

WEBINAR

STARTING YOUR CAREER IN HERITAGE SCIENCE AT ISPC-CNR:
MARIE SKŁODOVSKA-CURIE ACTIONS POST-DOCTORAL FELLOWSHIPS

MONDAY 30TH MAY 2022

Communicating and Simulating Heritage Science

SOFIA PESCARIN



National
Research Council
of Italy



INSTITUTE OF
HERITAGE
SCIENCE





Instant water filtration for the developing world
Filtración instantánea del agua para los países en desarrollo



Explore the

next generation design

- ① Start
- ② Design
- ③ Diagnose

Quercus XPRIZE

Users evaluation

Immersive VR
Collaborative VR

Interactive stories
Hybrid experiences

Digital Heritage Innovation Lab (DHILab) @ CNR ISPC

Rome, Florence, Lecce, Catania

<https://www.ispc.cnr.it/en/2021/06/16/dhilab-digital-heritage-innovation-lab/>





Holographic showcase – CEMEC (CNR ITABC-ISPC)



A Night in the Forum (CNR ISPC)



Research and Videogames at CNR

1. Knowledge

Understanding,
Knowledge
acquisition
Memory and recall

2. Attention

Concentration and
Distraction

3. Experience

Embodiment,
Motivation,
Transformation,
Caring Attitude

4. Sociality

Social Cohesion
Sense of Belonging
Participation



how do we facilitate **knowledge acquisition** and strengthen **memory and recall** in educational interactive media?

... taking into consideration the impact of attention and distraction ...



After 30 BC, **Octavian**, back from his conquest of **Egypt** and the defeat of **Antonio**, gives back to the Senate and the Romans the «**res publica**», the state, taking on the highest positions, including the **Imperium** (the military command) and acquiring the title of **Augustus**.

As "Augustus", he starts to build a new **Forum**, adjacent the **Subura**, the popular quarter. This Forum should represent symbolically his political program, and its foundations.



The archaeological site is today visible in **Rome**, in the heart of the archaeological sites, in via dei fori imperiali.

Today the site **isn't accessible**. It is open only for restricted groups of visitors.

