

XR (Augmented, Mixed and Virtual Reality) Programming in Libraries

An Infopeople Webinar
July 16, 2019

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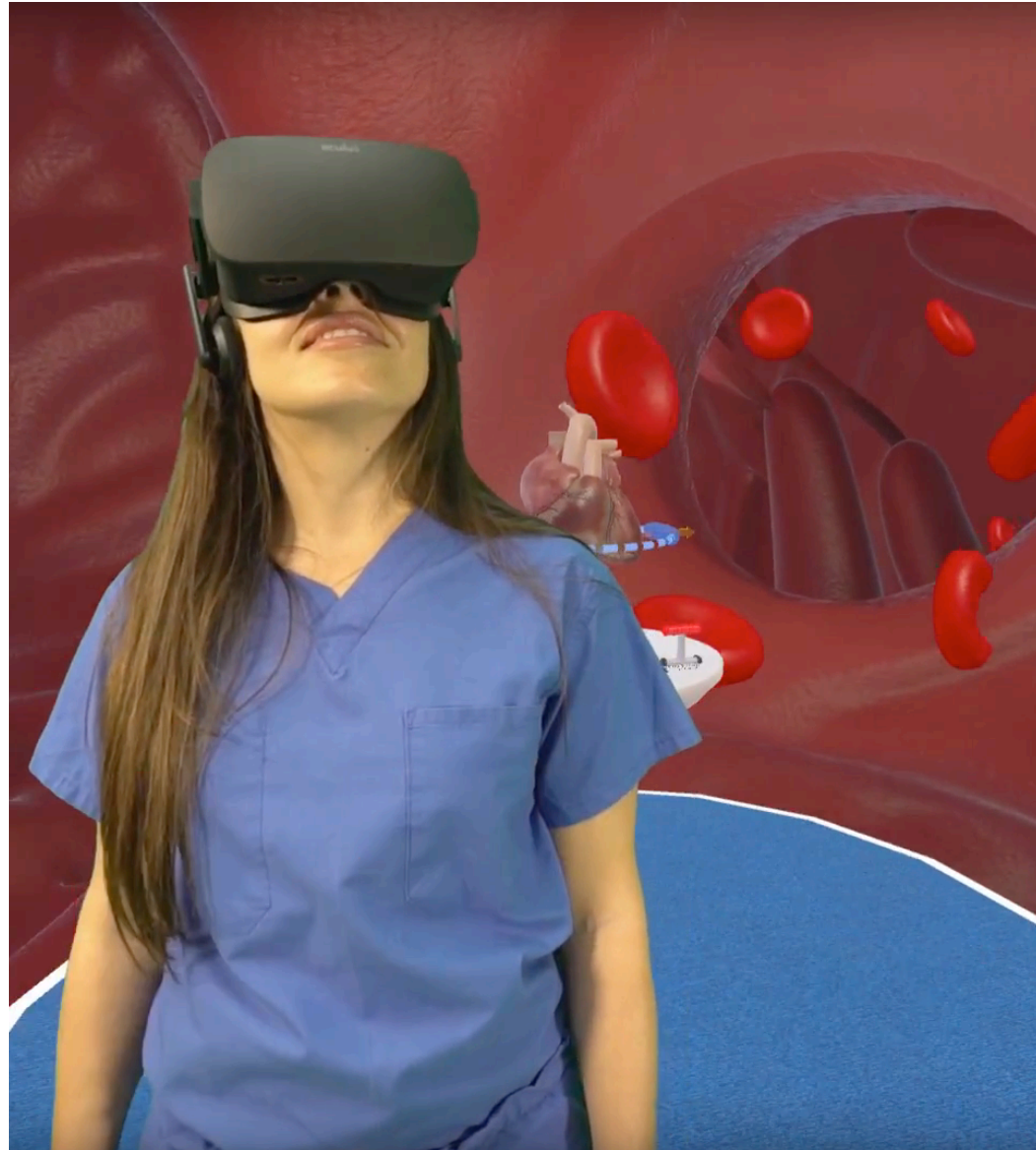
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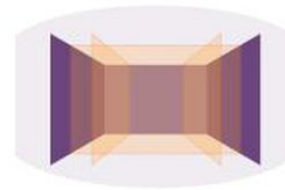
XRLibraries: Director





VIRTUAL REALITY (VR)

Fully artificial environment



Full immersion in virtual
environment



AUGMENTED REALITY (AR)

Virtual objects overlaid
on real-world environment



The real world enhanced
with digital objects



MIXED REALITY (MR)

Virtual environment combined
with real world



Interact with both the real world
and the virtual environment



Virtual Reality

Head Mounted Display Systems

Tethered	Wireless
Oculus RIFT & S	Oculus Quest& Go
HTC VIVE	HTC Focus
HP Mixed Reality	Lenova



