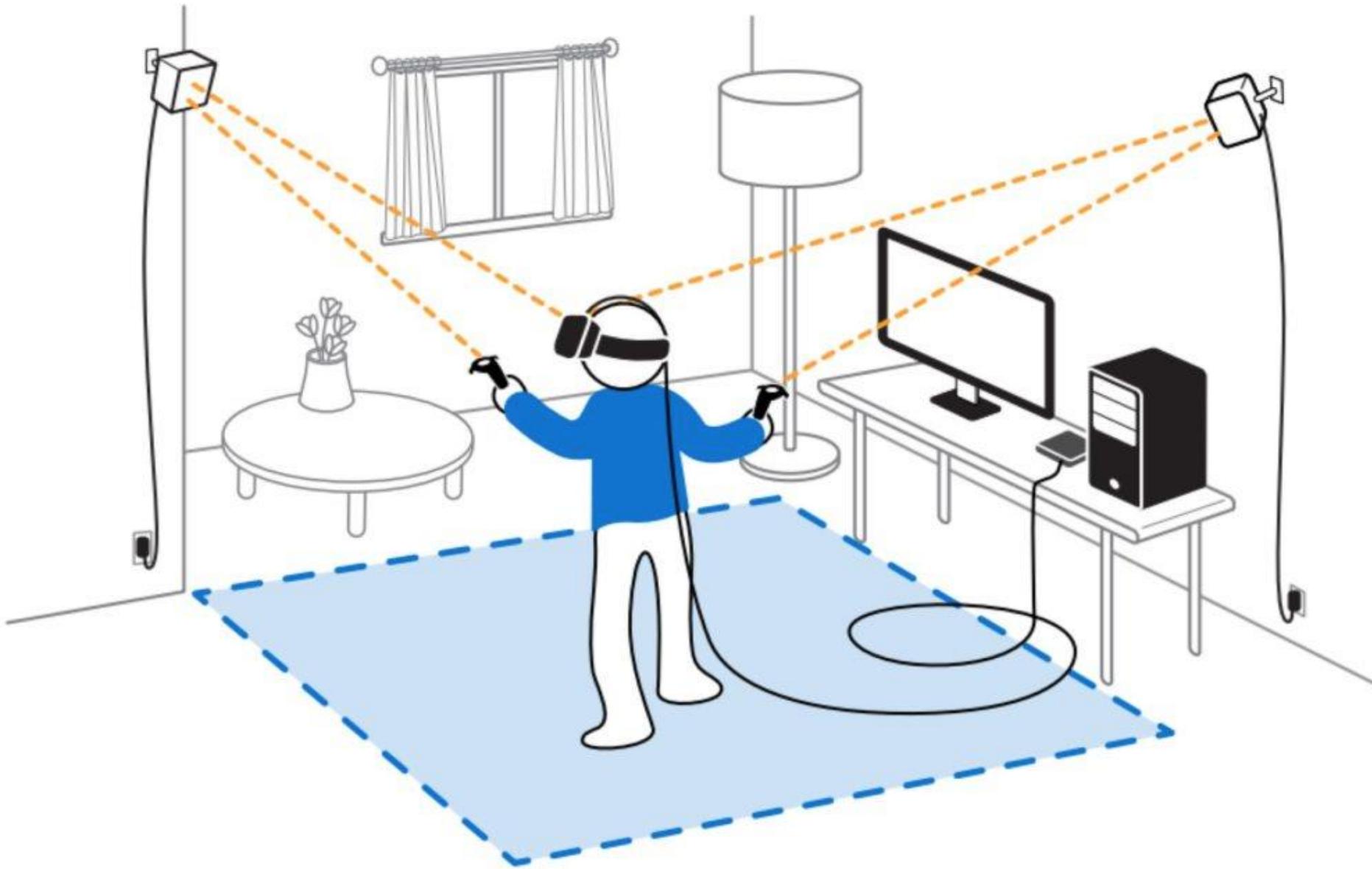
htc | STEAM® VR

Baseline Setup

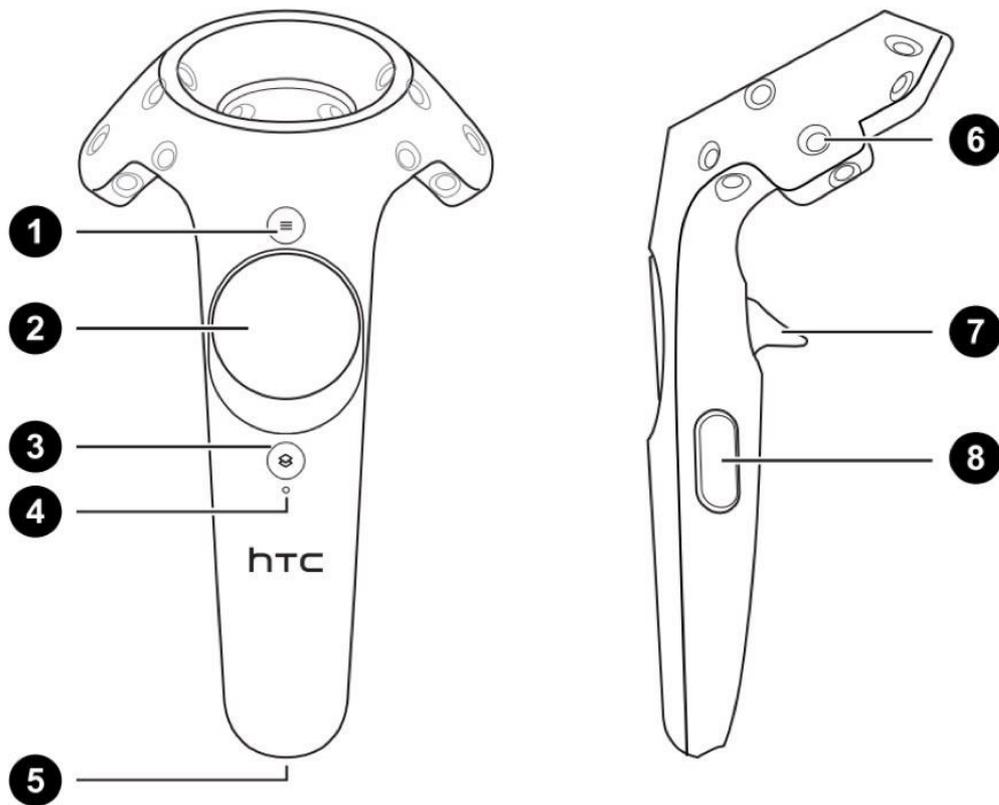
- 1 Headset
- 2 room detectors
- 2 controllers
- 1 Computer
- Graphics card: GeForce 1080 or higher
- LOTS OF RAM
- Babysitter for cord safety!



Source: HTC Vive Manual



Source: HTC Vive Manual



1	Menu button
2	Trackpad
3	System button
4	Status light
5	USB charging adapter
6	Tracking sensor
7	Trigger
8	Grip button

Better Setup

Add:

- External Speakers
- External monitor
- Blue tape on floor for floor boundary
