

The background is a vibrant, futuristic collage. At the top right, a satellite orbits in space. A large, glowing blue circuit board with intricate patterns dominates the center. To the left, a tall communication tower stands against a dark sky. In the bottom left, a laptop displays a view of Earth. A red, arched bridge structure is visible in the lower center, with two small figures standing on a platform below it. On the bottom right, a white rocket with a blue nose cone is shown in motion, leaving a trail of white smoke. The overall color palette is dominated by blues, purples, and oranges, creating a high-tech, visionary atmosphere.

TECHNOLOGY FUTURES INC.

Your Bridge to the Future

Virtual and Augmented Reality (Games, Shows, and Apps)

Lawrence Vanston, Ph.D.
President,
Technology Futures, Inc.

rhodges@tfi.com

**TFI Communications Technology
Asset Valuation Conference**

January 26-27, 2017

Courtyard Marriott Downtown
Austin, Texas

13740 Research Blvd., Bldg. C-1 • Austin, Texas 78750
(512) 258-8898 • www.tfi.com

**TECHNOLOGY
FUTURES INC.**

Copyright © 2017, Technology Futures, Inc.

Augmented Reality

AR Has been here for a while

First and Ten Line - 1998



NFL FOX

The NFL's 1st and Ten Line

Augmented reality was initially seen by the masses in the subtlest of ways. The 1st and Ten Line computer system was first broadcast by [Sportvision](http://www.sportvision.com) in 1998, casting the first virtual yellow first-down marker during a live NFL game.

http://www.huffingtonpost.com/entry/did-sports-really-pave-the-way-for-augmented-reality_us_57b4889be4b03dd53808f61d

More sports examples

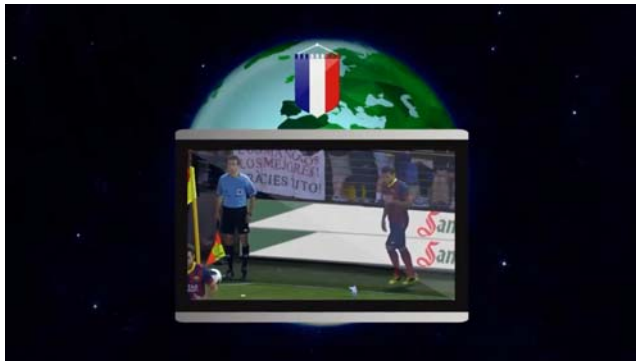


<http://www.supponor.com/> <https://vimeo.com/181774470>

4a

Virtual Advertising

Virtual Advertising – Sports



4b



5a



5c

<http://www.supponsor.com/> <https://vimeo.com/181774470>

Taking it a little farther....



