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Volumetric Video as a Novel Medium for Creative Storytelling

Gareth W. Young, Néill O'Dwyer, and Aljosa Smolic

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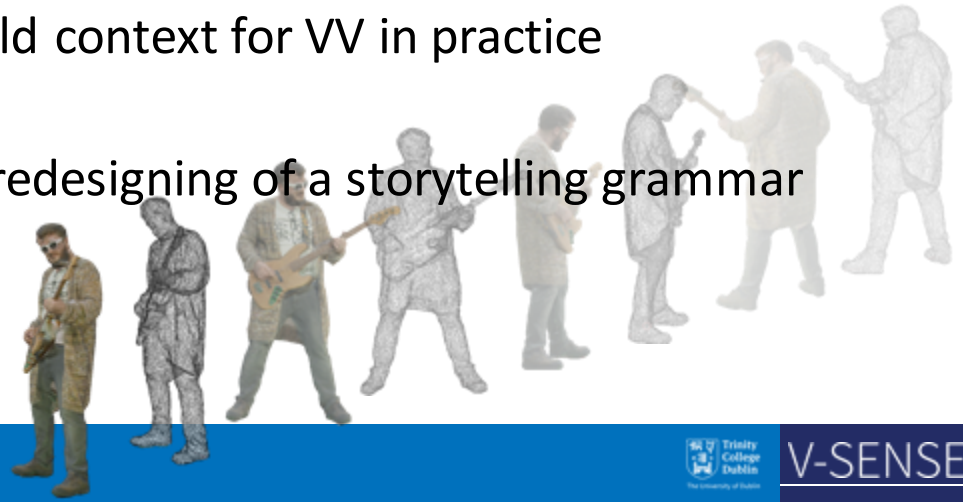
Volumetric Video as a Novel Medium for Creative Storytelling

- **Introduction:**
  - Volumetric video (VV) as a novel media capture technique
- **Public-facing cultural applications within the creative technology domain**
  - Creative Experiments
  - Example use-cases and real-world context for VV in practice
- **Successes and shortcomings**
  - New challenges that demand a redesigning of a storytelling grammar



Introduction

Volumetric video (VV) as a novel media capture technique

- **3D Capture and Playback**
  - As kinetic content (people, animals, objects in motion, etc.) using live-action video techniques
- **Vision Capture Technologies**
  - With infrared, RGB video, and LIDAR cameras
- **Dynamic 3D visual media**
  - Can be viewed across various platforms