- Umbilical cord



II. The Apps

Types of Games

Training Wheels

- Tilt Brush (Google)

Task-Based

- Job simulator (expandable based on
- Leaf blower (*Monotasking, immersive*)

Types of Games

RTS

- Cosmic Trip (alternating wave battle with territory building)

FPS Hybrid

- Hover Junkers

Old School

- Wave Blaster

Experiences

Reggie Watts live in VR!

First time: “I DON’T want you to look to see if there is gum under these tables”.

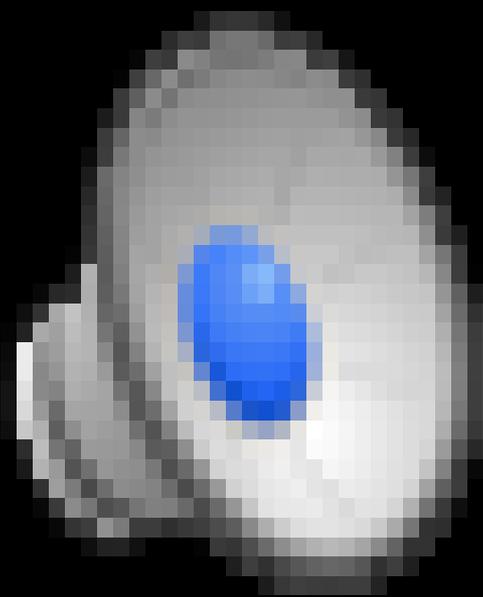
Second time: Reggie gets stuck in the stage.

