
VRDC
Audio for Cinematic VR
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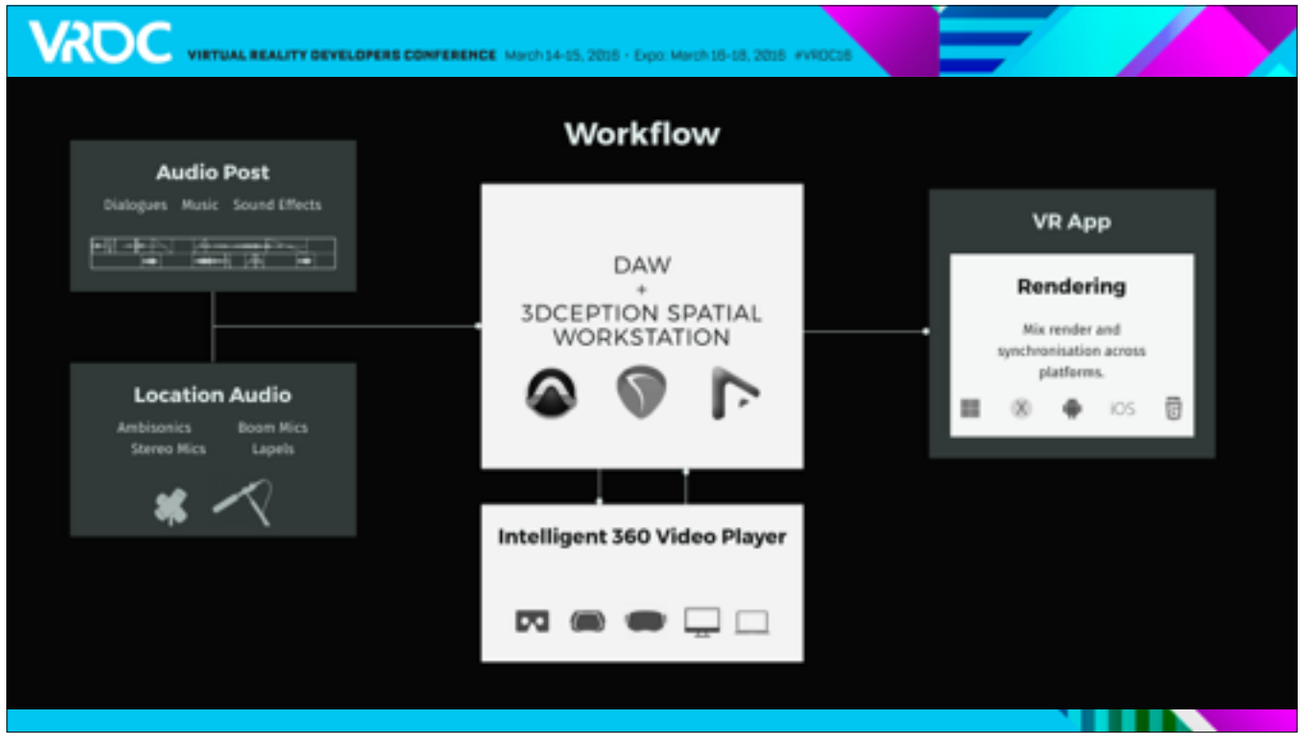
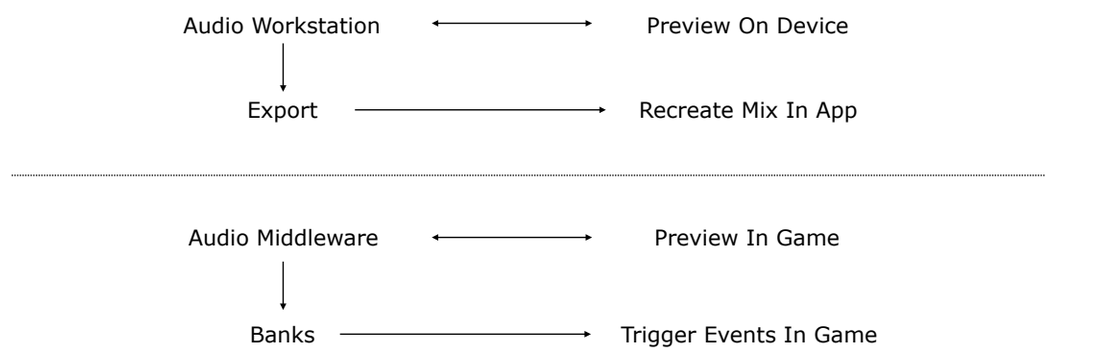
VIRTUAL REALITY DEVELOPERS CONFERENCE March 14-15, 2016 • Expo: March 16-18, 2016 #VRDC16

