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Notable VR Apps

Many apps can be found on the Quest store; more can be found on Sidequest (https://sidequestvr.com/), a website that offers indie VR apps and experiences, and can load locally-developed Unity apps. Sidequest apps are broken into categories such as adventure, climbing, combat, educational, escape, etc.

Beginner apps for the Quest headset

Good intro to first-time VR users as well as new Quest users.

- First Steps: ~8 minute experience showing how to use the headset and its controls.
- Oculus First Contact: Good demo of Oculus and VR capabilities.
- First Hand: Demonstrates hand gestures in the Quest.
- First Encounters: Fun AR game where aliens invade your real world space.

Arts/Music

- Arkio: "import reference images, 3D models and scenes from Unity, Revit, Rhino, SketchUp, LiDAR apps and more." Free/monthly pricing. Mac app appears more limited than pc app.
- <u>Maestro</u> (\$24.99; <u>demo available</u>): 15 minute virtual conductor experience; great handtracking.
- <u>Pencil</u> (\$10.99): app that projects an image to a drawing surface, and has interactive drawing lessons. Works best with Quest 3, as the Quest 2 passthrough camera is very hard to see details of the sketch being created. <u>Review</u>
- Tilt Brush (\$20): 3d art drawing; discontinued.
- <u>Virtuoso</u>: VR music app.
- VRtuos: VR piano app; several more piano vr apps out now.
- <u>Wander:</u> Travel around the world and see places across time to compare how things have changed.
- Yorescape: Virtual tour app; tour ancient cities and virtual museums; content created by historians.
- Zeuxis VR: Immersive art history project exploring art and architecture in Italy from Lafayette College.



Languages

There's several language apps out there that let you practice a foreign language. Here's a few to try out.

- Language Lab
- Mondly: language immersion.
- Noun Town (\$14.99): Learn Japanese, Chinese, Spanish, French, German, and Italian.

Sciences

There are several medical-science apps that allow students to interact with human and animal objects. Here's a few:

- Anatomy VR apps
 - Human Anatomy Puzzle: (\$2.99)
 - o 3d Organon VR Anatomy: (demo, subscription)
 - Anatomage VR: (broken webpage, but has some nice anatomy software/products)
 - o 3D Organon VR
 - BodyMap
 - Dissection Master XR
 - Organon VR Anatomy
- <u>Futuclass</u>: chemistry in VR; demo and paid content. Has VR lesson plans, online quiz for before and after the experience. Demo has reaction balancing, atom structure, salts, and chemical bonds experiences.
- <u>Inspiritvr.com</u>: 3d models and VR for Bio, Chem, and Physics science classes.
- Kosmos school: live science VR classes.
- LookSee: Molecule builder
- Molecule Builder (\$14): Chemistry molecule builder.
- Nuclear reactor experiences and apps:
 - Vpulse demo app: Demo of nuclear reactor training. Can create a digital twin of a nuclear power plant for supplemental training purposes.
 - 360 video tour of nuclear power plant: https://www.youtube.com/watch?v=bGqabwyoaeM
 - 2-d video of nuclear reactor: https://www.youtube.com/watch?v=3iQBMyGmg-8
 - Hitachi VR simulators:
 https://www.gevernova.com/nuclear/services/training/virtual-training-simulator.
 We'd need to contact them to see if we can set up the apps on the headsets.



- ReacTour VR app: Take a tour of 2 different nuclear reactor locations. Fun videos to watch.
- Virtual Ford nuclear reactor: https://available-inventions.umich.edu/product/the-virtual-ford-nuclear-reactor
 https://available-inventions.umich.edu/product/the-virtual-ford-nuclear-reactor
- Nanome: Explore molecules in either an augmented or virtual reality setting.
- <u>Titans of Space:</u> Explore the solar system.
- <u>VXR Labs</u>: Many lab simulations as a subscription package; chemistry and dissection



Notable VR and 360 video experiences

Here are several recommended VR apps and experiences.