JASH
VR



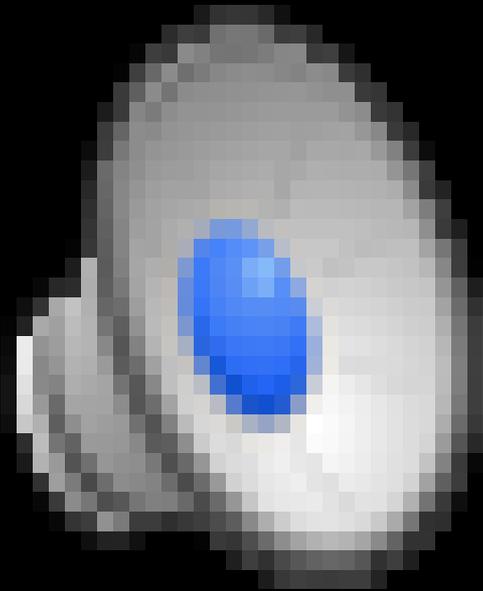
REGGIE WATTS
LIVE IN VIRTUAL REALITY





Job Simulator

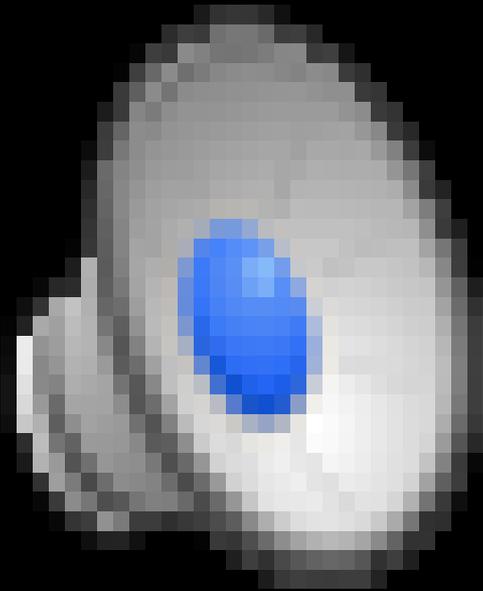
Owlchemy Labs



Space Pirates

Marvel

SoundCloud: James



Cosmic Trip

Labs

Funktronic

What's Next?

What about AR?

III. The Road to Augmented Reality

AR relies on:

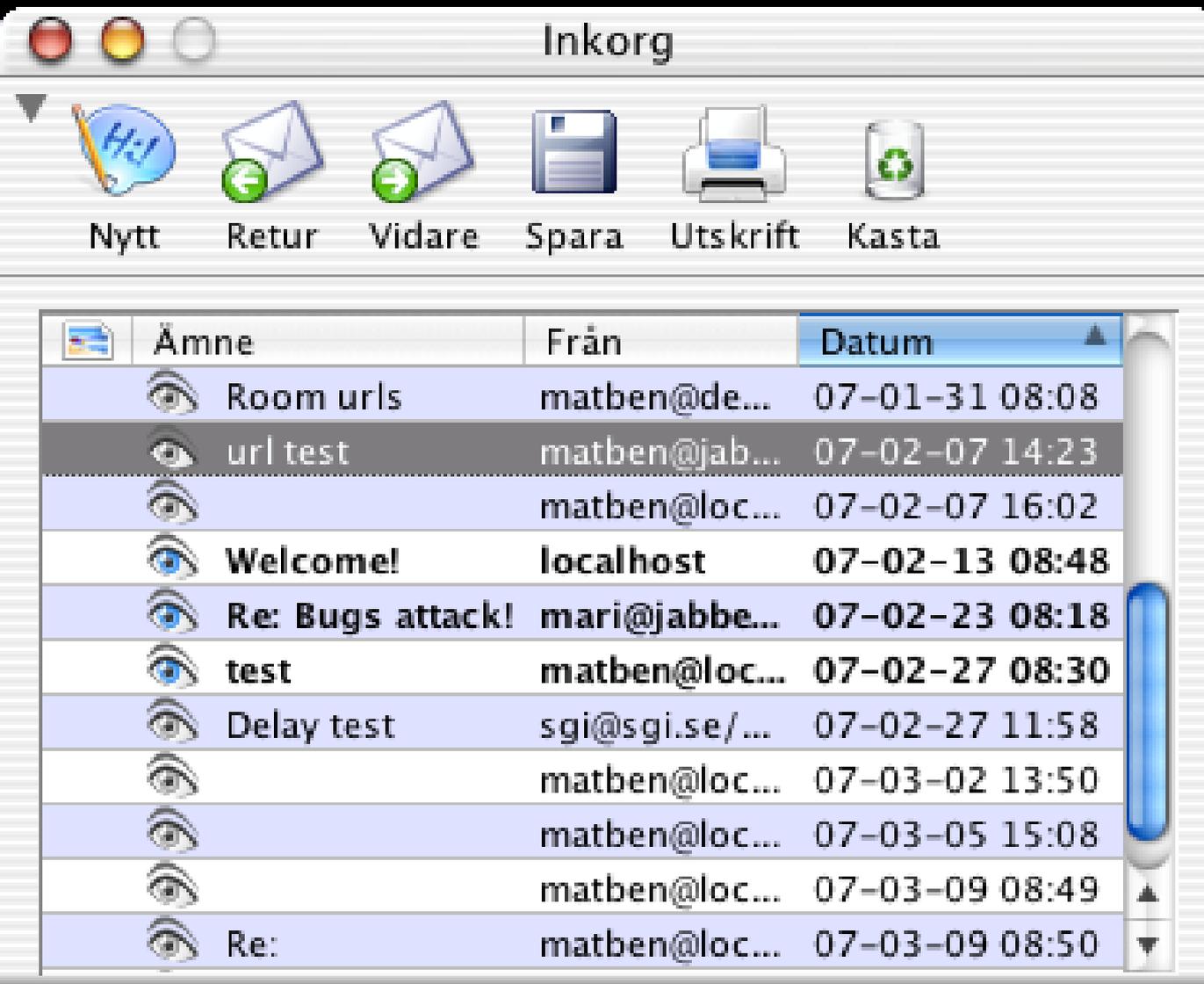
- **Bandwidth**
- **Image recognition (not great in real-time)**
- **Objects (will be built through games in VR)**