An Audio Workflow for Cinematic VR

- Standardising workflows
- Push the technical and creative boundaries
- Retrofitting is not the answer
- Invent, break, learn


VRDC
VIRTUAL REALITY DEVELOPERS CONFERENCE March 14-15, 2018 • Expo: March 16-18, 2018 #VRDC18
Workflow
Audio Post
Dialogues Music Sound Effects
Location Audio
Ambisonics
Boom Mics
Stereo Mics
Lapels
DAW
+
3DCEPTION SPATIAL
WORKSTATION
Intelligent 360 Video Player
VR App
Rendering
Mix render and
synchronisation across
platforms.
iOS

Game Audio vs Cinematic VR



The Audio Language of Cinematic VR

While similarities may exist between film sound and game sound, there are also significant differences that warrant care in the transfer of sound theories and concepts from either to cinematic VR.

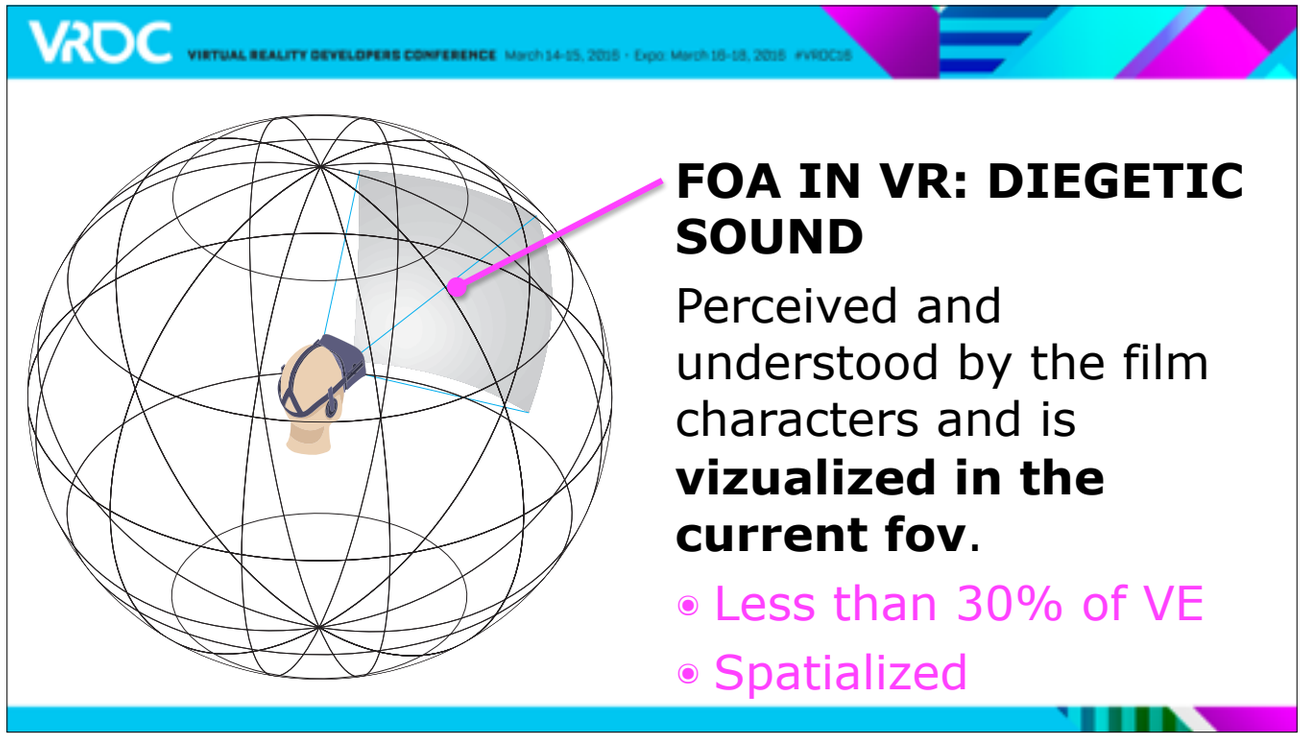
Immersion and Presence

- Immersion and Presence are two different things
- Immersive audio is a crucial element to achieving presence along with cinematography, blocking, acting, etc.
- It’s not just about using positional audio.

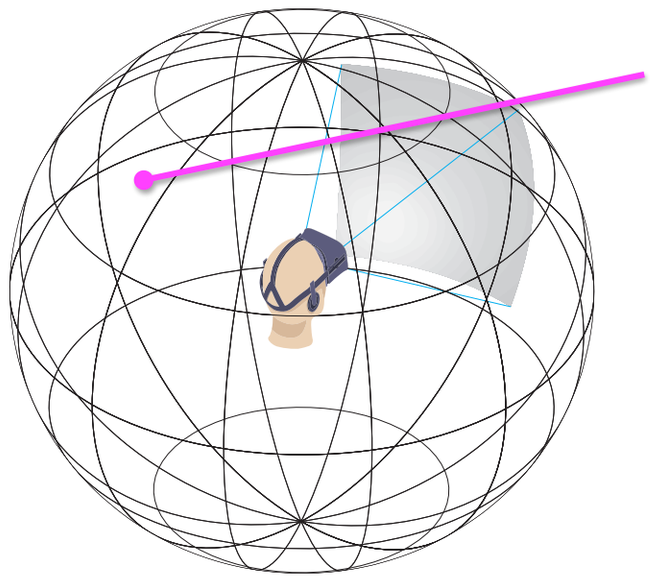
Immersion: what the technology delivers from an objective point of view.
Presence: a human reaction, a response, to a certain level of immersion.
Involvement or interest are to do with content, not to do with form (presence).

Concepts and Tips

- Understand the **field of audition** (foa) in VR



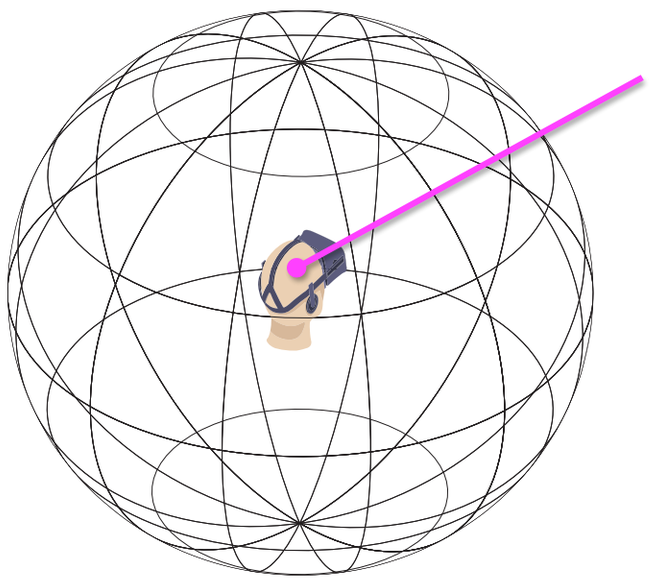
Perceived and understood by the film characters and is vizualized in the current fov.



