ICVR

THE GAME ENGINE REVOLUTION

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Games & Immersive Experiences
- VR & AR
- Video game design & development
- Interactive experiences using Unreal Engine & Unity

Engineering
- Full-solution development from server-side to client
- Complex cross-platform development Team augmentation

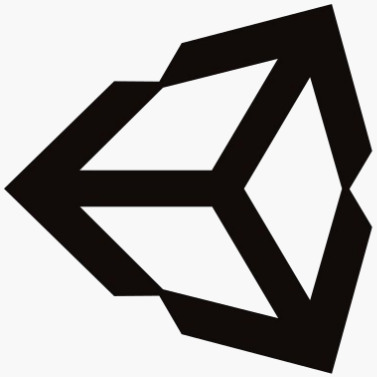
Virtual Production
- LED wall content built and operated in Unreal Engine
- Previz & techviz for shot planning and blocking
- Pipeline Deployment and Infrastructure setup

Digital Humans
- Photorealistic digital human photogrammetry reconstruction
- Game engine-ready assets
- Live driving through facial and body capture

Art Asset Creation
- 3D and 2D art asset creation, optimized for game engines
- Technical art & FX
- From stylized to photorealistic

THE GAME ENGINE REVOLUTION

UNREAL
ENGINE



unity

AR/VR | VIRTUAL PRODUCTION | EVENTS

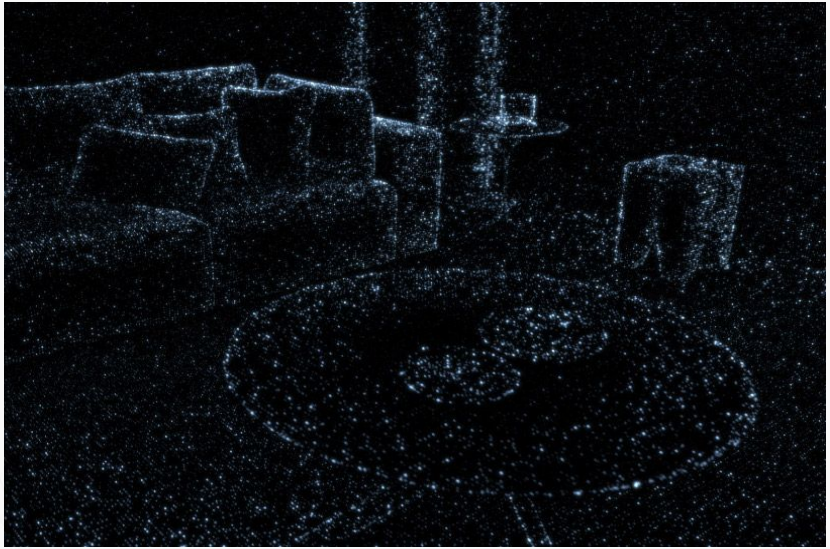
WHAT IS A GAME ENGINE?

- Toolkit for creating an experience that is
  - **Rendered in real-time**
  - **Interactive**
  - **Often 3D**
- Toolkit automates a lot of low-level programming so you can focus on features
- Originally used just for games, now expanded to include much more

UNITY

- Go-to engine for mobile games and Augmented Reality
- Lightweight, runs well on many different types of devices
- Huge amount of pre-made toolkits and assets available on the Unity Asset Store

UNITY - AUGMENTED REALITY



- Augmented Reality: taking the world around us, and placing a virtual layer on top of it
- Requires sensing devices like a camera, LiDAR, and the ability to interpret this data through software (computer vision)
- Apple has fully committed to AR
- Transition from phone AR to wearable

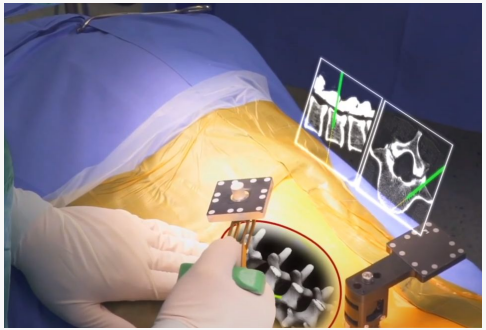
- **Rendered in real-time**
- **Interactive**
- **3D**

