

Motions and Experiences in a Multiuser Interactive Installation: Towards an Embodied Account of Visitors' Journey

Tom Giraud

IR4M, CNRS, Univ Paris-Sud, Univ Paris-Saclay, Orsay, France

Matthieu Courgeon

Lab-STICC, CERV, Univ de Bretagne-Sud, Brest, France

Michele Gouiffès

LIMSI, CNRS, Univ Paris-Sud, Univ Paris-Saclay, Orsay, France

Michel Bertier

Département Arts-Musique, Univ Evry, Val d'Essonne, France

Aymard de Mengin

Département évaluation et prospective de la CSI, Paris, France

Xavier Maitre

IR4M, CNRS, Univ Paris-Sud, Univ Paris-Saclay, Orsay, France

Contact: tom.giraud.utc@gmail.com



Rich experiences: when knowledge meets affect through motion

New museology: from conservation to experiences in museums

Science centers as theme parks: emphasize leisure and entertainment

- Promotion of memorable experiences via emotions and sensations
- Interactive installations in both art museums and science centers



The “Art of Interaction” (Edmonds, 2010)

- Exploration through iteration with rich visitors’ feedbacks
- Aesthetic interaction? (Peterson et al., 2004) improvisation, idiosyncratic, play and intrigue
- Convergence between HCI and interactive art: understanding interaction in shaping the visitor’s experience

Toward mixed approaches

Qualitative approaches for a holistic grasp of experiences:

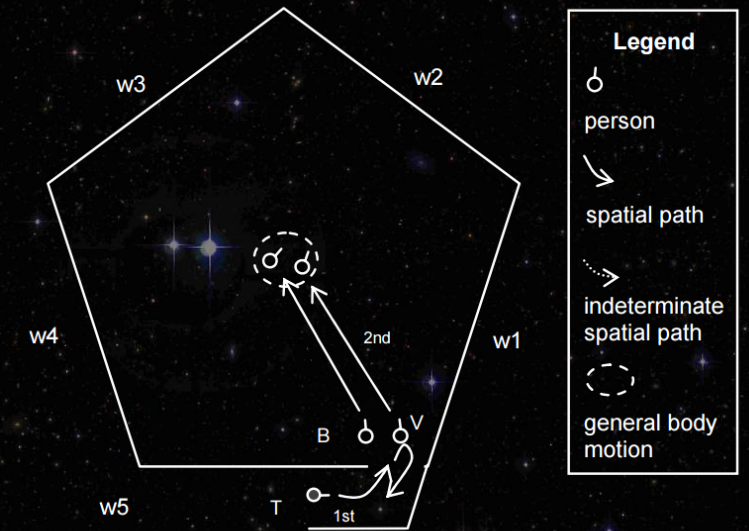
- Observations, interviews, video-cued recall, in-situ commenting
- Few participants, rich information, phenomenal level

Quantitative approaches by isolating measurable variables

- Questionnaires, tracking of behaviors, perceptual tests
- More participants, analytic stance, fragmented view

Sequential articulation of methods

- Qualitative exploration of experiences
- Variables identifications and selections
- Multivariate and unsupervised methods for pattern identification



Movement schema from Loke et al. 2005

The context of See Me Through You

City of Sciences and Industry

- Largest cultural center of science, technology and industry in Europe
- Five million visitors each year
- Within Explora (three levels of permanent and temporary exhibitions)



A light odyssey

- International Year of Light in 2015
- Temporary exhibition traced the journey of two particles of light



See Me Through You: Multiuser Interactive Installation

Immersed in the deep Universe around a black hole

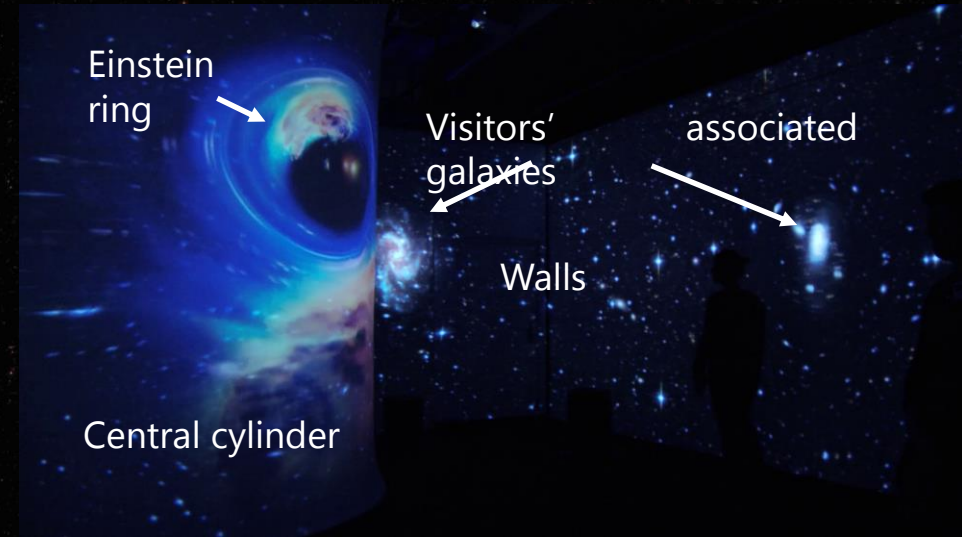
- Walls of a 90m² room with the milky way
- Central cylinder representing a black hole