FOA IN VR: ACOUSMATIC SOUND

Perceived and understood by the film characters but is **outside the current fov**.

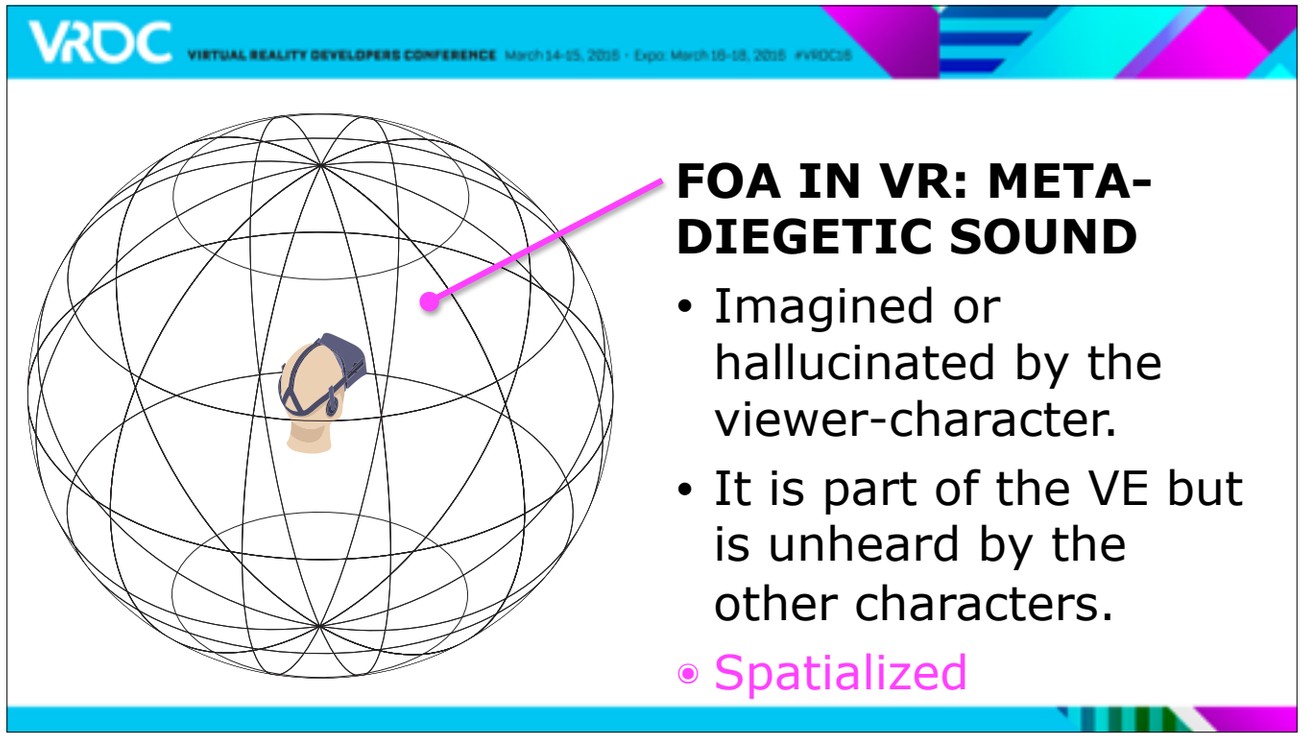
- Spatialized
- Audio cues



FOA IN VR: NON-/EXTRA-DIEGETIC SOUND

Is unheard by the characters but recognized by the viewer as accompanying and possibly interpreting actions onscreen.

- Voice over narration
- Music score
- Mono or stereo, so **non-spatialized**.



