

Touch & Live

An immersive experience for acting in others' bodies

*Nicolás Casanova, Holman Cabezas, Angie Céspedes
Dario F. Araque, Daniel Ospina, Elizabeth Garzon-Morales
Laura Cortes-Rico and Wilson J. Sarmiento*

**Universidad Militar Nueva Granada
Multimedia Research Group
Colombia**

gim@unimilitar.edu.co



Motivation



Anyone can have a disability condition.



Touch & Live. An immersive experience for acting in others' bodies

Motivation



We can be oblivious of
these kind of conditions.



Touch & Live. An immersive experience for acting in others' bodies

Motivation



But it is not the same thing being aware of other person that being in their shoes.



Touch & Live. An immersive experience for acting in others' bodies

Motivation



Virtual environments allow the users to experience any different situations.



Touch & Live. An immersive experience for acting in others' bodies



How to generate high-level
senses as empathy?



Touch & Live. An immersive experience for acting in others' bodies

Motivation

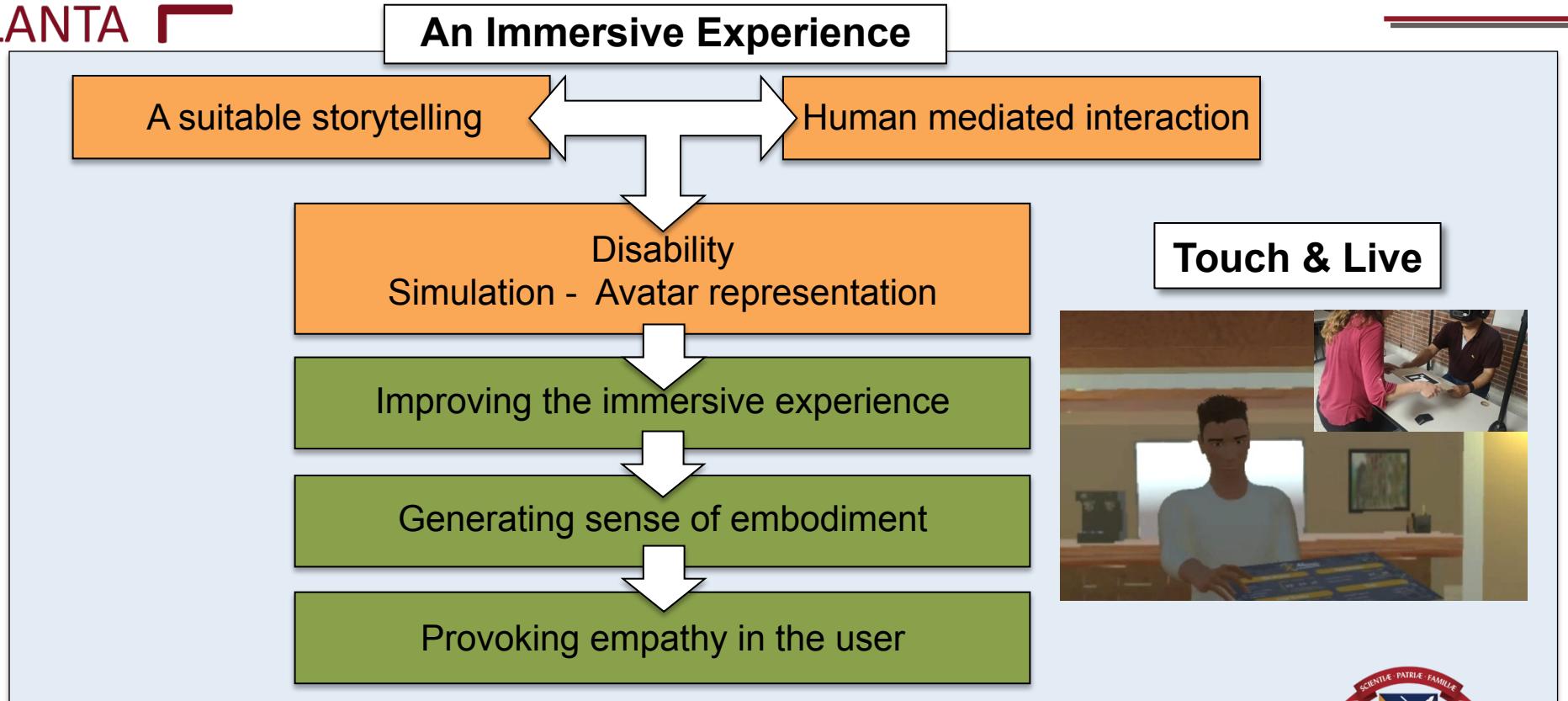


... empathy with a person
with any disability?



Touch & Live. An immersive experience for acting in others' bodies

Our Approach



Touch & Live. An immersive experience for acting in others' bodies



UNIVERSIDAD MILITAR
NUEVA GRANADA



Storytelling

*Relives the same situation
in the body of another person*



Déjà vu

The user lives a daily situation multiple times. It happens in a bar, where the user has to place an order.

Touch & Live. An immersive experience for acting in others' bodies

Storytelling

*Relives the same situation
in the body of another person*



Déjà vu

Hearing impairment

The user lives a daily situation multiple times. It happens in a bar, where the user has to place an order.

Touch & Live. An immersive experience for acting in others' bodies

Storytelling

*Relives the same situation
in the body of another person*



Visual disability



Déjà vu

The user lives a daily situation multiple times. It happens in a bar, where the user has to place an order.

Touch & Live. An immersive experience for acting in others' bodies



Storytelling

*Relives the same situation
in the body of another person*



Déjà vu

Reduced mobility

The user lives a daily situation multiple times. It happens in a bar, where the user has to place an order.

Touch & Live. An immersive experience for acting in others' bodies

Simulating disability



According each disability and avatar representation

- A convolution between sounds and an impulse response of a cochlear implant.
- Advanced cataracts. We filter the camera for making user vision blurred.
- Physical constrain in the user arm.

Touch & Live. An immersive experience for acting in others' bodies

Simulating disability



According each disability and avatar representation

- A convolution between sounds and an impulse response of a cochlear implant.
- Advanced cataracts. We filter the camera to making user vision blurred.
- Physical constrain in the user arm.