- Anne Frank: Visit the house of Anne Frank virtually.
- Clouds Over Sidra (YouTube VR): <u>MIT homepage</u>; <u>United Nations website</u>: Takes you to the Za'atari camp in Jordan.
- <u>Blue angels</u>: View inside a cockpit: 360 video and images of being in a fighter airplane.
- <u>Chapel</u>: Explore a reconstruction of an ancient Byzantine church in ancient Cappadocia, was built on the Lanier Theological Library grounds in Texas. Has Jewish scripture translations and a guided 10 minute tour of the chapel itself.
- <u>Ecosphere</u>: Explore Fiji, Columbia, Kenya, and other places in VR; winner of 360 storytelling.
- Multiverse: Explore the Planetarium
- Google earth VR: Explore 360 views of google earth.
- Hamilton musical: Watch a 360 video performance of the "Wait for it" song.
- <u>Israel VR tour:</u> Tour Israel and locations such as Bethlehem, the Galilee, and Jerusalem in a 360 video (5 minutes long)
- JFK Memento (\$9): A new (2023) VR immersive documentary detailing the JFK assassination. View trailer
- <u>Journey to the edge of space</u>: 360 video exploring 90,000 feet into the stratosphere.
- Mission: ISS Explore the space station. space.com review
- National Geographic Explore VR (\$10): Explore Antarctica and Machu Picchu
- <u>The National Parks</u> (with President Obama): 360 video. <u>Review of Obama and the</u> National Parks.
- Nature Treks VR (\$10): Explore an immersive nature environment.
- NYT VR Daily 360 videos: Walking New York, Falluja
- Notes on Blindness
- Ocean Rift (\$10): Explore the ocean virtually.
- On the Morning you Wake (to the End of the World): Simulation of Emergency SMS to Hawai'i residents in 2018.
- <u>Plundering</u>: Explores issue of Nazi looting during WW2; based on books by Anders Rydell.
- Space Explorers: The ISS Experience: View the ISS in an immersive, multi-episode
 experience recorded in the ISS; watch astronauts live and work in the ISS as well as
 view the world from afar. View in Quest TV; produced by Felix & Paul Studios, an
 award-winning VR production company. More info



- <u>Traveling while Black</u> <u>The Guardian review</u> You'll need to launch the Felix and Paul studios 2024 app to view the experience, as the standalone app has issues and needs to be updated.
- Treehuggers: http://mattrowell.com/treehuggers.htm: 360 tree climbing experience.
- Wander (\$10): Explore the world (view the taj mahal, great pyramids, london bridge, etc).

Immersive sound examples

These provide a 360 view of a music performance with spatial sound; when you turn to face an area, you hear more of that sound from that area.

- Maler #9: https://www.youtube.com/watch?v=luCu7HkA-E
- Nicole Row Headspace 360: https://www.youtube.com/watch?v=ce0KosnY2eg



VR Communities/Social Rooms

These have active communities where you can engage with others in a 3d space; some have regular meetups, and other have private rooms that you can hold a class/meeting and invite other users.

- Engage VR: https://engagevr.io/: Need to setup a free account; host room for 4 people.
- Glue: social app; requires an account.
- Meta Horizon worlds: like Rec Room but trying for more adult/mature audience perhaps.
- Mozilla Hubs: https://hubs.mozilla.com/: can have private room and invite others; both app, browser, and headset; now defunct unfortunately.
- Multiverse
- Rec Room: generally filled with kids/teens, but some fun areas to explore. Tied in with user account in Quest.
- Rumii: Needs account setup; up to 5 users; multiple platforms; do not use, not creating rooms in current app (2022-09).
- <u>VR Chat</u>: requires an account.

VR Museums & Exhibitions

A few curated lists here:

- Google Arts and Culture website
- Travel Leisure list of museums with virtual tours list
- V21 Artspace: Has a lot of VR exhibitions, some for Quest, some web-based
 - Still I Rise
 - Freedom: Open Call web-based, has options for headset views
 - People are Strange web-based, has options for headset views
 - Barbara Chase-Riboud web-based, has options for headset views
 - <u>Ingenuity</u> web-based, has options for headset views
 - Traces of a Cathode web-based, has options for headset views
 - The Workhouse web-based, has options for headset views
- Virtual Worlds Museum
 - Museum Hubs: has a page of VR worlds to explore
- <u>Wander</u> travel around the world and see places across time to compare how things have changed
- Yorescape: Virtual tour app; tour ancient cities and virtual museums; content created by historians
- Zeuxis VR: Immersive art history project exploring art and architecture in Italy from Lafayette College



Lots of these museum tours and exhibitions are linked in the Google Arts and Culture website, which are pretty great!