UNITY - AUGMENTED REALITY

Games

Training

Medical

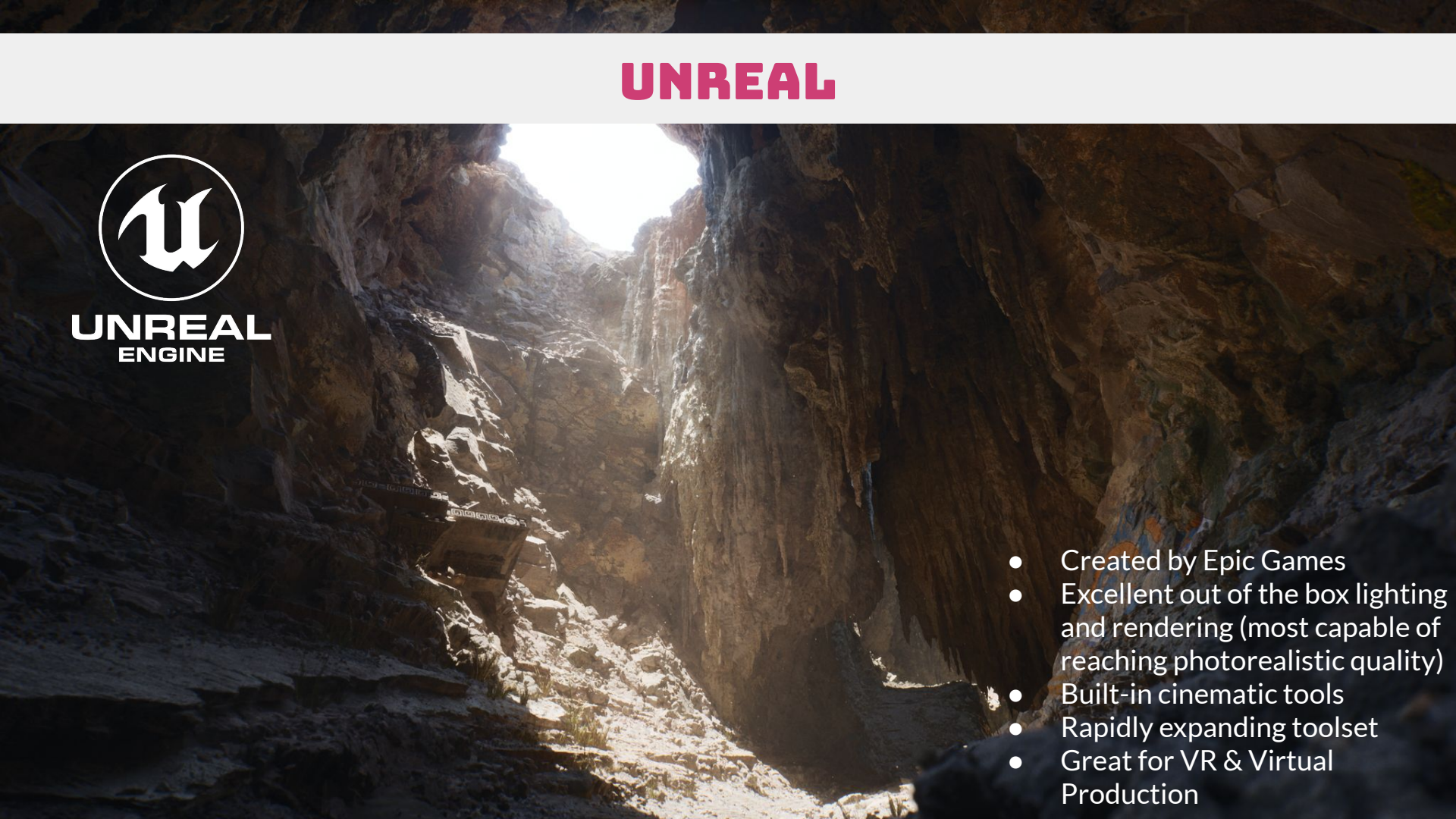


Marketing

Education

Productivity

UNREAL



- Created by Epic Games
- Excellent out of the box lighting and rendering (most capable of reaching photorealistic quality)
- Built-in cinematic tools
- Rapidly expanding toolset
- Great for VR & Virtual Production

UNREAL

Tech has reached the point where photorealistic (or high-quality stylized) real-time rendering is possible, and Unreal Engine is leading the charge on this.

Pre-rendered photorealistic scenes have been done for a while, i.e. film VFX.