<http://www.brandmagic.tv/#/Home>

Another Screen-Based AR Application

2016 Grammys



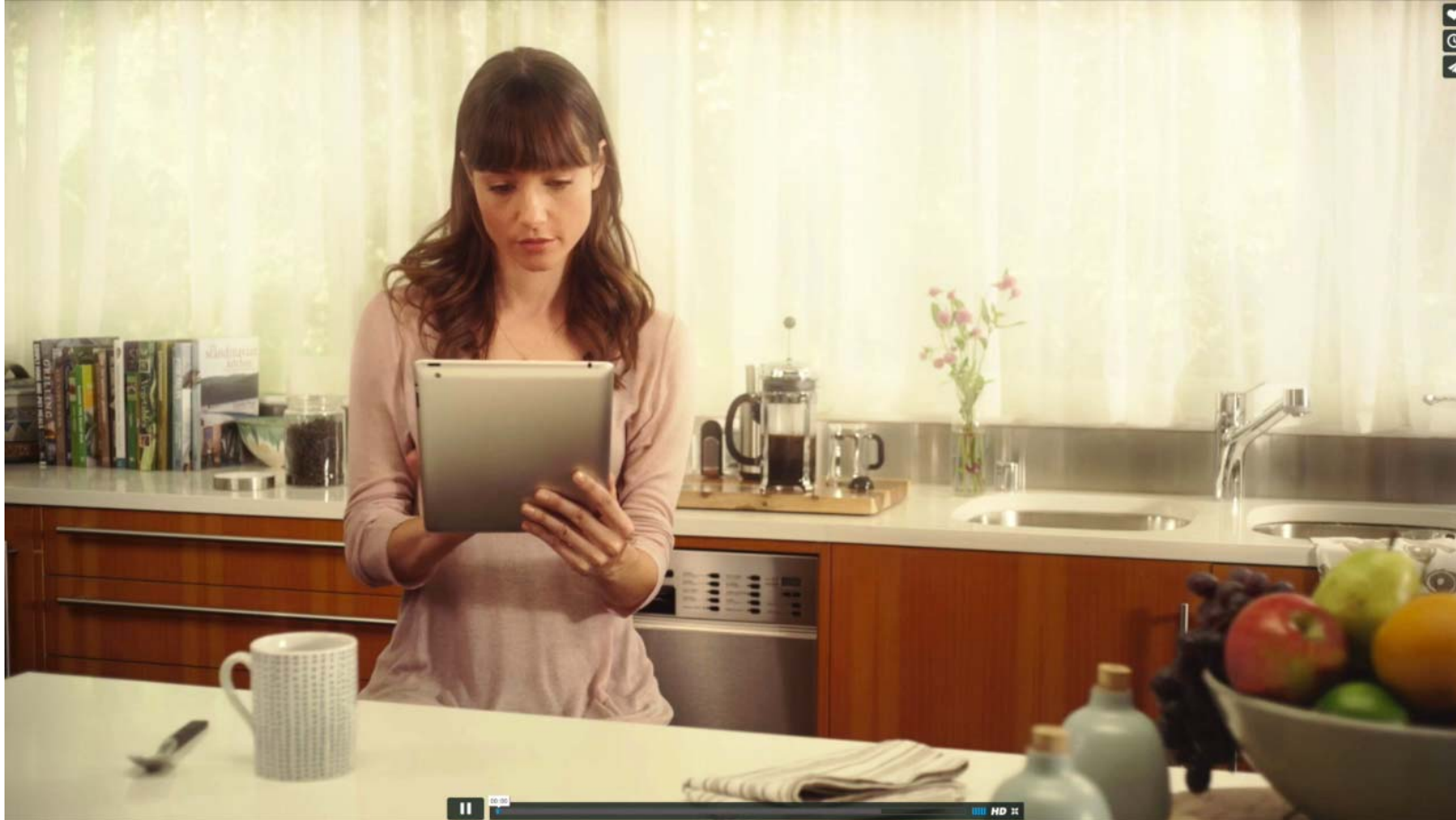
<http://www.gossipcop.com/lady-gaga-david-bowie-grammys-tribute-video-medley-grammy-awards-performance-watch/>

Also see:

<http://money.cnn.com/video/technology/2016/12/14/intel-brand-millennials.cnnmoney/index.html>

Screen-Based Interactive AR Applications

Trying on Glasses



<https://binocular.io/work/#>

<https://vimeo.com/86441540>

Trying on Makeup



<https://binocular.io/work/>

<https://vimeo.com/86441540>

At the museum



<https://vimeo.com/120085063>

Pokemon Go AR Mode



<https://www.youtube.com/watch?v=3YatJhKJSNk>

AR with Glasses

Google Glass: A little before it's time?



Or maybe just the wrong strategy?

<http://www.business2community.com/tech-gadgets/5-reasons-google-glass-miserable-failure-01462398#WheKvB6rGoApUuyl.97>

<https://www.youtube.com/watch?v=laU6DWb0yzs>

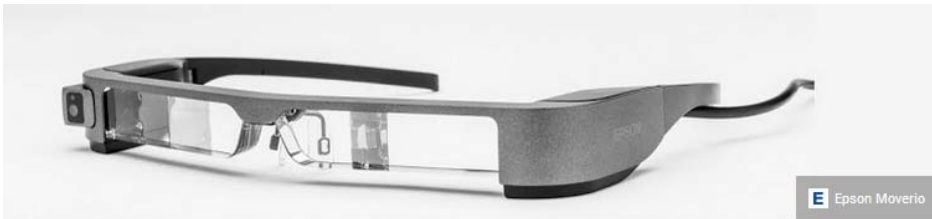
Current AR Glasses Examples

From a small window to wrap-around holograph



Vuzix

<https://www.vuzix.com/Products/m3000-smart-glasses>



Epson Moverio

<https://www.youtube.com/user/MoverioChannel>

<https://epson.com/moverio-augmented-reality-smart-glasses>



Microsoft HoloLens

<https://www.microsoft.com/microsoft-hololens/en-us>

Microsoft Hololens



<https://www.microsoft.com/microsoft-hololens/en-us>

Will this be our normal interface with computers and media?