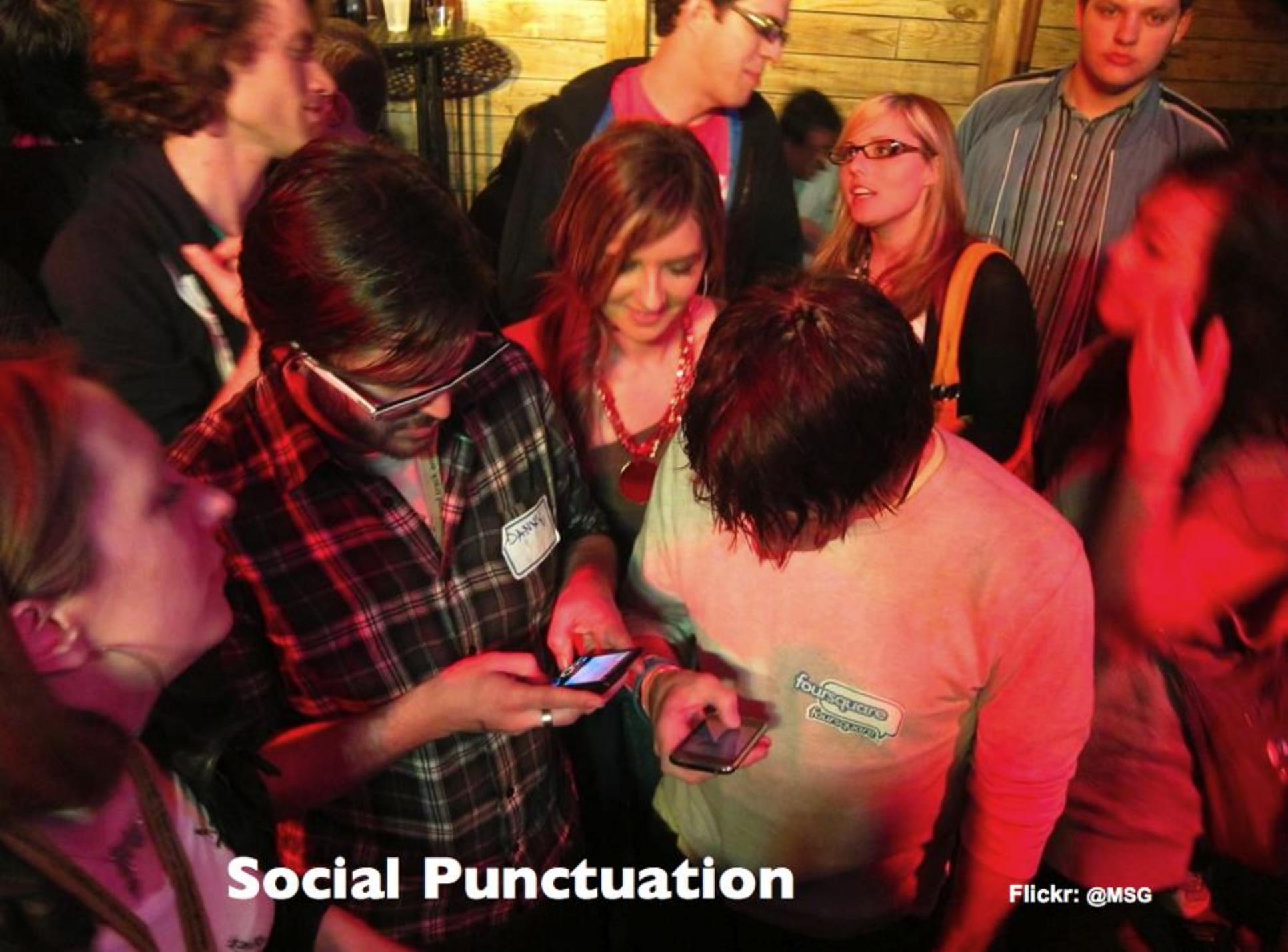
Self-Portrait of Steve Mann with Wearable Computing Apparatus

1981.