- Auschwitz, a Virtual Reality tour (in museum experience, but has a 6 minute 360 video on youtube)
- Art Plunge: <u>Steam Oculus Rift</u> (requires PC-linked headset)
- Britannic:Patroness of the Mediterranean: Steam (requires PC-linked headset)
- British Museum 360 photos
- The Dawn of Art
- Getty Museum (Los Angeles, CA)
- Great Paintings VR: Steam
- Holocaust History and Memory Virtual Field Trip: 360 vides of exhibition
- Hornmoldhaus VR museum (city museum of Bietigheim-Bissinge in Germany): interactive exhibits in virtual world
- Infinite Art Museum
- The Kremer Collection VR Museum: Steam Oculus Rift (requires PC-linked headset)
- Louvre: Several online tours
- Metropolitan Museum of Art: Egyptian temple of Dendur, other VR tours
- Met 360 Project: 6 VR videos
- Michelangelo's Sistine Ceiling in VR (IL DIVINO): <u>Steam</u> (requires PC-linked headset)
- <u>Museos VR</u>: several museums to explore here; app subsidized by Spain's Ministry of Culture, so potentially some good content.
- <u>Museus USP VR</u>: interactive immersive exhibition of the four main Museums of São Paulo University;, features the Museu Paulista, Museum of Contemporary Art, Museum of Zoology and the Museum of Archeology and Ethnology.
- Museum of Other Realities
- <u>National Museum of American Jewish History</u>: 360 virtual exhibitions of Foundations of Freedom (1654-1880), Dreams of Freedom (1880-1945), Choices and Challenges (1945-today), and Only in America
- National Museum of Modern and Contemporary Art, Korea: <u>Google virtual tour museum</u> website
- National Gallery of Art, Washington DC: 3 online exhibits
- MASP (Museu de Arte de São Paulo (Assis Chateaubriand São Paulo, Brazil)
- Mona Lisa: Beyond the Glass
- Musée d'Orsay, Paris: Monet, Gaugui, Rodin, etc
- Nefertari: Journey to Eternity: Steam Oculus Rift (requires PC-linked headset)
- Notre Dame De Paris: Journey back in time: <u>Steam Oculus Rift</u> (requires PC-linked headset)
 - Rebuilding Notre Dame: <u>MetaQuest TV YouTube preview</u>
- Roald Amundsen's House: Steam



- Smithsonian American Art Museum "Beyond The Walls"
- Smithsonian National Air and Space Museum
- <u>Uffizi Gallery</u> in Florence Italy:
- <u>Virtual Antiquities Museum</u>: Quest app, good experience for Anthropology class <u>Sidequest</u>
- <u>Vatican Museum</u>: Raphael's rooms, sistine chapel, etc
- <u>Van Gogh Museum</u> (Amsterdam, Netherlands)
- Sydney Jewish Museum: Virtual tour of Jews from Islamic Lands
- VR Museum of Fine Art: Steam

Create your own art gallery in VR? Some easy solutions; Reed had an art class create their own gallery showing in VR using the Unity platform a few years back as well.

- https://framevr.io
- https://www.spatial.io (designed more for entertainment)
- https://www.artsteps.com (designed for displaying 2D artwork)

