Realtime 3D & Virtual Production 101

With information from CG Spectrum mentors of Realtime and Virtual Production Deepak Chetty and William Faucher

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WHAT IS A REALTIME 3D ARTIST?

A Realtime 3D Artist uses traditional skills in any area of the production pipeline focused on content or asset creation in a realtime environment such as a game engine. The basic skillsets are the same, but the medium is different (in realtime vs. non-realtime).

WHAT IS VIRTUAL PRODUCTION?

- Broad term covering a spectrum of disciplines, talents, industries and formats
- Skills are comparable to those in physical production (e.g. a virtual cinematographer vs. cinematographer, virtual art department vs. art department)
- Used in filmmaking, installations and projections for events, marketing and commercial uses, fashion shows, car launches, art spaces, exhibitions, concerts, broadcast, architectural visualisation, and more
- Describes the process or procedures in which content is created, commonly associated with realtime rendering and used for media such as film and games

WHAT SETS VIRTUAL PRODUCTION APART FROM PHYSICAL PRODUCTION?

- Encourages a nonlinear and collaborative process of production
- Empowers filmmakers to collaborate on visual elements in real time
- The iteration process (for example, experimenting with visual effects in film) begins much earlier in the production schedule
- Can generate high-quality imagery from the outset of production rather than further down the line
- Assets such as 3D models are cross-compatible and can be used from previsualization through final outputs

Source: "The Virtual Production Field Guide Volume 1" by Noah Kadner and presented by Epic Games

WHY IS UNREAL ENGINE CENTRAL TO VIRTUAL PRODUCTION IN FILM AND GAMES TODAY?

Unreal Engine is a great way to onboard artists into virtual production because the physical accuracy of settings and values is built-in to the software, allowing for a natural transition into the virtual world.

WHAT IS WORLDBUILDING?

The process of creating a sequence that evokes emotion. Essentially, it is environment art: establishing a layout and building a world in a way that tells a story, making a storyboard and setting up the camera in a cinematic way.

USEFUL KNOWLEDGE FROM FILMMAKING

Most of the time in virtual production, our frame is represented by the field of view of a camera. It's helpful to understand the following values which contribute to how you might block, light, and shoot a scene. Research or practice with a camera (even your phone camera!).

- Manual exposure
- Shutter
- Aperture control
- Focal length
- Sensor size
- Field of view

USEFUL KNOWLEDGE FROM ART FUNDAMENTALS

When starting out in this competitive field, you'll need to focus on learning technical tools, but the importance of art fundamentals cannot be underestimated. Brush up on:

- Lighting
- Composition
- Color theory
- Anatomy

ADDITIONAL RESOURCES

- What is Virtual Production? (CG Spectrum)
- The future is Unreal: VFX Artist William Faucher talks virtual production (CG Spectrum)
- William Faucher on YouTube
- Virtual Production Basics (No Film School)
- Virtual Production Field Guides Vol I & II (Unreal Engine)