Epson Moverio



<https://www.youtube.com/user/MoverioChannel>

Unexpected Applications!

Unexpected Applications!



<http://mashable.com/category/project-glass/> <https://www.youtube.com/watch?v=laU6DWb0yys>

Of course, this may all go to far....

Of course, this all may go to far....



6:15

22

HYPER-REALITY

from Keiichi Matsuda PLUS 7 months ago | more

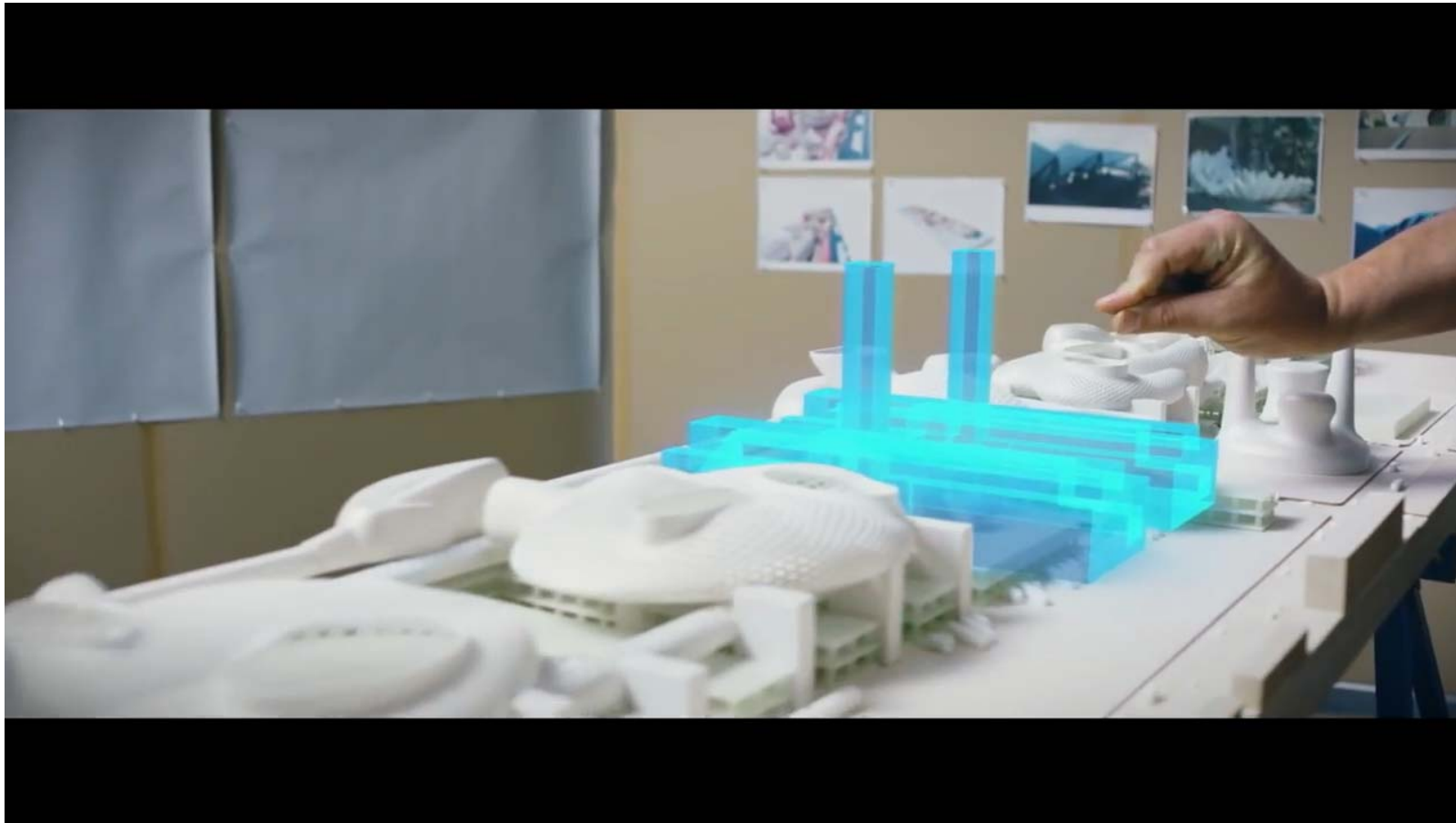
CREDIT: Keiichi Matsuda

<https://vimeo.com/166807261>

<http://thenextweb.com/shareables/2016/07/14/insane-video-shows/#gref>

Business, professional, and
educational applications of AR

Microsoft Hololens – Architecture App



<https://www.youtube.com/watch?v=12qd4rdN4N4&feature=youtu.be>

Vuzix – Construction App



<https://www.vuzix.com/Products/m3000-smart-glasses>

Vuzix – Warehouse App



<https://www.vuzix.com/Partner/Index/4> https://www.youtube.com/watch?v=9Wv9k_ssLcl&feature=youtu.be 26

Vuzix – Repair App



<https://www.vuzix.com/Partner/Index/4> <https://www.youtube.com/watch?v=UlpGDrSmg38>

Virtual Reality (VR)



Google Cardboard
\$15



Samsung Gear VR
\$60



Sony Playstation VR
\$400



Oculus Rift
\$600



HTV Vive
\$800

VR Games

VR Gaming Overview



<https://www.youtube.com/watch?v=EP4W5ZqYp5s>

credit: Gamespot

33

Playstation: RIGS Mechanized Combat League



<https://www.youtube.com/watch?v=Rnqlf9EQ2zA>

Playstation: Farpoint



<https://www.youtube.com/watch?v=5ylpi8SdeWg> <https://www.playstation.com/en-us/explore/playstation-vr/games/> 32