Sociology/Social Commentary/Empathy

- Steps of Privilege
- Anne Frank: Visit the house of Anne Frank virtually.
- <u>Baskets</u>: Virtual Museum of Native American Basketry is a VR experience hosting over 100 Native American Baskets woven by Native American Indians from over 25 different tribes
- <u>Becoming Homeless</u>: A VR experience from Stanford Labs; available on Steam, requires a VR headset connected to SteamVR.
- <u>Body of Mine</u> (\$9.99): Inhabit the body of another gender and listen to stories from transgender individuals.
- Changing Same: An American Pilgrimage: Explore racial injustice in the US. Review from amdoc.org. Episode 1 available, more expected to come. Description from developer: "The Changing Same: An American Pilgrimage, is an episodic virtual reality experience on racial justice. This visceral magical realist adventure explores the critical role that U.S. history plays in forming a deeper and more meaningful understanding of the current social and cultural conditions that continue to shape the nation. Through magical realist elements of time-travel, participants are invited to traverse the 400-year history of racial inequity in the U.S. while projecting forward to a joyful, Afrofuturist world of possibilities."
- <u>Clouds Over Sidra</u>: 360 video (from the website description): The Za'atari Refugee Camp in Jordan is home to over 80,000 Syrians fleeing war and violence. Half of these



are children. Clouds Over Sidra is the story of a 12 year old girl who has lived there since the summer of 2013. The film follows her to school, to her makeshift tent and even to the football pitch.

- Emperor: (from the website description): EMPEROR is a 40-minute interactive and narrative experience that puts you inside the brain of a man suffering from aphasia. You not only share the experience of a father who has lost his ability to speak, but also hear the story of his daughter, who is trying to communicate with him. You join her quest to unravel the past that he can no longer talk about, and discover how his relationship to words is connected to his memories. Step by step, clue after clue, you will dive alongside her into the inner world of this man transported to the mysterious territory of Aphasia, shown as a black & white, surrealist landscape. (Venice Immersive Achievement Prize 2023)
- Goliath: A 25-minute animated virtual reality experience about schizophrenia, gaming and connection, narrated by Tilda Swinton.
- IN PROTEST: Grassroots Stories from the Front Lines: A four-volume series; each
 highlights a different American city, profiling activists as they confront inequality and
 injustice in everyday life.
- <u>Traveling while Black</u> Read <u>the Guardian review</u>. You'll need to launch the Felix and Paul studios 2024 app to view the experience, as the standalone app has issues and needs to be updated.
- Notes on Blindness
- Now is the Time: Experience MLK's "I Have a Dream" speech
- Resonant: Resonant is an immersive VR experience that brings Hopi history, heritage, and culture to life. Explore two ancestral sites—Wupatki National Monument and Mesa Verde National Park—through interactive storytelling, sensory landscapes, and hands-on abilities like pottery making, constellation drawing, and soundscape creation. Written and narrated by members of Hopi communities, Resonant highlights Indigenous knowledge and the ongoing connection of Hopi people to ancestral landscapes. (from Oculus store description)
- Women in Spaceflight (available via Meta Quest TV app) More info
- <u>1000 Cut Journey</u>: See through the eyes of a Black male as they experience racism in the classroom, an encounter with the police, and workplace discrimination.
- <u>We Live Here</u>: experience homelessness
- You Destroy. We Create | The war on Ukraine's culture: Ukrainian art and culture have become targets of the ongoing war, and meet the inspiring people on the frontlines protecting it
- <u>Journey to Civil Rights</u> Begin a journey on La Amistad Slave ship understanding the story of the kidnapped Africans and how they overthrew their captors to gain their



freedom. The journey continues to the Underground Railroad and Harriet Tubman and ends at the bridge in Selma where the 1965 Civil Rights marches began.

- Kentucky augmented reality experience. From the website: "depicts historical Black figures describing their lifetime and the legacy they hope to leave on the commonwealth." QR code on 19 plaques in different areas of Kentucky brings an AR experience.
- JFK Momento (\$8.99): Documentary on the JFK assassination
 - https://mixed-news.com/en/jfk-memento-review/
 - https://www.provideocoalition.com/jfk-memento-using-vr-to-explore-the-1963-hist
 orical-events/
 - View a demo in Oculus Television (15 mins experience)



Social Change apps

A compilation from the Educause XR group; check the Sociology/Social Commentary section as well.