Personal computers: Desktops and laptops

I7 Intel processor
8GB of RAM 16 GB recommended
4GB of VRAM.
Two USB 3.0 ports
HDMI 1.4
1920 x 1080 display
Windows 8 or 10



Augmented Reality

Head Mounted Display Systems



Magic Leap

Apple

HoloLens

MIX

Samsung

Vuzix

Smart Phones & Tablets

Iphone

Samsung

Google

Huwei

Ipad

Android





IMMERSIVE

INTIMATE

EMPATHY



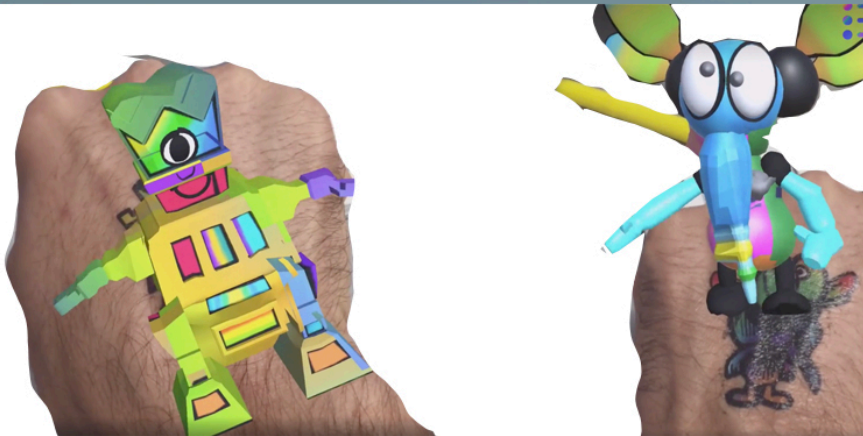
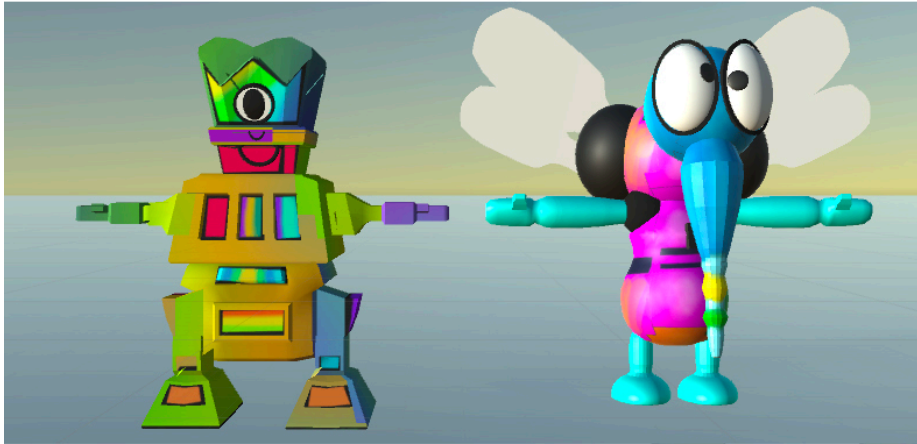
AR AUGMENTED REALITY

Augmented reality (AR) is a type of interactive, reality-based display environment that takes the capabilities of computer generated display, sound, text and effects to enhance the user's real-world experience.

Augmented reality combines real and computer-based scenes and images to deliver a unified but enhanced view of the world.



ARTTATTOOS



VR

Virtual reality refers to computer-generated environments or realities designed to simulate a person's physical presence in a specific environment designed to feel real. The purpose of VR is to allow a person to experience and manipulate the environment as if it were the real world. The best virtual realities are able to immerse the user completely.

VIRTUAL REALITY





MR

Mixed reality not just overlays but anchors virtual objects to the real world. Users remain in the real-world environment while digital content is added where a user can interact with virtual objects. Mixed reality will democratize intelligence.