VR Interactive Fun

Thrills

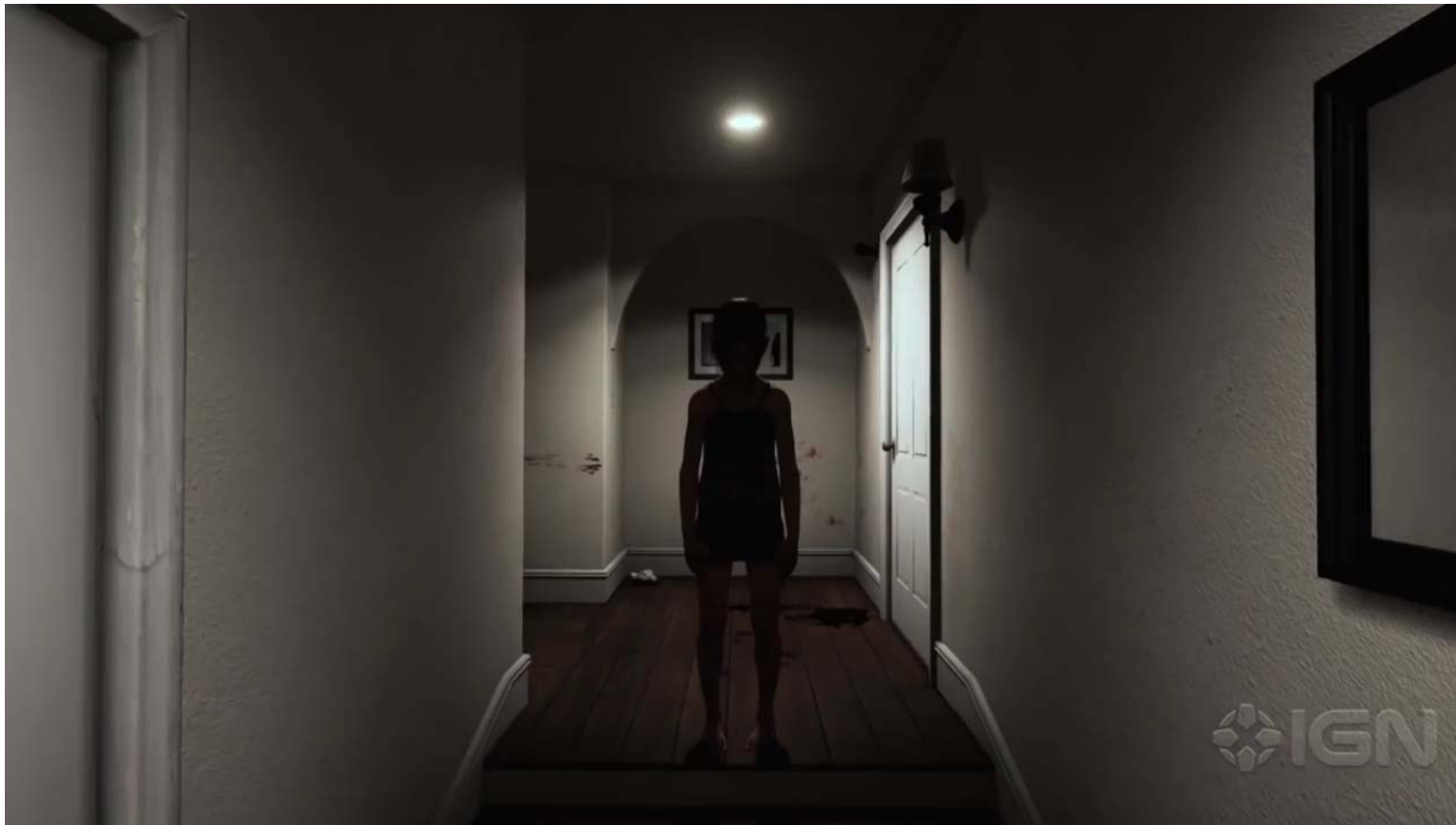


<https://www.youtube.com/watch?v=kGSMypiRsd8>

credit: jacksepticeye

36

Chills & Thrills



<https://www.youtube.com/watch?v=Qsna1ChGt0E>

credit: IGN

37

Serious VR Applications



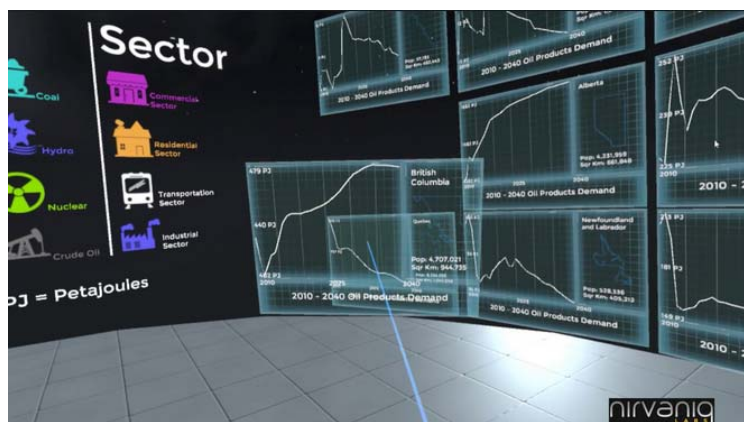
Combat Training

<https://www.wearable.com/vr/how-vr-is-training-the-perfect-soldier-1757>



Safety Training

<http://www.roadtovr.com/this-vr-training-simulation-is-one-of-the-best-weve-ever-seen/>



Big Data Visualization

<https://www.youtube.com/watch?v=wacNaAVGXdU>

Cinematic VR

A Night at the Movies?



<https://www.youtube.com/watch?v=6vTB271KPqI>

credit:Amsterdam calling

42



<https://www.jauntvr.com/>

New York Times

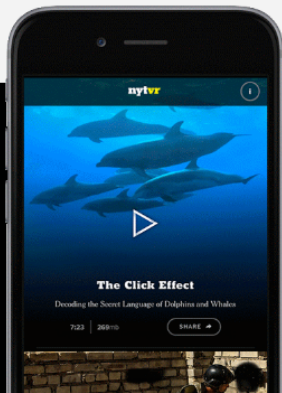
Home

The New York Times

See for yourself.

nytvr

Put yourself at the center of our stories
in an immersive virtual-reality experience.



All it takes is a smartphone.

Go underwater or on the campaign trail. Experience life through the eyes of a refugee or explore previously unseen worlds. Experience stories reported by award-winning journalists, all told in an immersive, 360-degree video experience.

<http://www.nytimes.com/marketing/nytvr/>

No Surprise here...

No surprise here



<https://www.youtube.com/watch?v=a9dsTmx7hus>

Back to the sublime

New Ways to Tell a Story



The image shows a YouTube video player interface. The video title is "USC JauntVR Lab Director Candace Reckinger". The video thumbnail is split: the left side shows the USC School of Cinematic Arts building, and the right side shows a Jaunt VR camera with the word "JAUNT" on it. The video player controls show a play button, a progress bar at 0:00 / 5:33, and icons for closed captions, settings, and full screen. Below the video, there is a channel name "Anthony Magliocco" with a profile picture, a "Subscribe" button, and a view count of "72 views".