- We Live Here (Meta Quest) about.meta.com/community/vr-for-good/we-live-here
- This is Not a Ceremony (Meta Quest) about.meta.com/community/vr-for-good/...
- Notes on Blindness (Rift S) www.oculus.com/deeplink/?action=view&path=app/...
- Dementia (Rift S) <u>www.oculus.com/deeplink/?action=view&path=app/...</u>
- Baskets (download)- <u>library.unr.edu/collections/digital-collections/...</u>
- Indigenous Futurisms (web experience) my.matterport.com/show/?m=87KgpmiBhcP
- The Key (Meta Quest) <u>about.meta.com/community/vr-for-good/the-key</u>
- Upstander (Meta Quest) <u>about.meta.com/community/vr-for-good/upstander</u>
- On The Morning You Wake (To the End of The World) (Meta Quest)www.meta.com/experiences/5334662579895130
- In Protest (Meta Quest)- <u>about.meta.com/community/vr-for-good/in-protest-series</u>
- You Destroy. We Create | The war on Ukraine's culture (Meta Quest) www.oculus.com/experiences/media/1312735029529063
- Traveling While Black (Meta Quest) about.meta.com/community/vr-for-good/...
- 1000 Cut Journey (Meta Quest) www.meta.com/experiences/6955891684483867/
- The Stanford Ocean Acidification Experience (Rift S) www.meta.com/experiences/pcvr/933665076734267
- Becoming Homeless: A Human Experience (Rift S)store.steampowered.com/app/738100/...
- Unearthed (Meta Quest) sidequestvr.com/app/31900/unearthed
- Ocean Rift (Meta Quest) www.meta.com/experiences/ocean-rift/2134272053250863
- MLK: Now is the Time (Meta Quest)/ www.meta.com/experiences/4790561384366997
- I Am A Man (Rift S) www.meta.com/experiences/pcvr/1558748774146820
- The Virtual Martin Luther King Project (360 video) <u>vmlk.chass.ncsu.edu/experience/virtual-reality</u>



Games

A short selection of VR apps that are pretty fun experiences.

- <u>Vader Immortal</u> (\$10): good VR movement and different controls; quality graphics. 3 episodes to download.
- Sports Scramble Demo
- <u>Bait</u>: VR fishing
- Beat Saber Demo: Probably the most popular music/drumming VR app for the Quest.
- Ragnarok (\$25) Similar to Beat Saber, but you are a viking boat commander charged with keeping the beat strokes
- Space Plrate Demo
- Creed (boxing) Demo
- Journey of the Gods Demo
- BOGO Demo
- SuperHot Demo
- Epic rollercoaster Demo
- Rec Room
- <u>Fruit Ninja</u> (\$14.99)
- Temple K (Sidequest): rock climbing/puzzle game in VR
- Gorilla Tag
- Deepwatersolo (Sidequest)
- Quest Doom (Sidequest)

VR Creation Apps

Create an immersive experience, either with 360 images/video you've recorded, or create a VR environment.

- Arkio: "import reference images, 3D models and scenes from Unity, Revit, Rhino, SketchUp, LiDAR apps and more." Free/monthly pricing. Mac app appears more limited than pc app.
- ArtSTeps: https://www.artsteps.com (designed for displaying 2D artwork)
- Flipside Studio Create 3d environments
- FrameVR: https://framevr.io
- Sketchfab 3d model repository
- Skybox (\$10): View 360 content from youtube and media uploaded to the device.
- <u>Spatial IO</u> has a <u>Spatial Creator Toolkit</u> powered by Unity.
- Spoke: create 3d scenes for use in Mozilla Hubs (Hubs is now defunct)
- Tilt Brush (\$20): 3d art drawing



- Townscaper (\$10) Build 3d buildings/worlds; looks like watercolor illustrations
- <u>Unity</u>: Unity is a gaming creation app that can author VR content for Quest and other headsets.
 - <u>Unity asset store</u> has many free and paid virtual models to download and use in Unity projects.



360 video apps & content

These offer 360 videos, but don't engage in a 3d space; generally they are passive viewing experiences, but they do offer some of the better VR videos out there.

