NVIDIA VRWORKS SDK - GTC DC

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NVIDIA VR PLATFORM
WHO USES VIRTUAL REALITY?

DIGITAL CONTENT CREATION

MANUFACTURING

MEDICAL

ARCHITECTURE

DESIGN

COLLABORATION
VR IS REVOLUTIONIZING DESIGN
VR ENGINES
BEYOND GAMES

NVIDIA VRWorks Integrations
THE WORLD’S MOST ADVANCED VR GAME

NVIDIA VR FUNHOUSE

Fire Archer - Flow
Balloon Knight - PhysX
Clown Painter - Flex

Shooting Gallery - Destruction
Mole Boxing - Hairworks
Cannon Skeet - VRWorks
WORLD’S FIRST PHOTOREALISTIC, COLLABORATIVE DESIGN PLATFORM

<table>
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<tr>
<th>PHOTOREALISTIC GRAPHICS</th>
<th>INTERACTIVE PHYSICS</th>
<th>REAL-TIME COLLABORATION</th>
<th>GPU-ACCELERATED AI</th>
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<tr>
<td><img src="image1.png" alt="Image 1" /></td>
<td><img src="image2.png" alt="Image 2" /></td>
<td><img src="image3.png" alt="Image 3" /></td>
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SIMULATING REALITY WITH VRWORKS
SIGHT

SOUND

PHYSICS & TOUCH

CAPTURE
VR IS UP TO 7X MORE DEMANDING TODAY

PC Gaming : 60 MP/s  
(1920 x 1080 @ 30 Hz)

Virtual Reality : 450 MP/s  
(3024 x 1680* @ 90 Hz)

*VR render resolution for HTC Vive
SOUND
AUDIO REFLECTS YOUR ENVIRONMENT

Elevator

Symphony Hall

Meadow
SIMULATING AUDIO IN VR

SYNTHESIS

Creation of Source Sounds

DIRECTION

Location of Incoming Sound

PROPAGATION

How Sound Moves in Space
PHYSICS & TOUCH
REALISTIC PHYSICS

SIMULATING BEHAVIOR IN VR

PHYSX
FLEX
DESTRUCTION
HAIRWORKS
FLOW
CLOTH
HAPTICS

COLLISION DETECTION & DEFORMATION MODELING

FORCE

FRICTION

RESTITUTION

PhysX API

PhysX Constraint Solver

Haptics Layer
CAPTURE
VRWORKS 360 VIDEO SDK
WORKS WITH MULTIPLE CAMERA RIGS
Features

- Real-Time & Offline Stitching
- Up to 32 x 4k Camera Rigs

GPU Accelerated Pipeline

- Decode
- Calibration
- Equalization
- Stitching
- Encode
**WHAT IS NVIDIA VRWORKS?**

**COMPREHENSIVE DEVELOPER SDK**

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<th>GRAPHICS</th>
<th>HEADSET</th>
<th>TOUCH &amp; PHYSICS</th>
<th>AUDIO</th>
<th>VIDEO</th>
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<tr>
<td>LENS MATCHED SHADING</td>
<td>CONTEXT PRIORITY</td>
<td>PHYSX</td>
<td>VRWORKS AUDIO</td>
<td>VRWORKS 360 VIDEO</td>
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<td>SINGLE PASS STEREO</td>
<td>DIRECT MODE</td>
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<td>GPUDIRECT FOR VIDEO</td>
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<tr>
<td>MULTires SHADING</td>
<td>FRONT BUFFER RENDERING</td>
<td>WARP &amp; BLEND</td>
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<td>VR SLI</td>
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<td>SYNCHRONIZATION</td>
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<td>GPU AFFINITY</td>
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## NVIDIA VRWORKS SDK ADOPTION

### INDUSTRY LEADERSHIP

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<th>HEADSETS</th>
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<td>UNREAL Engine</td>
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<td>oculus</td>
<td>Unity</td>
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<td>OSVR</td>
<td>Autodesk Stingray</td>
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<td>STARVR</td>
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### ENTERPRISE APPLICATIONS

- Autodesk® VRED™
- FUnique
- Fuzor
- IC.IDO
- CAVRNUS
- SheenCity.com
- OPTIS
- Z Cam

BEYOND REAL
SEE THE DEMOS IN THE VR VILLAGE

IN THE ATRIUM @ GTC DC

MCLAREN 720S

CURIOSITY MARS ROVER

ISAAC LAB
VR RESOURCES

General
www.nvidia.com/vr

Developer
www.developer.nvidia.com/vr

VR Funhouse Mod Kit

NVIDIA Isaac

NVIDIA Holodeck
www.nvidia.com/holodeck
Thank You!

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