Altered states of consciousness

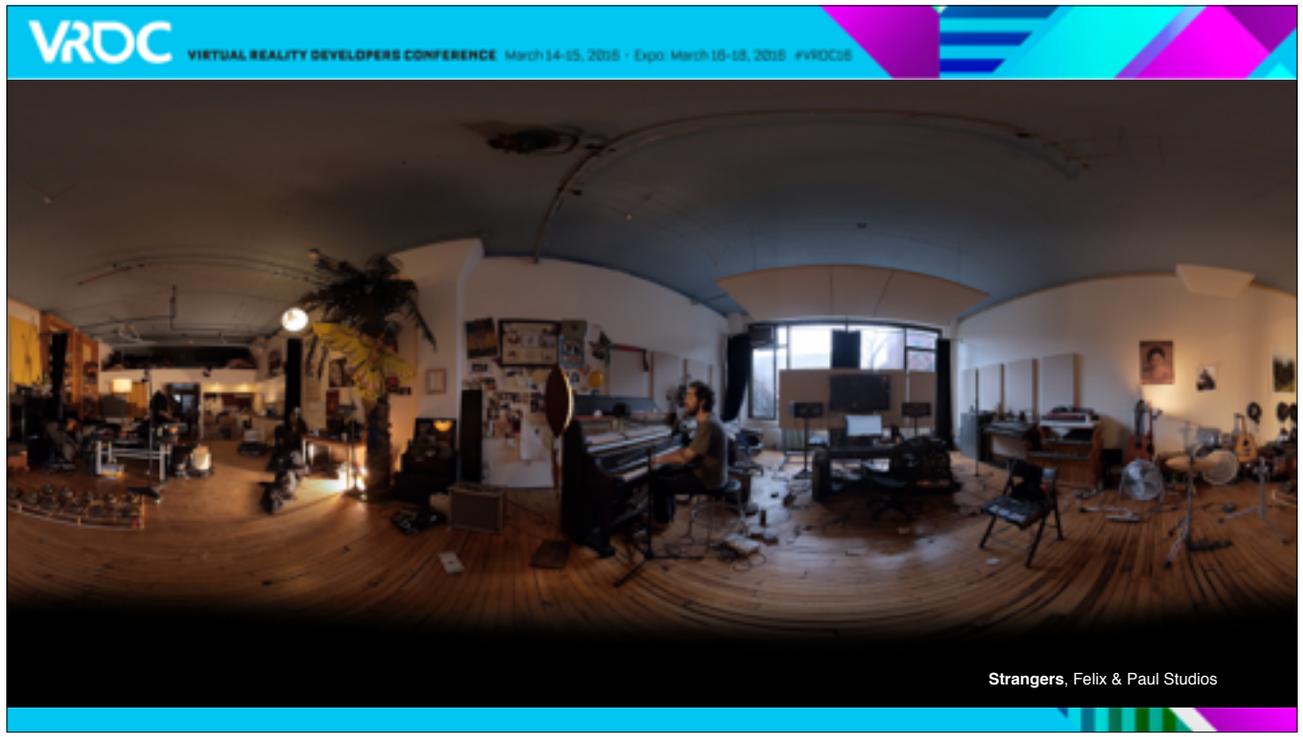
Concepts and Tips

- Understand the **field of audition** (foa) in VR
- Use **audio cues**: handle with care! don’t overdo it.

Example of audio cue used in a subtle, yet efficient way.