But why is being able to do this LIVE important?

- Rendered in real-time
- Interactive
- 3D

UNREAL - FINAL PIXEL IN CAMERA

Why is it better than green screen?

- Emissive lighting, reflections
- Camera frustum
- Live lighting, scene changes, scouting, and more
- It can be a green screen too

Mandalorian

- Over half the shots from season 1 were shot in the LED volume
- LED wall final pixel shot percentage will increase more as the tech continues to mature

UNREAL - FINAL PIXEL IN CAMERA

UNREAL - LIVE ANIMATED CONTENT

Totally virtual live events

- John Legend
- Live-driven virtual avatar
- Chatted with the crowd, showed donations, etc.

UNREAL - LIVE ANIMATED CONTENT

UNREAL - LIVE COMPOSITING

Real camera footage combined with virtual scenes and virtual VFX (live compositing)

- Tomorrowland
- Weather Channel Typhoon
- League of Legends

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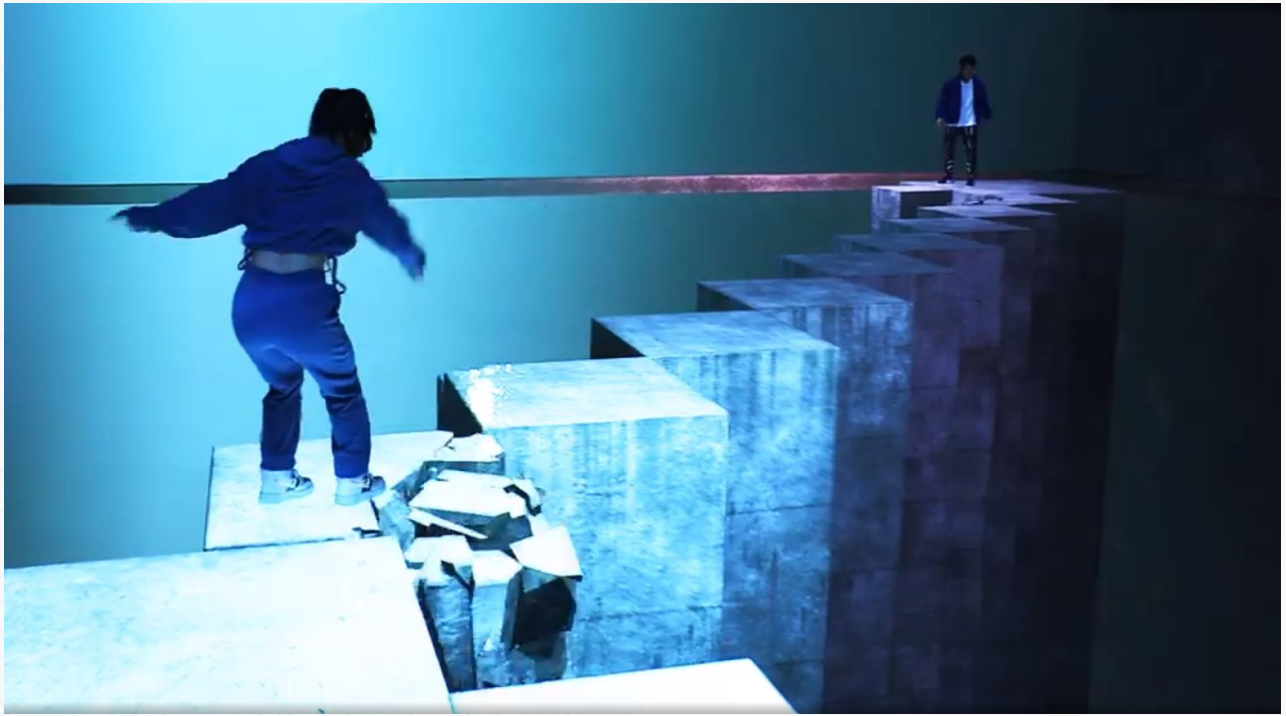

TECH GETTING BETTER BY THE DAY

Even better visuals and more tools are coming:

- More and more final pixel shots in camera as photorealism becomes common
- More and more tasks can be done without going to external programs
- Game Engines to remain a staple across industries
- Bringing people together in a post-COVID world

WHAT DO YOU NEED?

- Pipeline & Toolkit
- Trained people
- An adventurous idea

Questions?

https://tinyurl.com/icvrfollowup