Persistent Paleontology



Social Punctuation

Flickr: @MSG



Figure 6. Experimental set-up to induce the 'body swap illusion'.

doi:10.1371/journal.pone.0003832.g006



Diminished Reality vs. Augmented Reality

- Adding your own layer onto reality
- Replacing public messages with your own

(1)



(2)

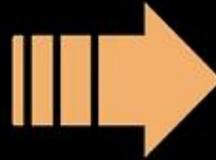


(3)

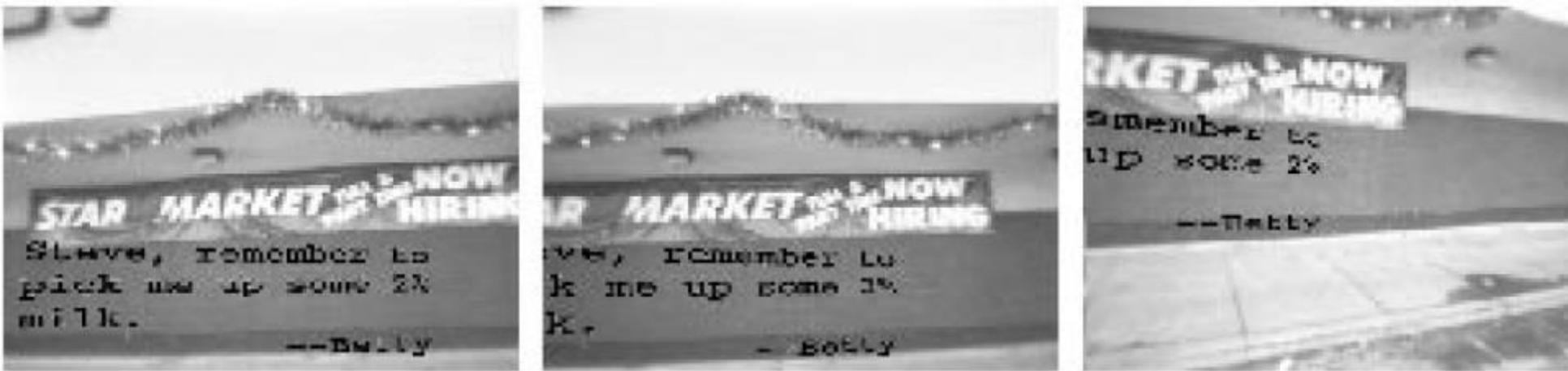


Adblock: Image recognition, processing and replacement.

Collaborative Reality



Remember the Milk Contextual Notification Systems



Virtual Post-It Notes with Image Processing 1995



(a)



(b)



(c)

Computer-Mediated Reality: Face Recognition and History

Sousveillance: MaybeCam





1980



1985



1991



1995



1998

Evolution of Prosthesis

A man with long brown hair, glasses, and a headset is looking down at a small child. The child is wearing a red jacket with gold patterns and is holding a metal tool. The man is also holding the tool. The background is a plain, light-colored wall.

Present-Day Steve Mann

- Extremely lightweight equipment
- Most people have this in their pocket

Technology should
consider social norms

Technology

Example

Social Effect

Enhancing



Fear-inducing

Normal



Invisible

Restorative



Accepted



The arrival of the smartphone camera

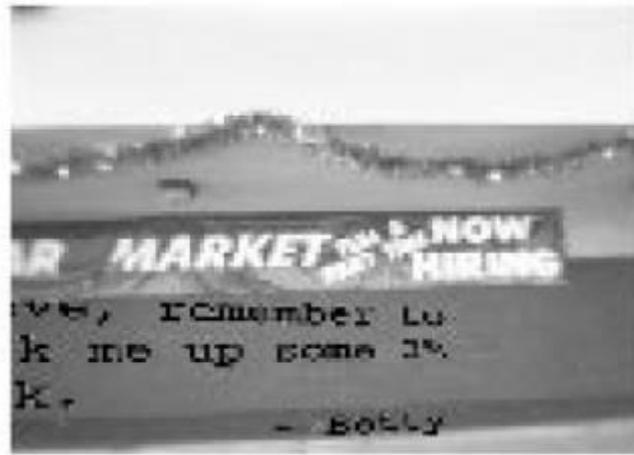
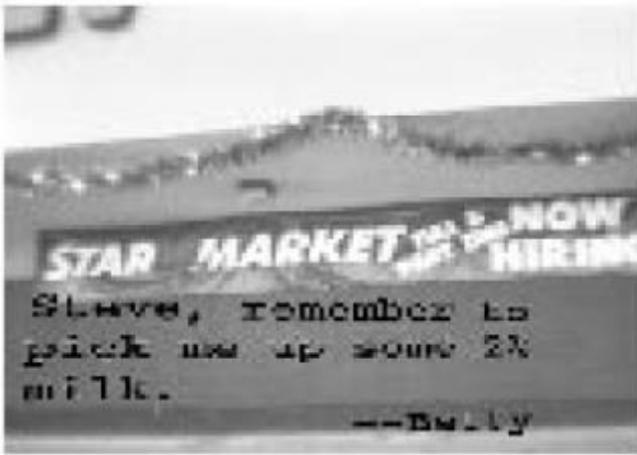
Google Glass



