

SUCCESS STORY | XR STUDIOS

REAL-TIME RENDERING ENHANCES VIRTUAL PRODUCTION FOR KATY PERRY'S MUSIC VIDEO PERFORMANCE



XR Studios

Image courtesy of XR Studios



XR Studios Uses NVIDIA RTX to Make the American Idol Finale a Teenage Dream

SUMMARY

- > XR Studios is a digital production company that specializes in producing cutting-edge content for the live entertainment industry.
- > For the American Idol season finale, the creative and technical teams needed to find a way to film the show after studios shut down due to the pandemic.
- > Many teams were working remotely across different locations, and needed to find a solution that allowed them to collaborate efficiently.
- > Using advanced technologies like disguise XR, Notch, and NVIDIA Quadro RTX GPUs, XR Studios created a virtual production with high-quality interactive visuals.
- > With real-time rendering, the teams produced stunning visuals and used disguise xR Spatial Mapping features to frame the images, so it could interact with choreography.

INTRODUCTION

Virtual productions are bringing new meaning to live performances. The latest technology from **disguise** helped create a groundbreaking virtual experience for the premiere performance of Katy Perry's "Daisies" during the American Idol finale in 2020. In the live performance, Perry is transported from the American Idol stage to a colorful virtual world. Animated scenes change in sync with the lyrics and tune of the song, while Perry interacts with the visual elements around her. To make this dream performance a reality, the pioneering creative team at XR Studios used a virtual environment and augmented reality, collectively known as XR. The visual content was created and rendered in real time, with imagery generated by **NVIDIA Quadro RTX 6000 GPUs**.

CHALLENGE STATEMENT

Popular TV series American Idol was close to finishing its 2020 season when the pandemic hit, causing the studios to shut down and productions to come to a halt. Due to travel restrictions, some of the creative and technical teams were working from around the world.

To produce the show's finale, the team decided to turn to virtual production. The idea was to have singer Katy Perry perform one of her latest songs, "Daisies," while she interacted with colorful

CUSTOMER PROFILE

XR Studios

Organization:
XR Studios

Industry:
Media &
Entertainment

Location:
Los Angeles, CA

Website:
xrstudios.live/



Image courtesy of XR Studios

SOFTWARE

disguise XR technology
Notch

HARDWARE

GPU: NVIDIA Quadro RTX 6000

REASONS FOR NVIDIA

- > The NVIDIA Quadro RTX GPU allowed the teams to create high-quality content for the virtual production and render images in real time.
- > Studios achieved greater rendering performance and new AI-accelerated capabilities using RTX technologies.

animations and visual elements around her. The studio would turn that performance into a virtual experience for audiences.

Working in the midst of a pandemic limited Perry's options for a live performance. But with virtual production, the creative and technical teams could execute a project within COVID-19 guidelines. So digital production company XR Studios, a resource for producers, agencies, and creative directors, helped the teams at American Idol create a stunning XR broadcast for their season finale.

SOLUTION STATEMENT

To achieve this performance, the pioneering creative team at XR Studios used a virtual environment and augmented reality, collectively known as XR. The visual content was created and rendered in real time, with imagery generated by **NVIDIA Quadro RTX 6000 GPUs**.

XR Studios filmed the event at PRG Studios in Los Angeles. The production included a number of safety procedures to protect the health and well-being of everyone involved.

The visual content was created and rendered in real time with **Notch**, a real-time authoring tool that was also used for Perry's live performance. The production was powered by disguise xR technology, which orchestrates LED, real-time content and camera tracking for production environments.

"The new disguise xR pipelines only work because of the advances in real-time rendering software and the RTX GPU. It's simply not possible to use pre-rendered content with xR," said Scott Millar, xR technical director for the virtual performance project. "Using Notch as the render engine and a disguise server powered by NVIDIA Quadro enables rendering in real time across multiple synchronized machines using NVIDIA Quadro Sync II."

With disguise xR technology and the rendering flexibility of Notch, the creative team was able to edit the content over a network while it played back live on stage.

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Scott Millar,
Technical Director, XR Studios

RESULTS STATEMENT

This project was unique from previous XR projects because the stunning visuals, created by Silent Partners Studios, had a narrative around it—meaning the animations had to change in line with the song and lyrics.

The look and feel of the performance proved challenging because solid, flat colors and simple textures made it difficult to complete the illusion of a physical LED disappearing and magically recombining within a virtual environment. But with the advanced technologies, the team made sure everything was as perfectly adjusted and calibrated as possible.

Using disguise xR Spatial Mapping features, they were able to frame the position of these worlds so it could work and interact with Perry’s choreography.

With disguise xR, all the teams involved were able to collaborate and understand each step to complete the project. And with the new **disguise gx 2c**, the latest media server that provides new capabilities for broadcast and live productions, studios can expect much greater rendering performance and new AI-accelerated capabilities using the NVIDIA RTX GPUs.

To learn more about NVIDIA, visit: www.nvidia.com/media
For more information on XR Studios, visit: www.xrstudios.live/

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