Many remains are conserved not in the site but in the nearby Museum



A Night in the Forum



01

Learning Concepts

02

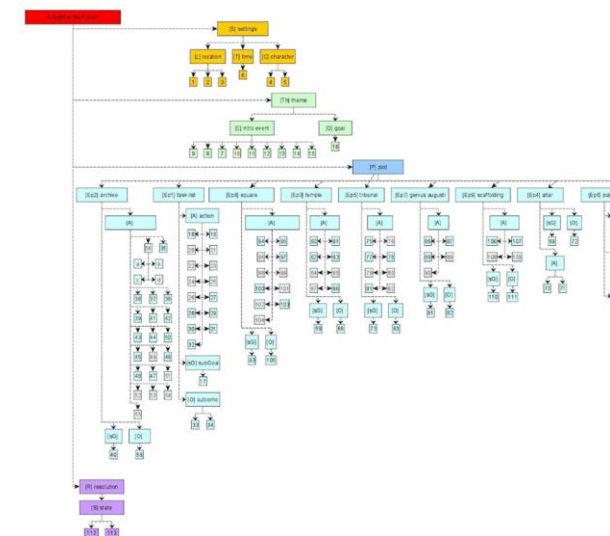
Places and Objects

03

Tasks

04

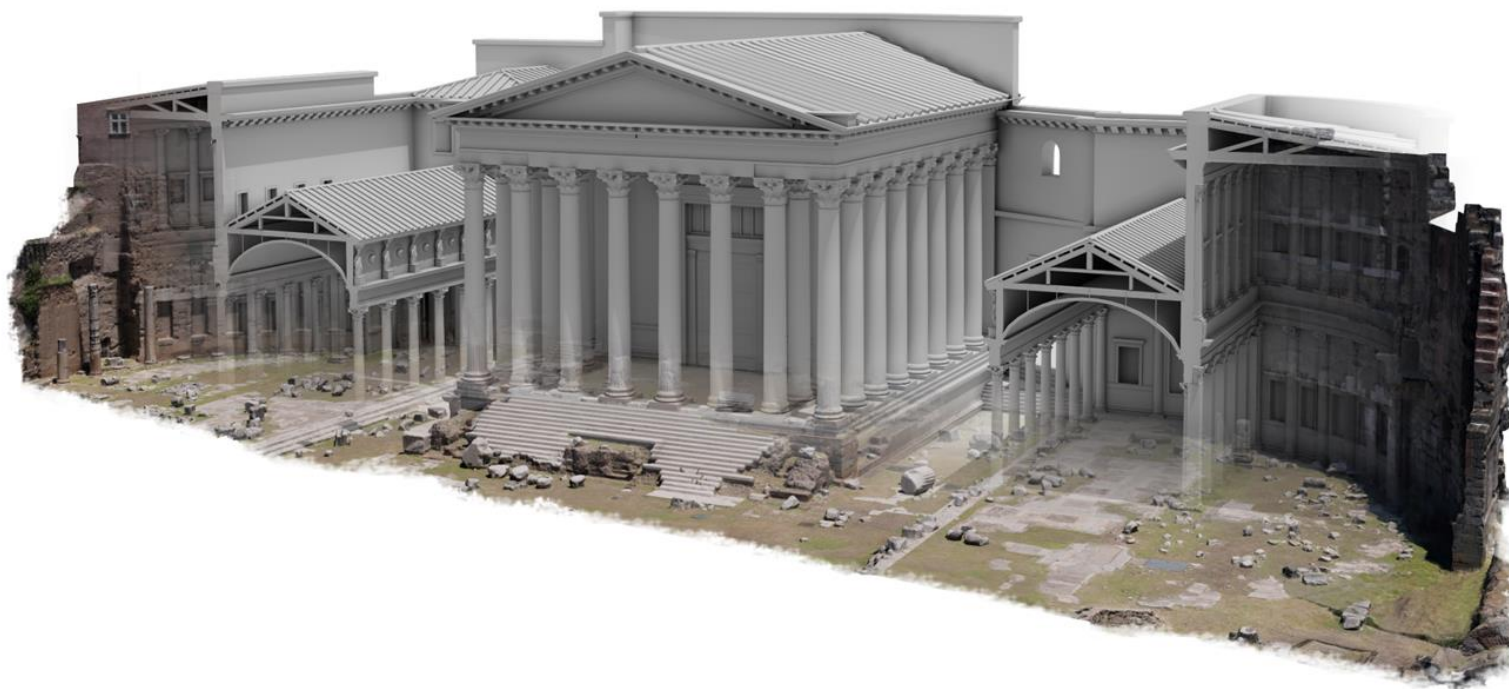
Game Mechanics



Perry W Thorndyke. 1977. **Cognitive structures in comprehension and memory of narrative discourse.** Cognitive psychology 9, 1 (1977), 77–110,



A Night in the Forum



ATON cnr ispc framework



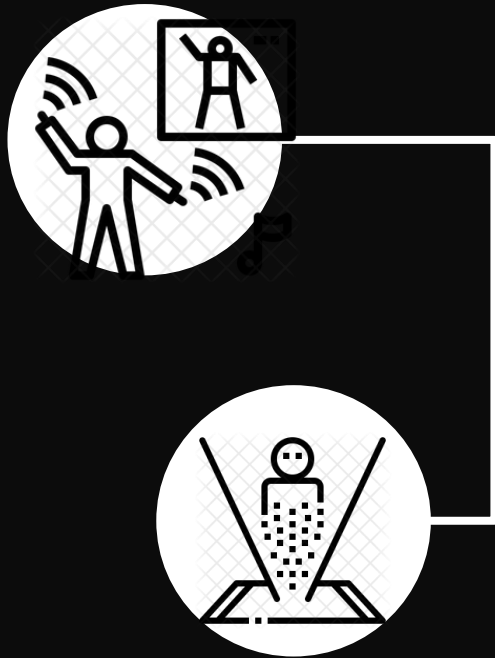
<http://osiris.itabc.cnr.it/aton/>

- Open-source
- Permette di creare web-app **cross-device** (*mobile, desktop, kiosk, HMD*)
- Modulare
- Multi-utente
- Progettato attorno a **standard web moderni**

B. Fanini, D. Ferdani, E. Demetrescu, S. Berto, E. d'Annibale (2021). **ATON: An Open-Source Framework for Creating Immersive, Collaborative and Liquid Web-Apps for Cultural Heritage**. Applied Sciences, 11(22), 11062.



Admotum *holoint*



Interactivity, Storytelling and Multiuser experiences (2014)

Exploring sites through semantic (ATON)