Compare to the iPhone Launch

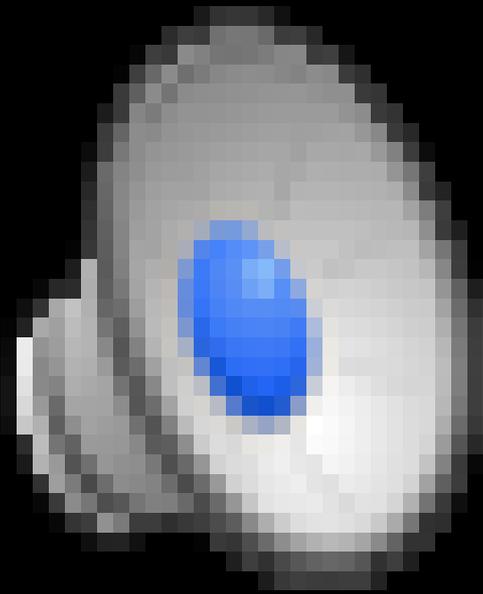
- **Improvement on an existing system
(smartphones)**
- **Developer onboarding**
- **Limited Features**

Like this...



Remember the Milk Contextual Notification Systems

Virtual **Post-It Notes** with Image Processing
1995



Domestic Robocop

Keiichi Matsuda



IV. Building VR Experiences

Search...

VRTK - SteamVR Unity Toolkit

Scripting

Sysdia Solutions Ltd

★★★★★ (136)

