

Beyond Audio Description: Exploring 360° Video Accessibility with Blind and Low Vision Users Through Collaborative Creation

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demo video!



Accessible 360° Videos Should Be Immersive

Prior work incorporated AD into 360° viewing experiences (Fidyka et al. 2021, Fleet & Herndon 2020, ImAc Project), but did not consider **haptic and tactile feedback** or examine BLV users' **immersion and engagement**.

Research Questions

How can we make 360° videos accessible?

- How can AD best support **accessible and immersive** 360° video experiences?
- What **additional feedback** could support the accessibility of 360° videos?
- How and why should **BLV people engage in the AD creation process**?

Method: Interviews and Design Workshops

Interviews

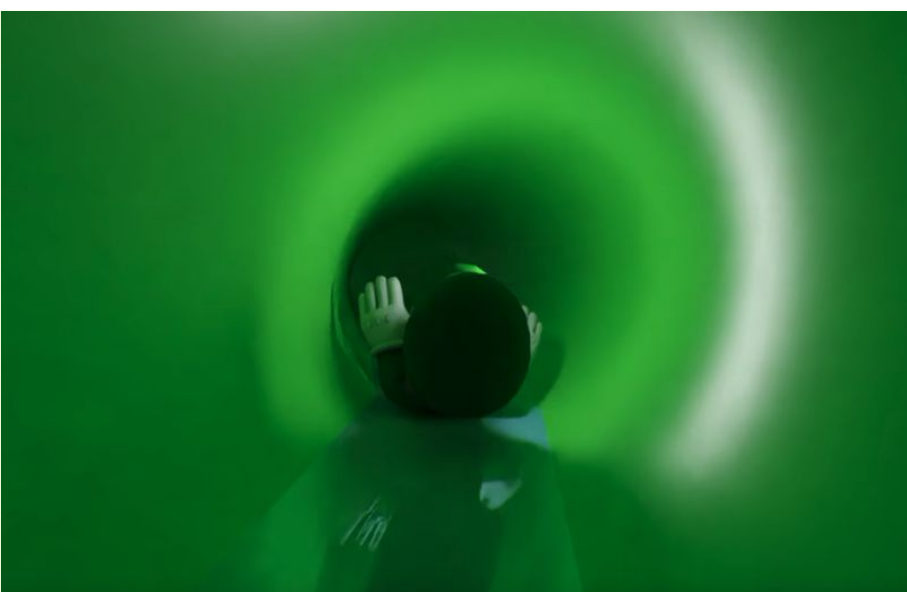
- Individual and virtual
- 13 participants with varying AD expertise
- 2 video probes
- Brainstormed AD styles and interactions

Design Workshops

- Collaborative and in person
- 9 participants, 2 workshops
- Wrote AD script prototypes in mixed-ability groups
 - Included descriptions and audio cues

Findings: Multiple Elements Worked Together to Increase Engagement

Video Screenshots



Descriptions & Audio Cues from Workshop Prototypes

- As Mario, we* watch Luigi, a tall thin plumber with a large mustache in a green hat, in a tub plunging a bathtub drain.
- Suction cup plunging and spatialized AD

** Changing the AD point of view to **first person** conveys both immersion and embodiment*

- We slide through a green tunnel.
- Hollow echo (curve midrange, high frequency cutoff, small room) & water (mixed back)
- We land on a grass patch, surrounded by mushrooms, some the size of a house, some the size of a leg.
- Dead spots of mushrooms (absence of sound) & boing from mushroom spring and landing

Multisensory Interactions & Sound Design

- Spatialized sound, speech, and earcons helped with understanding and orientation
- Haptic and tactile feedback could indicate proximity or actions

Additional Description Preferences

- Characters could serve as narrators
- Narrators impacted cultural authenticity

Get in touch!

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