Volumetric Video as a Novel Medium for Creative Storytelling

Volumetric Video as a Novel Medium for Creative Storytelling

Stage 1

- 12 Cameras
- One continuous take
- Green Screen
- Live performance

Stage 2

- Video synchronization
- Editing
- Color correction
- Chroma keying

Stage 3

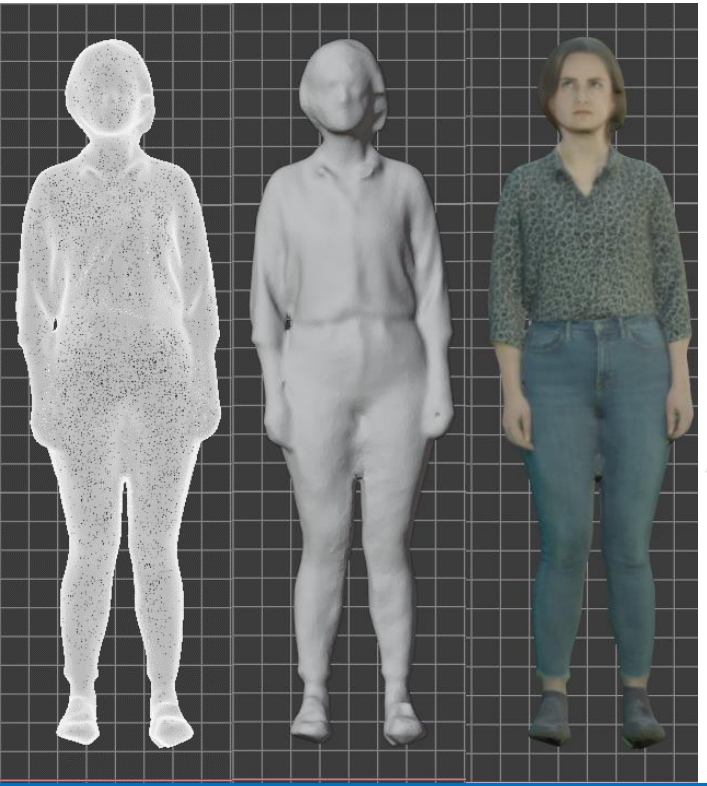
- VV processing
- 3D output
- Texturing

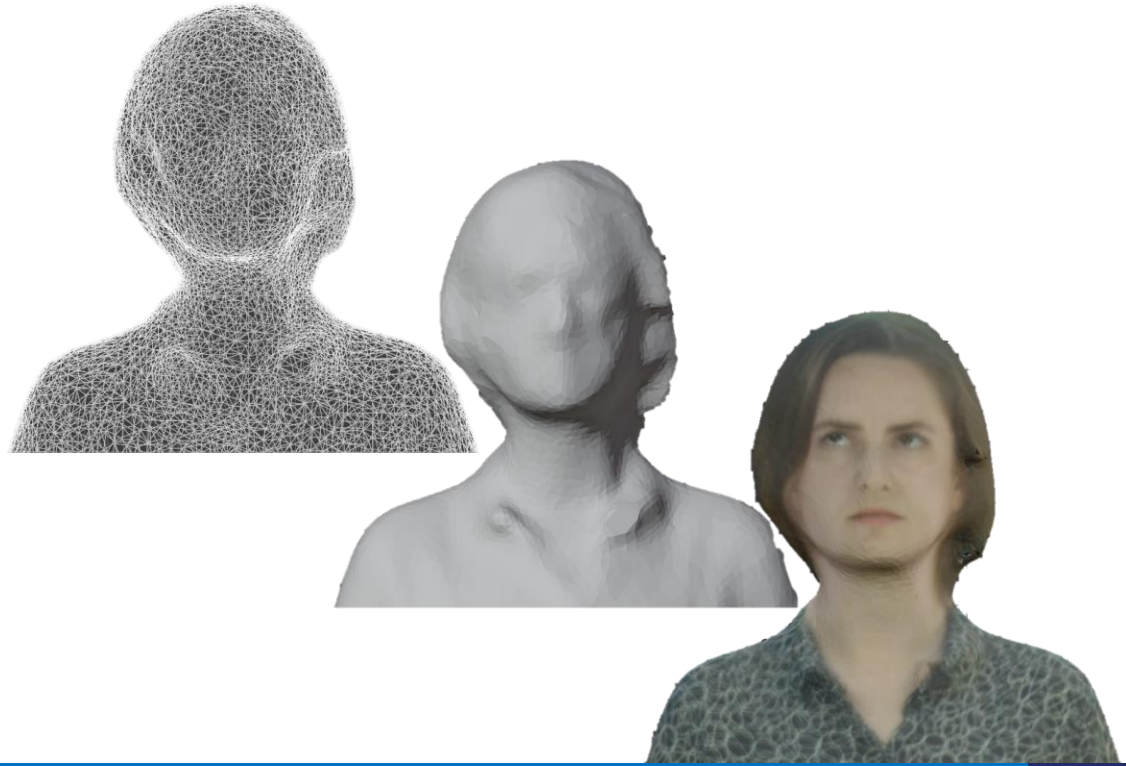
Stage 4

- Game engine
- Scenography
- Platform selection

Stage 1: Volumetric Video Capture Studio

Stages 2&3: Editing and 3D Reconstruction





Stage 4: Scenography and Platform

New Pagans - "*Lilly Yates*"
Opening Scene Demo

XR Play Trilogy

https://v-sense.scss.tcd.ie/research/mr-play-trilogy/

- **Intermedial Play**
  - Livestream
- **Virtual Play**
  - Virtual Reality (VR)
- **Augmented Play**
  - Augmented Reality (AR)