Concepts and Tips

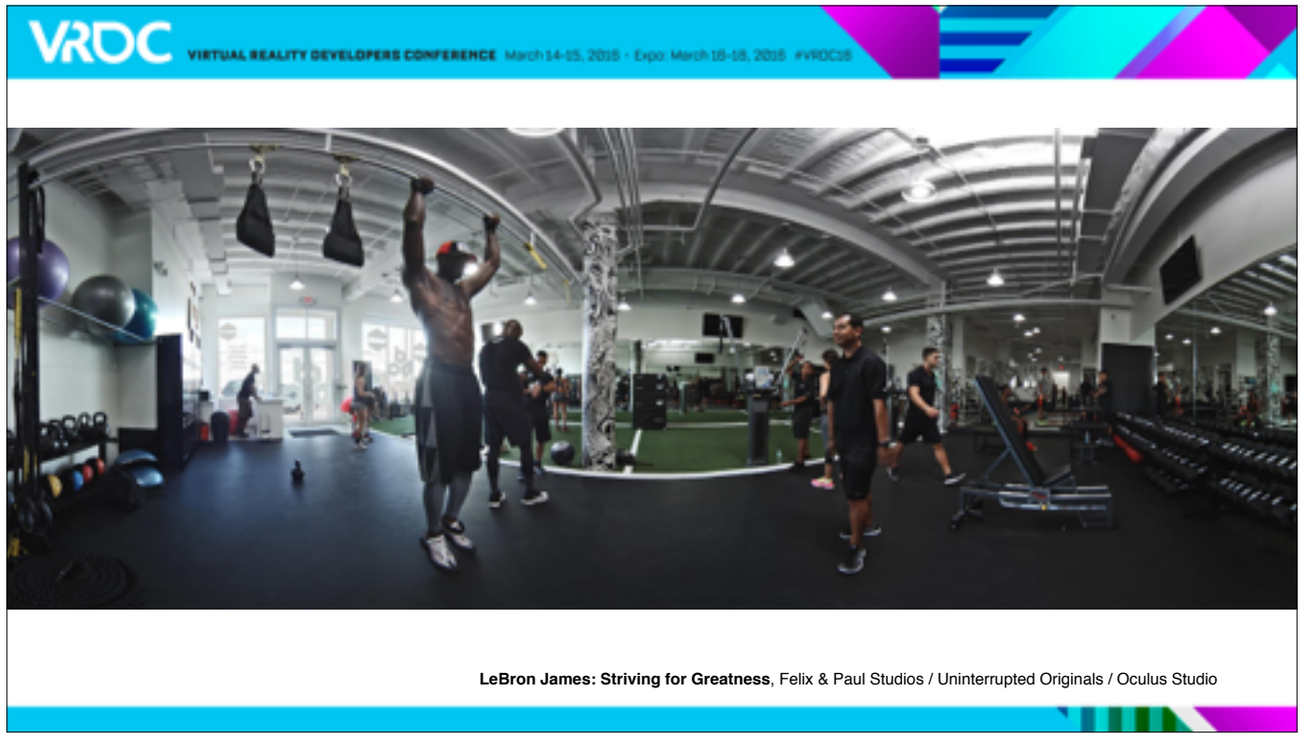
- Understand the **field of audition** (foa) in VR
- Use **audio cues**: handle with care! don’t overdo it.
- Give **depth** to the diegetic space.



Simply opening the window allowed the city soundscape to enter the scene.