Touch & Live. An immersive experience for acting in others' bodies

Simulating disability

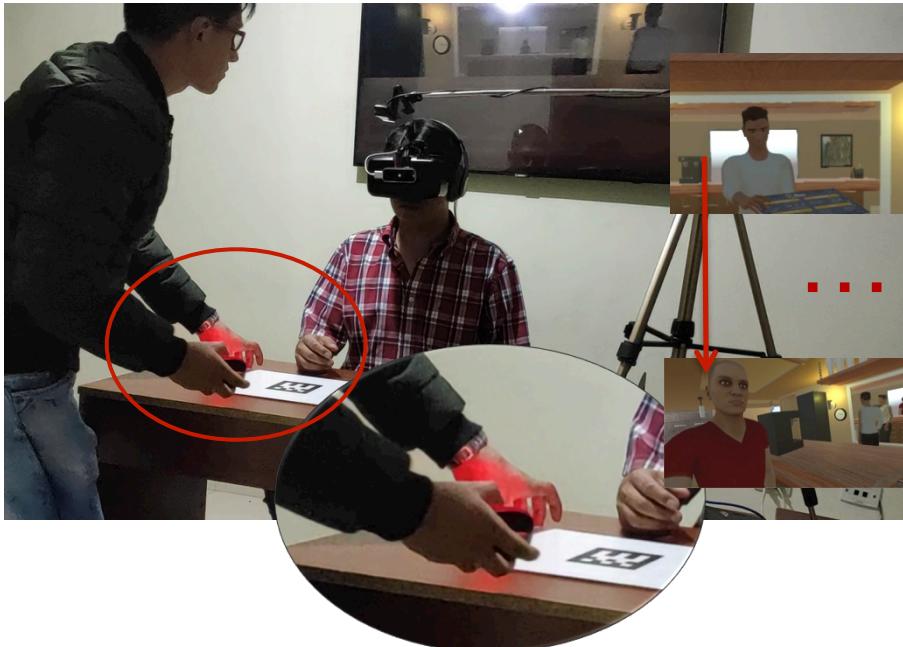


According each disability and avatar representation

- Supporting close physical interactions, such as a soft touch on the user's shoulder.
- Advanced cataracts. We filter the camera for making user vision blurred.
- Physical constrain in the user arm.

Touch & Live. An immersive experience for acting in others' bodies

Human mediated interaction



- Triggering interaction with non-player characters.
- Supporting close physical interactions, such as a soft touch on the user's shoulder.
- Providing physical interaction with some objects that emphasize the story.
 - Natural interaction with menu-bartender.
 - Physical constrain in the user.

Touch & Live. An immersive experience for acting in others' bodies

Human mediated interaction



- Triggering interaction with non-player characters.
- Supporting close physical interactions, such as a soft touch on the user's shoulder.
- Providing physical interaction with some objects that emphasize the story.
 - Natural interaction with menu-bartender.
 - Physical constrain in the user.

Touch & Live. An immersive experience for acting in others' bodies

Human mediated interaction



- Triggering interaction with non-player characters.
- Supporting close physical interactions, such as a soft touch on the user's shoulder.
- Providing physical interaction with some objects that emphasize the story.
 - Natural interaction with menu-bartender.
 - Physical constrain in the user.

Touch & Live. An immersive experience for acting in others' bodies

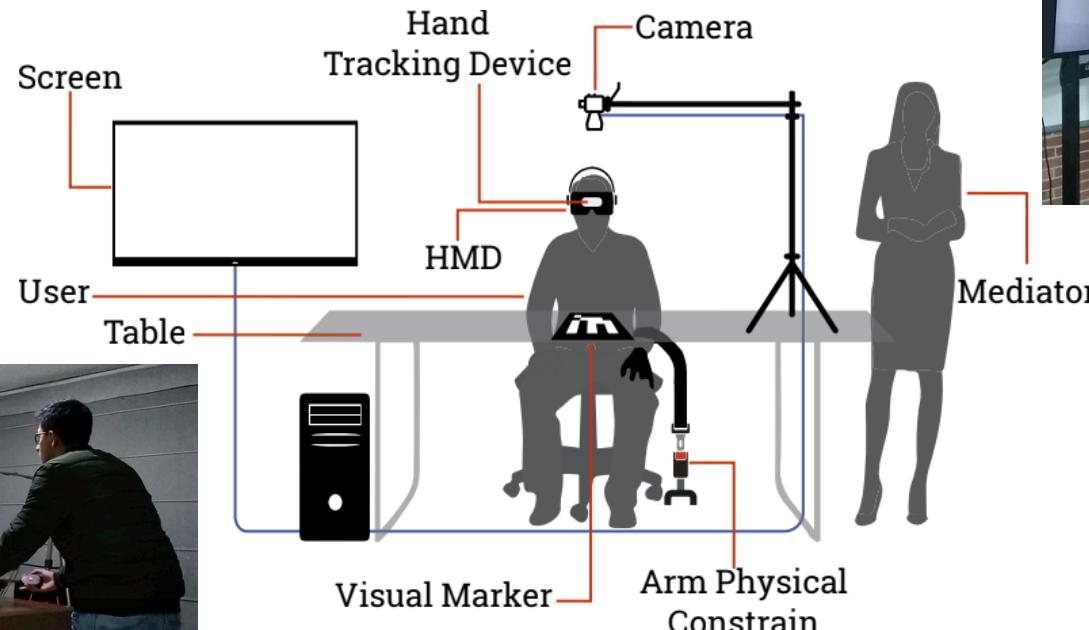
Human mediated interaction



- Triggering interaction with non-player characters.
- Supporting close physical interactions, such as a soft touch on the user's shoulder.
- Providing physical interaction with some objects that emphasize the story.
 - Natural interaction with menu-bartender.
 - Physical constrain in the user.