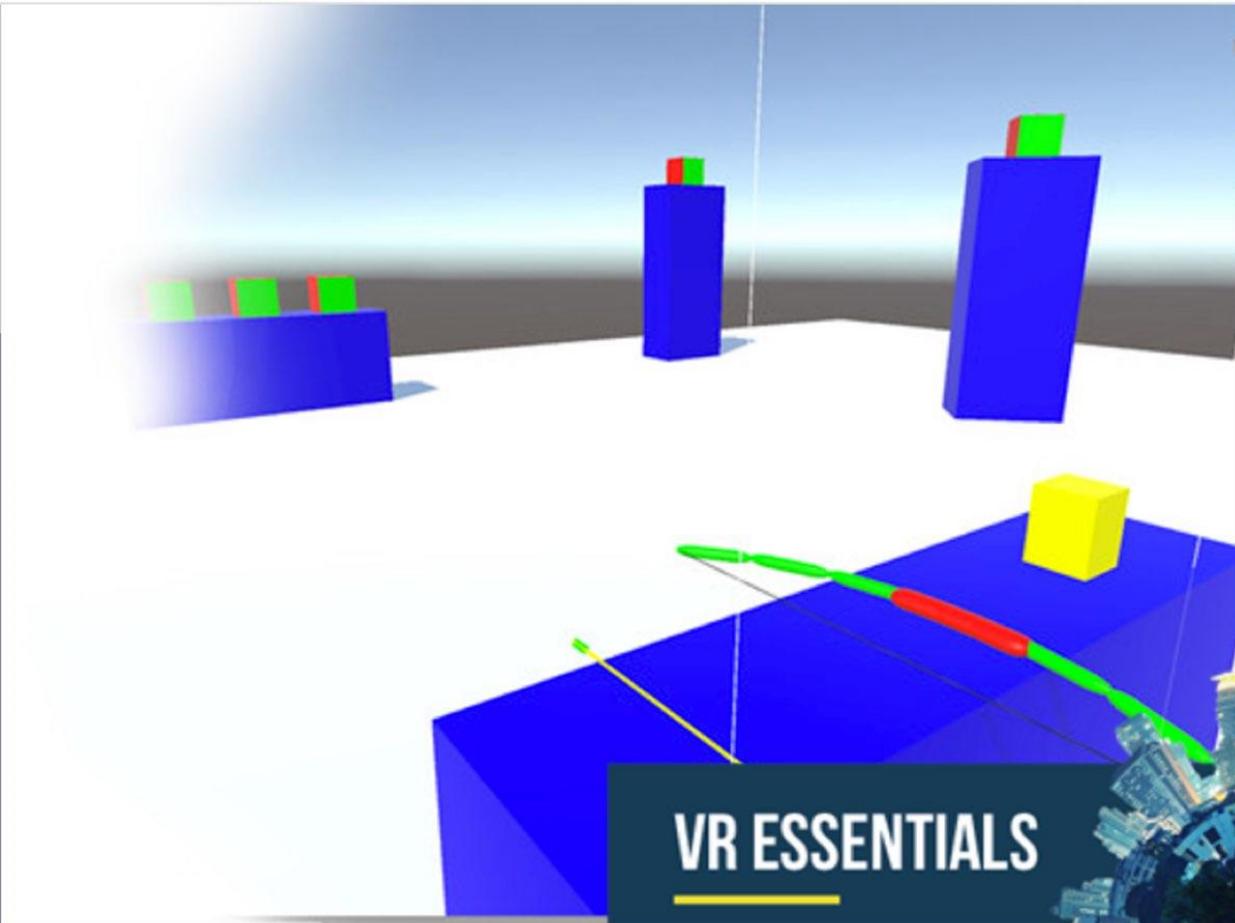
Free

Open in Unity

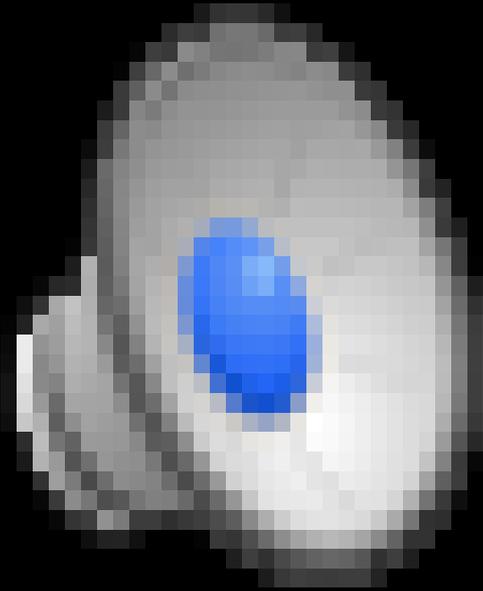


Requires Unity 5.3.5 or higher.

NOTE: This is the VRTK toolkit by TheStoneFox and that is me, it's just published under a different company name, but I assure you this is the legit real deal :)



VRTK – Steam VR Unity Toolkit



Stephanie Mendoza

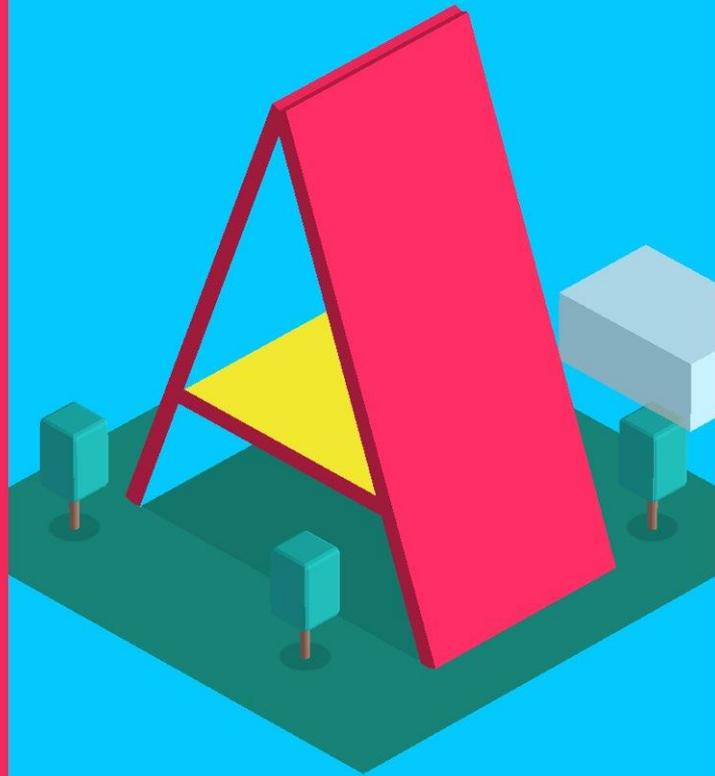
liloil.neocities.org

A-FRAME

A-PAINTER
INSPECTOR
REGISTRY

Examples

Hello World
Hello Metaverse
360° Image
360° Image Gallery
360° Video
Anime UI
Audio Visualization
ShopifyVR
Spheres & Fog
A-Painter 
Tracked Controllers 



[DOCS](#) [FAQ](#) [BLOG](#) [COMMUNITY](#) [GITHUB](#)

A web framework for building virtual reality experiences

With HTML and Entity-Component ecosystem.
Works on Vive, Rift, desktop, mobile platforms.