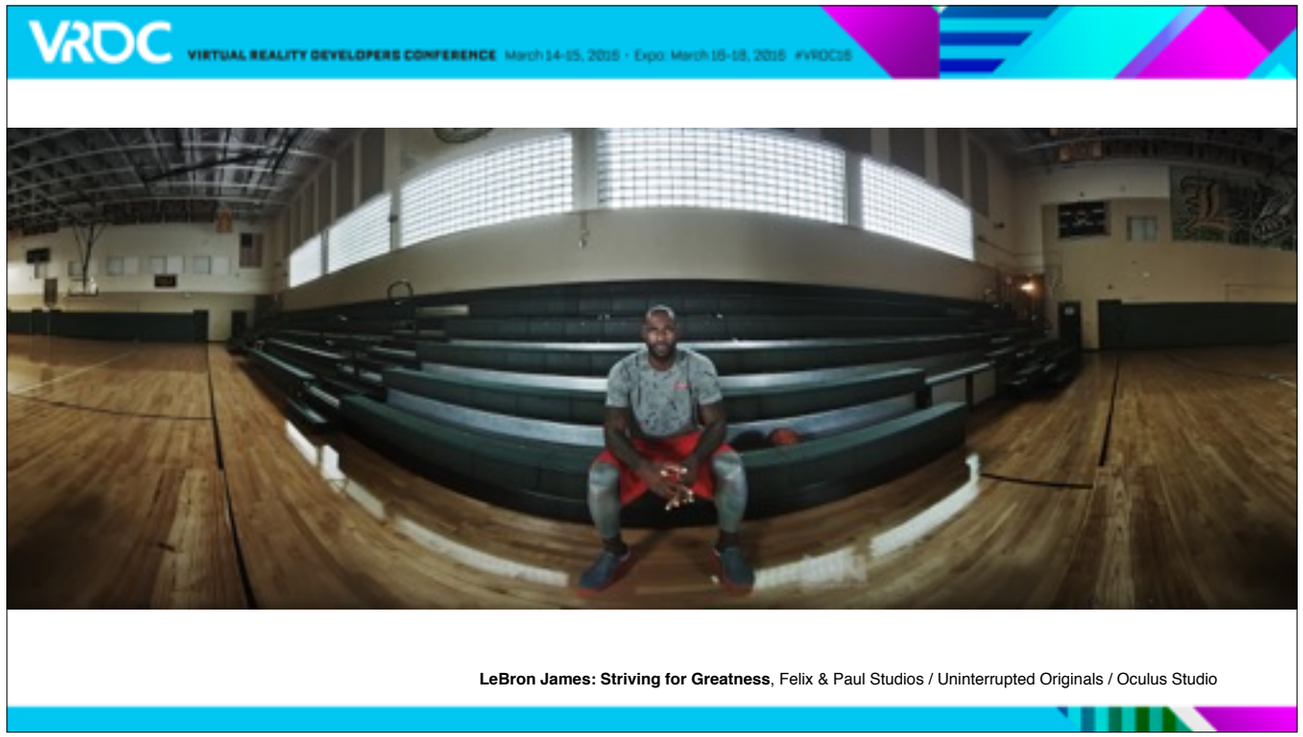
Concepts and Tips

- Understand the **field of audition** (foa) in VR
- Give **depth** to the diegetic space.
- Use **audio cues**… but don’t overdo it.
- Support **narrative arcs** spanning over multiples shots.



LeBron James: Striving for Greatness, Felix & Paul Studios / Uninterrupted Originals / Oculus Studio

Music goes from diegetic (spatialized) in this scene to non-diegetic in the next ones.