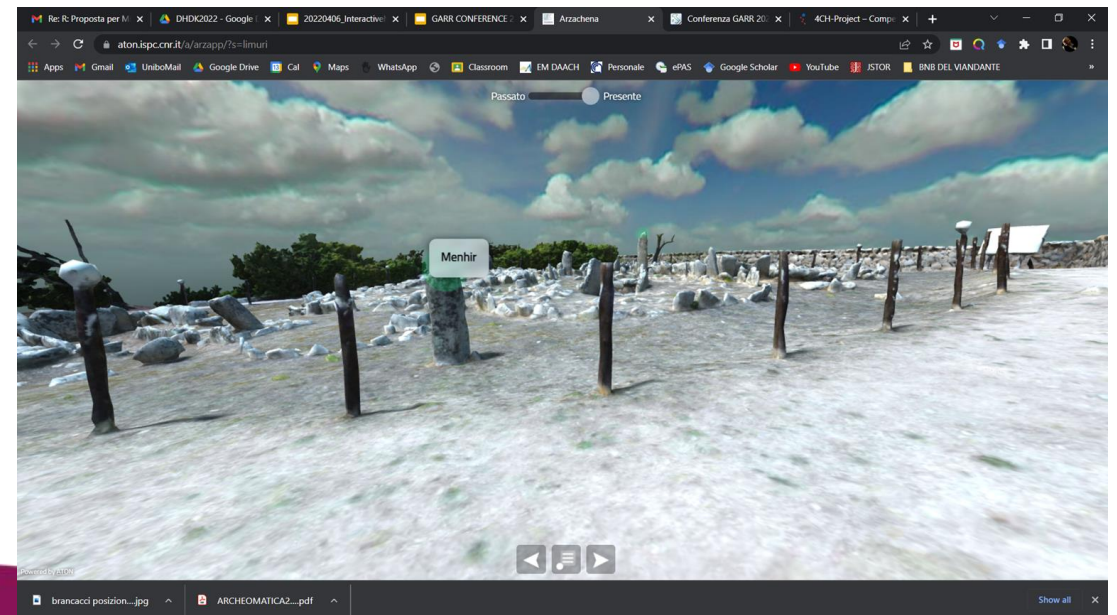
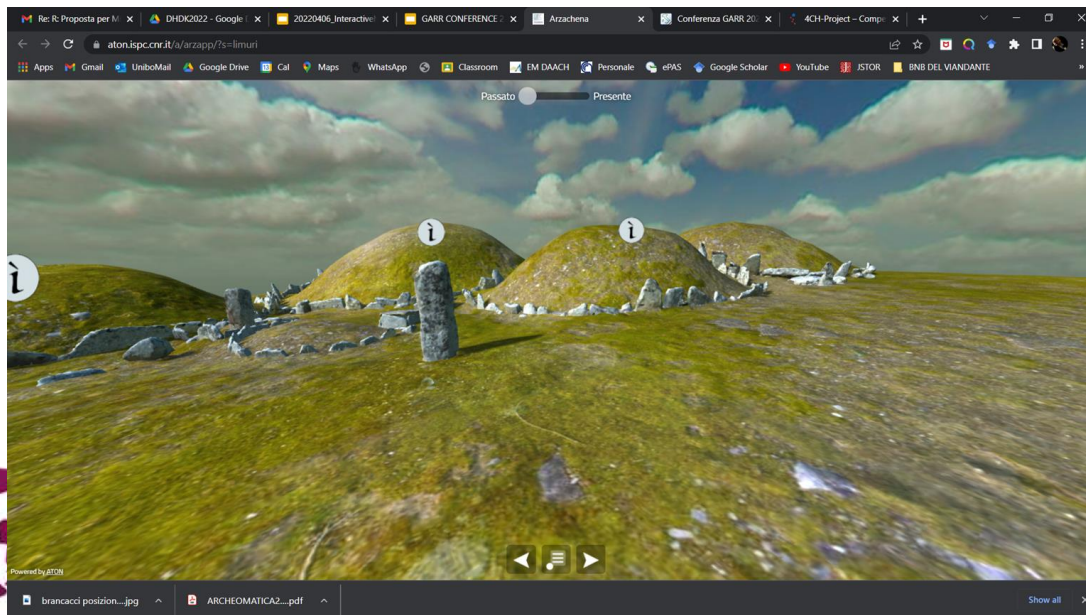
Mobile / Desktop / Immersive VR

B. Fanini, D. Ferdani, E. Demetrescu (2021) **Temporal Lensing: An Interactive and Scalable Technique for Web3D/WebXR Applications in Cultural Heritage**. *Heritage*. 2021; 4(2): 710-724

Exploring sites through time (ATON)



<https://aton.ispc.cnr.it/a/arzapp/?s=limuri>






the pandemic

new priorities, new needs, new requirements



virtual tourism

Visitors search for **MEANINGFUL**, **AUTHENTIC** AND **MEMORABLE** experiences

An aerial view of a historical village with a river and hills. The village consists of numerous small, rectangular, light-colored buildings with flat roofs, arranged in a grid-like pattern. A river flows through the left side of the village. The surrounding landscape is hilly and green, with some trees and a clear blue sky.

Sense of Wonder and Empathy (historical empathy)

Social VR for heritage: designing care and affect
into multi-user virtual reality

The ÇVR Experience - Overview

Meaningfulness



Historical Enchantment

Facilitated Dialogue

Provocation



Caring for our heritage

Subject

EVENT

Caring object

Link is STRONG

Reaction is
EMOTIONAL
NEUROBIOLOGICAL



Link is WEAK

Reaction DOESN'T
HAPPEN

Sense of Belonging (Social Cohesion)



Auth



AUTHENTIC is what touches the deeper self of a person,
what lasts, develops and changes together with the person
K. Jaspers, *Psychologie der weltanschauungen*, 1919

how do we develop **authentic
experiences suitable for virtual
tourism?**



**how could we make diagnostic and
restoration clearer to be understood
and something our society should take
care for?**



**how could we better design and
prototype the new ideas?**



New Research Challenges

Authentic Hybrid Experiences (physical and digital)

Meaningful Immersive Experiences (XR)

New Design Approaches to **Role Playing (Serious) Games**

Collaborative (Multiuser / Multiplayers) Environments

Interactive Experiences for **Social Cohesion**

Caring Empathic environments

Interactive Media **Design Toolkit** for the new priorities



THANK YOU