MIXED REALITY





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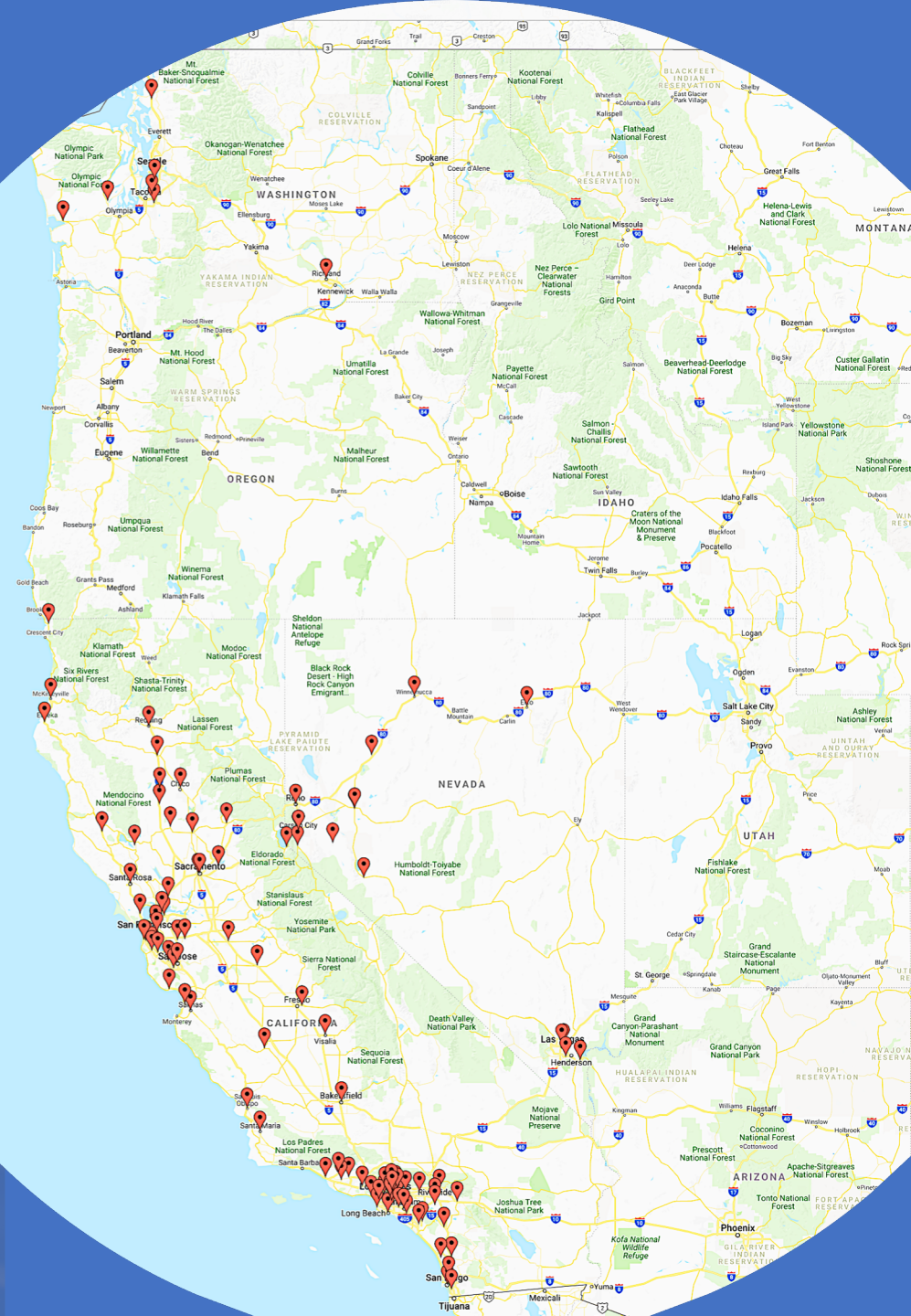
IMMERSIVE STORYTELLING

Cinematic VR (360 video) simulates a user's physical presence and environment to allow for user interaction. 360° video is filmed using a panoramic video camera system and played back as an equirectangular video file which allows the user to look around the scene on the web, on smartphones, and in VR headsets.





- **VR Pilot Installations**
- **California 2016 -2019**
- **100 libraries**
300 systems
- **Nevada 2018- 2019**
- **20 libraries**
- **Washington 2018- 2019**
- **20 libraries**





**California State Librarian
Greg Lucas:**

XR Technologies in Public Libraries

XR Community Outreach & Partnerships

- Libraries help people experience XR
- Existing library events and programming
- Tech, MAKERSPACE or STEAM programs
- Adult VR Days
- Bookmobiles
- Partnerships promote XR
- Schools / teachers
- Senior Centers
- Parks and Rec
- Local Museums



Nevada XR Library Pioneers

Emerging Technology Early Adaptor Program



In a year-long pilot program, emerging technology takes center stage in 15 Nevada libraries and the Fleischmann Planetarium.



Nevada XR Library Locations

Best Buy Teen Tech Center —
Las Vegas-Clark County Library District
Boulder City Library
Carson City Library
Churchill County High School Library
Churchill County Library
Douglas County Library System
Elko/Lander/Eureka County Library System
Fleischmann Planetarium — Univ of Nevada Reno
Henderson Libraries
Humboldt County Library
Lyon County Library System
Mineral County Library
North Las Vegas Library District
Pershing County High School Library
Washoe County Library System
West Las Vegas Branch Library —
Las Vegas-Clark County Library District



The Nevada State Library is leading statewide workforce development in Nevada's priority industries for in-demand occupations.

- Nevada Career Explorer career database
- 360 video from XR Libraries
- Focused virtual and augmented reality experiences
- STEAM and course lesson enrichment modules



XRSTARS



XR Library Playbook:
Best practices for successful XR program integration

August 16
12:00 pm
PST