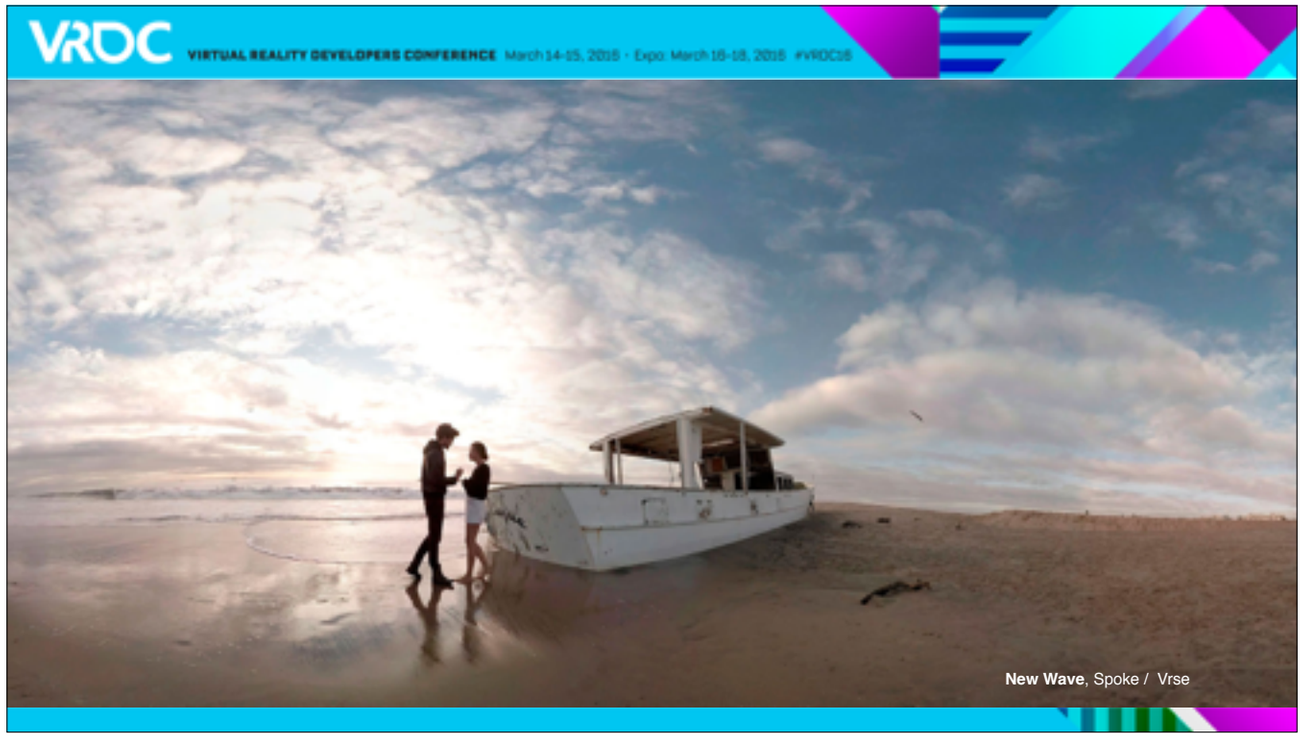


LeBron James: Striving for Greatness, Felix & Paul Studios / Uninterrupted Originals / Oculus Studio

LeBron’s voice goes from diegetic (spatialized) to a narration voice-over (non-diegetic) for the following couple of scenes.

Concepts and Tips

- Understand the **field of audition** (foa) in VR
- Give **depth** to the diegetic space.
- Use **audio cues**… but don’t overdo it.
- Support **narrative arcs** spanning over multiples shots:
  - Voice over narration and music
  - Switch from diegetic to extra-diegetic and vice versa.
- This is a **new medium**: **be creative**! **Dare to fail**



New Wave, Spoke / Vrse

Narrative possibilities offered by head-tracking: depending which character the viewer looks at, he gets that characters inner speech, while the other is almost muted. This narrative device acts as a metaphor for communication breakdown that sometimes arises in a couple.

Jurassic World: Apatosaurus, Felix & Paul Studios / Universal Studios

Experiment with hardware and multimodality: in special activations, viewers were sitting on chairs equipped a high-fidelity a tactile bass system that directly transferred low frequencies to their bodies, providing an extra physical dimension to sound (more immersion).

Tools Enabling Creativity

- **Differentiate** between spatialized and non-spatialized audio (baseline feature)
- Adding **depth** to the **timeline**:
  - Adding audio effects **in space**
  - **Focus** and **Controlled** dynamics

What the future holds

- We don’t have the answers
- The bridge between linear and interactive
- What if:
  - The future of Cinematic VR was AR?
  - What if perceptual system adapts in ways we don’t expect?
  - You could branch a storyline with audio?
  - What if perceptual system adapts in ways we don’t expect?

References and recommended readings

- Chion, M. (1994), Audio-Vision: Sound on Screen
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- Grimshaw, M., Garner, T. (2015) Sonic Virtuality: Sound as Emergent Perception