USC School of Cinematic Arts

JAUNT

0:00 / 5:33

USC JauntVR Lab Director Candace Reckinger

Anthony Magliocco

Subscribe 3

72 views

New Ways to Tell a Story



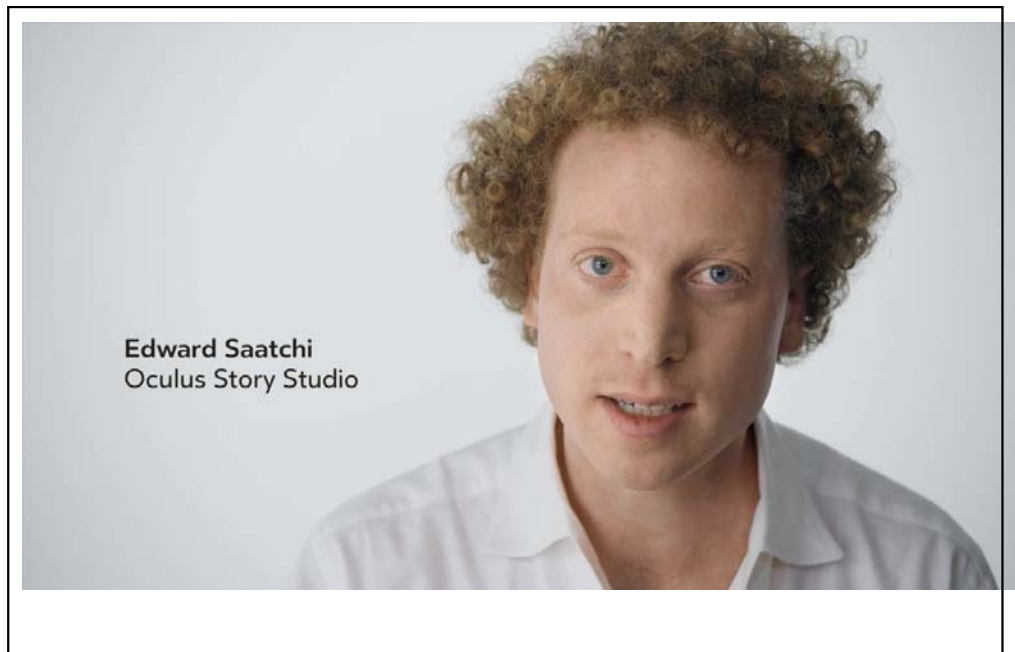
<https://www.youtube.com/watch?v=AvL1qUQCblY>

Who will be the George Lucas of VR? Film schools just started teaching it

By [Keith Nelson Jr.](#) — February 9, 2016 3:00 AM

Read more: <http://www.digitaltrends.com/virtual-reality/oculus-jaunt-nyu-usc-vr-classes/#ixzz4VwQetcr4>

Follow us: [@digitaltrends on Twitter](#) | [DigitalTrends on Facebook](#)



Stranger Things and the Upside Down

Not VR now but a recipe for
cinema VR success?

Stranger Things and the Upside Down



Not VR now
but a recipe
for cinema
VR success?

https://www.youtube.com/watch?v=XWxyRG_tckY

The gate....I opened it.



https://www.youtube.com/watch?v=XWxyRG_tckY

A stylized graphic of a bridge with two arches, rendered in light blue and pink lines. The bridge spans the width of the page, with its supports extending down to the bottom. The company name is centered over the bridge.

TECHNOLOGY FUTURES INC.

(512) 258-8898 • www.tfi.com

Your Bridge to the Future

Drivers and Constraints

- What are the drivers for adoption?
 - How strong are they?
- What are the constraints on adoption?
 - How strong are they? Can they be overcome?
- What is the balance of drivers and constraints?
 - Will this change?
- What are the important areas of uncertainty that need to be resolved?
 - How can these be addressed to everyone's satisfaction?

A stylized graphic of a bridge with two arches, rendered in light blue and pink lines. The bridge spans the width of the page, with its supports extending down to the bottom. The company name is centered over the bridge.

TECHNOLOGY FUTURES INC.

(512) 258-8898 • www.tfi.com

Your Bridge to the Future