GET STARTED

mozilla

A-FRAME

Mozilla Web VR Framework



Elements Console Sources Network >> 12

```
<!DOCTYPE html>
<html class="a-html">
  >#shadow-root (open)
  <head>...</head>
  ><body class="a-body"> == $0
    ><a-scene class="fullscreen" canvas inspector keyboard-
      shortcuts vr-mode-ui>...</a-scene>
    </body>
  </html>
```

html.a-html body.a-body

Styles Event Listeners DOM Breakpoints Properties

Filter :hov .cls +

```
element.style {
}
.a-body {
  height: 100%;
  margin: >0;
  overflow: >hidden;
  padding: >0;
  width: 100%;
}
body {
  display: block;
  margin: >8px;
```

margin -
border -
padding -
990 x 873.750

Filter Show all

display block
height 873.75...

Console

```

THREE.WebGLRenderer: image is not power of two (3000x1500). Resized to 4096x2048

TypeError: Cannot read property 'getElementsByTagName' of null(...)
onloadwff.js:1573
TypeError: Cannot read property 'getElementsByTagName' of null(...)
onloadwff.js:1573
```

liooil.neocities.org/VR_webStuff/room+07/room07.html

People to follow:

VR Church Portland

Stephanie Mendoza

Liooil.neocities.org

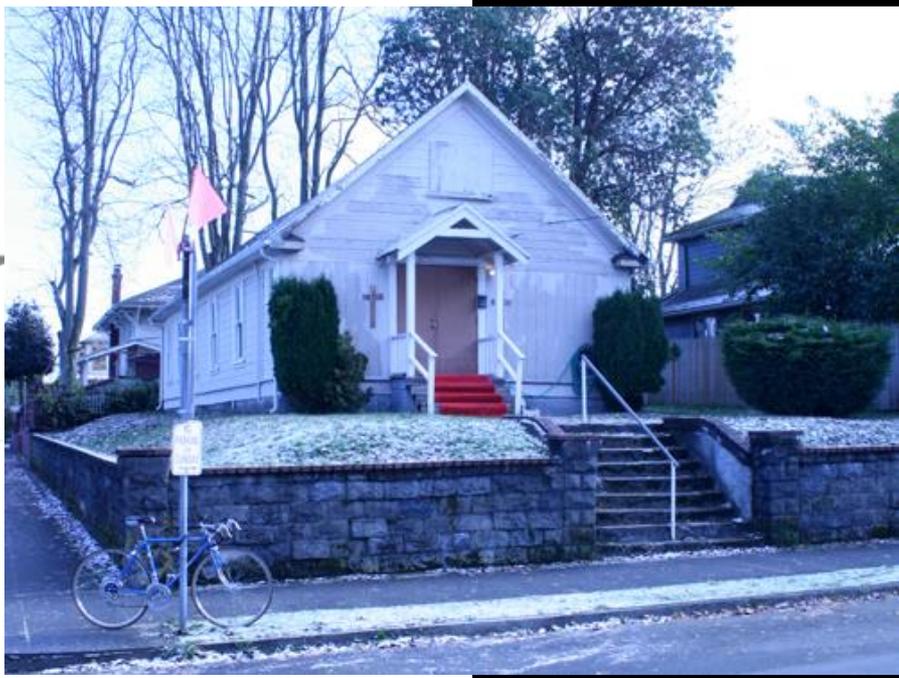
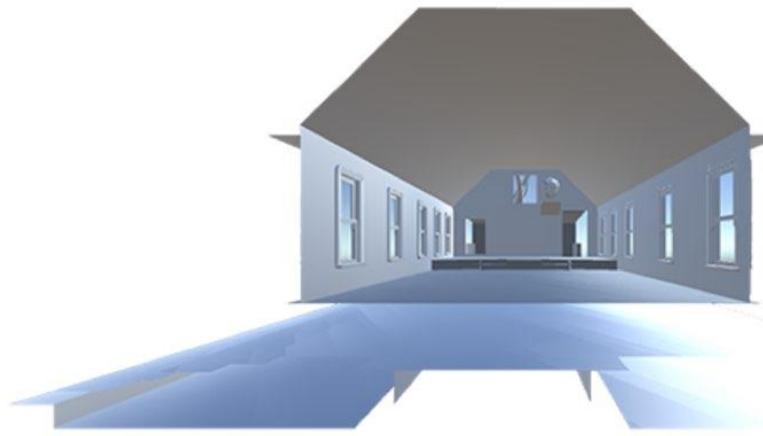
Reggie Watts, Justin Roiland

Owlchemy Labs

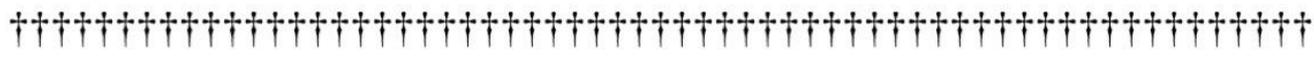


Stephanie Mendoza

liooil.neocities.org



upcoming
past events
residency (Winter 2016)
NTVTY I-V
philsophy
messages
history
props









Thank you!

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