Intermedial Play

Livestream

Virtual Play

Virtual Reality

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VOLOGRAMS

Augmented Play

Augmented Reality

Jonathan Swift: Trinity Library Long Room

https://v-sense.scss.tcd.ie/creative-experiments/jonathan-swift-in-vr-ar-long-room-project/

- **Cultural Heritage**
  - Museum content
- **Virtual Reality**
  - For remote visitors
- **Augmented Reality**
  - In-person attractions

Jonathan Swift

Virtual Reality

Jonathan Swift

Augmented Reality

Bridging the Blue

https://v-sense.scss.tcd.ie/research/bridging-the-blue/

- **Virtual Reality**
  - As an empathy making machine
- **Human-orientated technology**
  - Perspective-taking
- **Experiences of clinical depression**

Bridging the Blue

Virtual Reality

Image Technology Echoes

https://v-sense.scss.tcd.ie/creative-experiments/image-technology-echoes/

- **Virtual Reality**
  - Immersive experimental fiction
- **Narrative Devices**
  - Stream of consciousness
- **Perception and Embodiment**

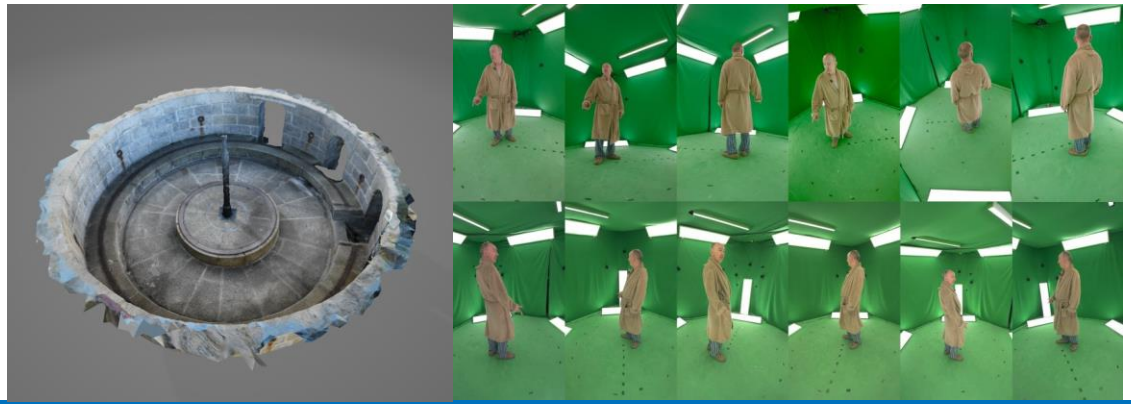
Image Technology Echoes

Virtual Reality

Mixed Reality Ulysses

https://v-sense.scss.tcd.ie/research/mixed-reality-ulysses/

- **James Joyce's Ulysses**
  - Site-specific fiction
- **VR and AR experiences**
  - Remote and on-location performances
- **Bloomsday**