Touch & Live. An immersive experience for acting in others' bodies

Physical setup



Touch & Live. An immersive experience for acting in others' bodies

Findings and Discussion

- Human-mediated-interaction is a suitable approach to produce an immersive experience and provoke empathy in a virtual environment.
- The sense of embodiment is fundamental in the experience.
- This work evidenced the importance of the coherence between the narration, the virtual environment, and the physical interaction to generate suitable immerse senses

Video - Demonstration

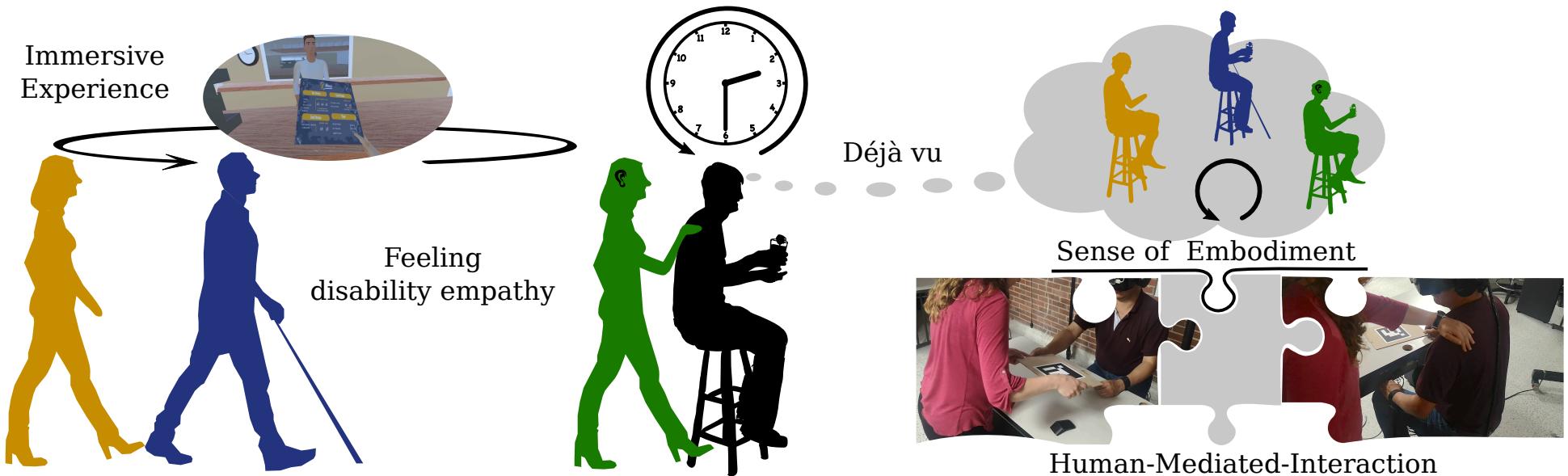
Right now you are watching a demonstration video, without any cuts, 4 videos in parallel showing the experience.



The experience starts in the body of someone without a disability, who is in a bar. There is a bartender, a clock, a mirror, a radio, a person walking behind of user, among others.

Touch & Live. An immersive experience for acting in others' bodies

Thanks you & Questions



This work is a result of the research projects INV-ING-2981 and INV-ING-2994 funded by Chancellor of Research of the Universidad Militar Nueva Granada; co-funded by Universidad Nacional de Colombia and CitiLab INSA/Lyon (execution period 2019).

Touch & Live. An immersive experience for acting in others' bodies