- Big Screen: View 360 content from youtube, prime, and other apps, or view media uploaded to the device. Can share room with others for a common viewing experience.DEO VR
- <u>Ecosphere</u> explore Fiji, Columbia, Kenya, and other places in VR; winner of 360 storytelling
- Firefox Reality
- Look and Play: 3d video player
- Melody music VR experiences
- Next VR
- Oculus TV
- Oculus Video
- RedBull TV 360 sports experiences
- Skybox (\$10): View 360 content from youtube and media uploaded to the device.
- Within
- Youtube VR

VR websites

Useful Quest websites

- Sidequest: https://sidequestvr.com: A website and app that offers indie VR apps and experiences, and can load locally-developed Unity apps. Apps are broken into categories such as adventure, climbing, combat, educational, escape, etc.
- Oculus Quest Reddit: https://www.reddit.com/r/OculusQuest/

Websites with VR/AR apps/projects

- Dev Studio: <u>Dartmouth webpage of Data experiences/visualization</u>: has list of projects, but nothing since 2023
- MIT site with projects
- Beyond Zoom: XR for Teaching and Research in the COVID-19 Era conference series (Dartmouth) - very good stuff here; has links to presentations.
 - dartgo.org/bevondzoom1 (2020)



- dartgo.org/beyondzoom2 (2021)
- Messa Prieta Petroglyph Project (archaeology): Has a few 360 photos and 3d images.
- <u>Penn State experience catalog</u>: Curated list of resources/apps/experiences. Very in depth, with links, levels of guidance, and descriptions. Can search by headset, keyword, etc.
- http://www.anthonylovenheimirwin.com/virtual-reality-in-the-classroom: Explores VR use in the classroom.
- Futuclass Educational VR games Lists 40+ educational apps
- <u>Stanford Educational VR Applications Database</u> Broken link now; list used to be comprehensive
- VR Examples and Apps google doc link (copy of word doc handout from FTI 2017)
- Rob Theriaul's <u>list of apps for higher education</u>: Very extensive list compiled by Rob
 Theriaul, a VR education guru at Georgian College who uses 400+ headsets in courses,
 including indigenous languages and art courses.
- WondaVR: Allows for 360 video and 3d objects/environments; social multiplayer options available.
- Quest apps list from Arbor XR: This is from Arbor XR, which has a list of XR apps and their APK package names, but has a collection of apps to explore.
- <u>Virtual Worlds Museum</u>
 - Museum Hubs: has a page of VR worlds to explore



VR /AR Articles

- Dementia/Alzheimer's article
- Literature on XR:
 https://docs.google.com/document/d/1_7jCXE4aY3NEwB-Sw3yKywCEX79z3xCF9OG4
 7WLOBR4/edit
- VR experience on the holocaust: https://www.reuters.com/world/europe/virtual-reality-brings-holocaust-history-future-gene-rations-2023-01-27/
- University of Illinois at Urbana-Champaign: <u>VRchaeology website</u> (looks to be defunct now)
- Kentucky augmented reality experience. From the website: "depicts historical Black figures describing their lifetime and the legacy they hope to leave on the commonwealth." QR code on 19 plaques in different areas of Kentucky brings an AR experience.
- Teaching with VR: <u>public speaking</u>
- University of St. Thomas' "Culture of Encounter" exhibit with augmented reality
- Immersive conference 2025:
 - o Immersive Religion lightning round

Apps for Quest Development/Exploration

Unity

Unity is a gaming creation app that can also author VR content for Quest (and other) headsets.

- The <u>Unity Learn website</u> has a great set of guided tutorials that can start off a project fairly quickly.
- <u>Unity asset store</u> has many free and paid virtual models to download and use in Unity projects.



XR/VR/AR at Reed

Classes have explored VR

- Anthropology
 - Explore virtual museums
- Chemistry
 - Nanome molecular models
- English
 - Exploring digital personas
 - Experience 360 videos as presentation of Shakespeare plays
- Physics
 - Thesis on electromagnetic theory
- Psychology
 - Thesis on psychology experiment
- Nuclear reactor
 - Exploring the creation of a digital twin to supplement the training for using the reactor at Reed

Senior theses projects

- 2024 fall: Physics senior thesis was about simulating electromagnetic fields using VR (Laura Estridge).
- 2023 spring (approx): psychology senior used 360 video; they produced video, put into Quest headset to simulate touching hand/arm experiment.