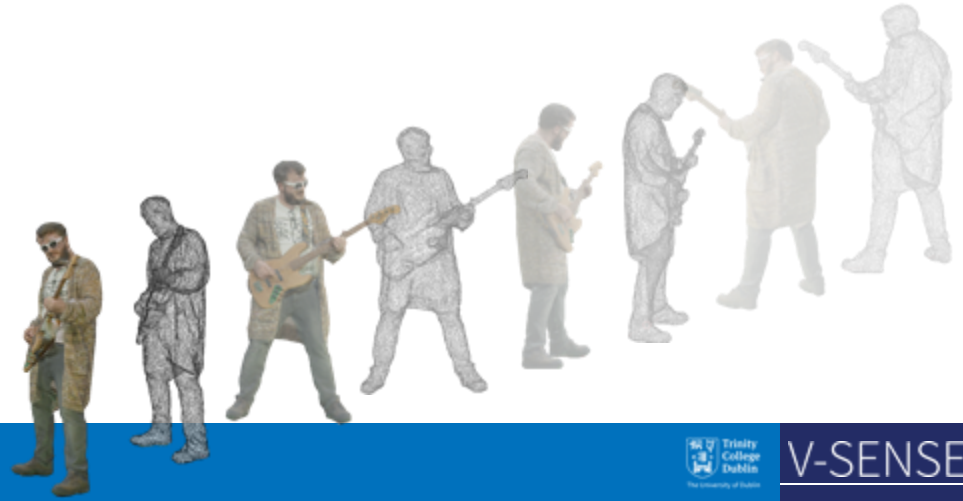
Mixed Reality Ulysses

VR & AR

XR Music Videos

https://v-sense.scss.tcd.ie/creative-experiments/xr-music/

- **Audience interactions**
  - Live performance paradigms
- **Music Videos and Live Experiences**
  - Traditional media vs performances
- **Engaging with Music**



XR Music Videos

Interactive Music Experiences

XR Music Videos

Interactive Music Experiences

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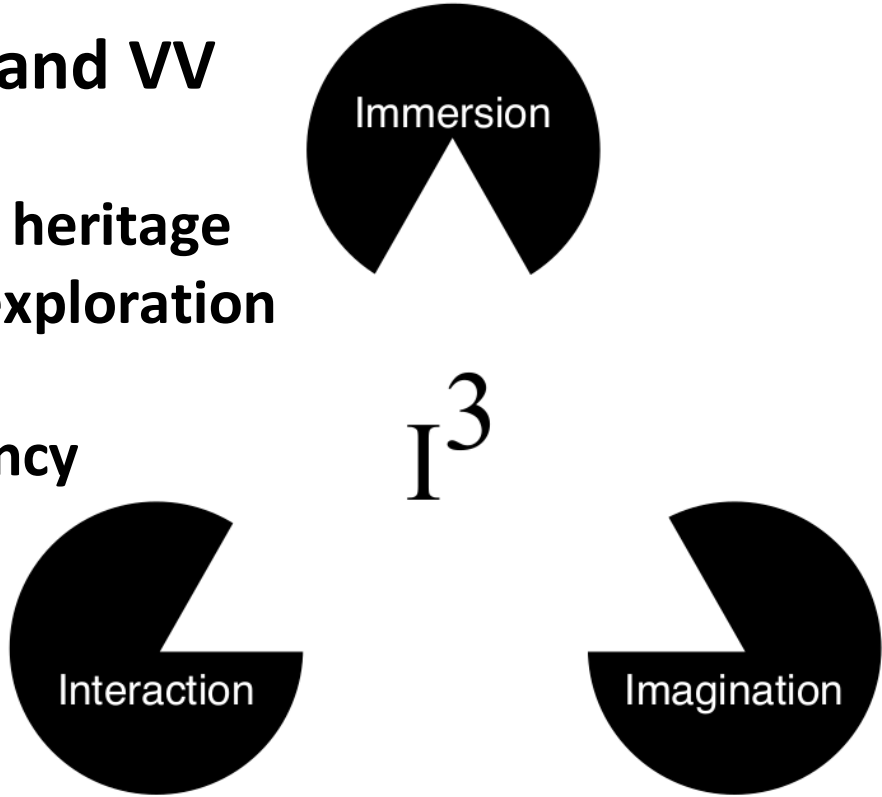
Storyworlding Grammar of XR and VV

- **MR Play & Audience Interaction**
- **Swift & Augmentation of cultural heritage**
- **BtB & Narrative techniques and exploration**
- **ITE & Parallel worlds/timelines**
- **XR Music Videos & Audience agency**



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Many Thanks!