Each visitor is assigned a galaxy

- Projected on walls (tracked by 8 Kinects)
- Gravitational lenses are visible on the central cylinder

Non-realistic elements to deepen the immersion

- Larger galaxies
- Distortion effects around galaxies
- Sound effects

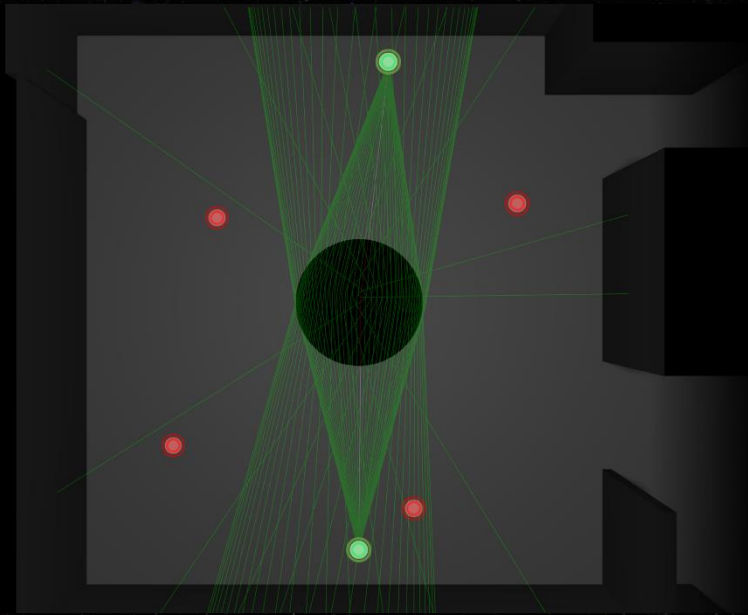


Inside the hall of mirages of the installation *See me through you.*

See Me Through You: Multiuser Interactive Installation

4 computers GPU rendering

- Real-time Space distortion and light bending
- Schwarzschild approximation of General Relativity



Top view of the room with ray tracing simulation.

Video

Qualitative evaluation methodology

What is the visitor experience? (perception / affect / understanding)

Focus groups and thematic analysis

- Capitalizes on day-to-day interaction routines
- Researcher as a facilitator
- Decompose interviews into categories

Three theme identified (4 groups, 16 participants)

- Information and Understanding
 - Expectations, context, and knowledge; Understanding; Information needs.
- Approach and Interaction
 - Frame of mind; movements and interaction.
- Impressions and Affects
 - Relaxing & quiet; interesting & educational; attracting & disturbing.



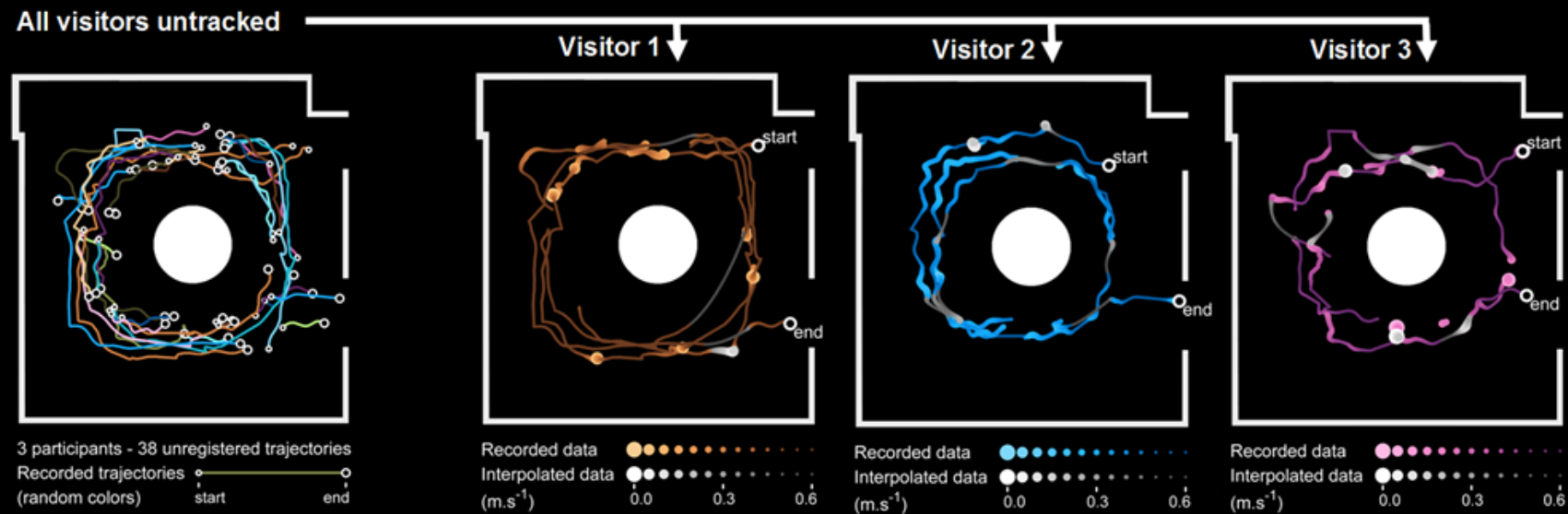
First focus group of the evaluation.

Toward a quantification of visitors' journey

Relating journeys and experiences?

2D displacements of visitors in the room as journey (concept from museology)

Next analysis: identify profiles via clustering



From raw data to filled individual journeys

Thanks for listening!