

Smart Diaspora 2023

10 - 13 Aprilie 2023,
Timișoara

www.diaspora-stiintifica.ro

Eveniment aflat sub înaltul patronaj
al Președintelui României



Învățare imersivă prin tehnologii de realitate augmentată, virtuală și haptice

Conf.dr.ing. Silviu Vert

Universitatea Politehnică Timișoara



Dr. Silviu Vert

Associate Professor
Communications Department
Multimedia Research Center
Politehnica University of Timisoara

eLearning Developer
eLearning Center
Politehnica University of Timisoara

#extendedreality #usabilityengineering #opendata #smartcities

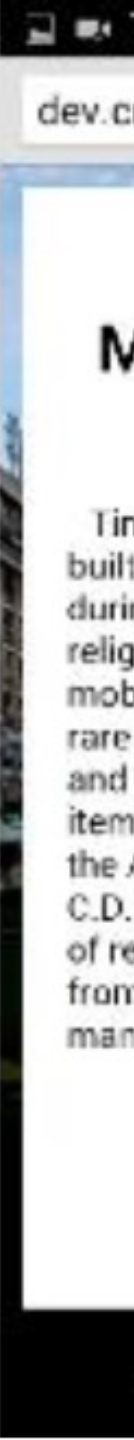
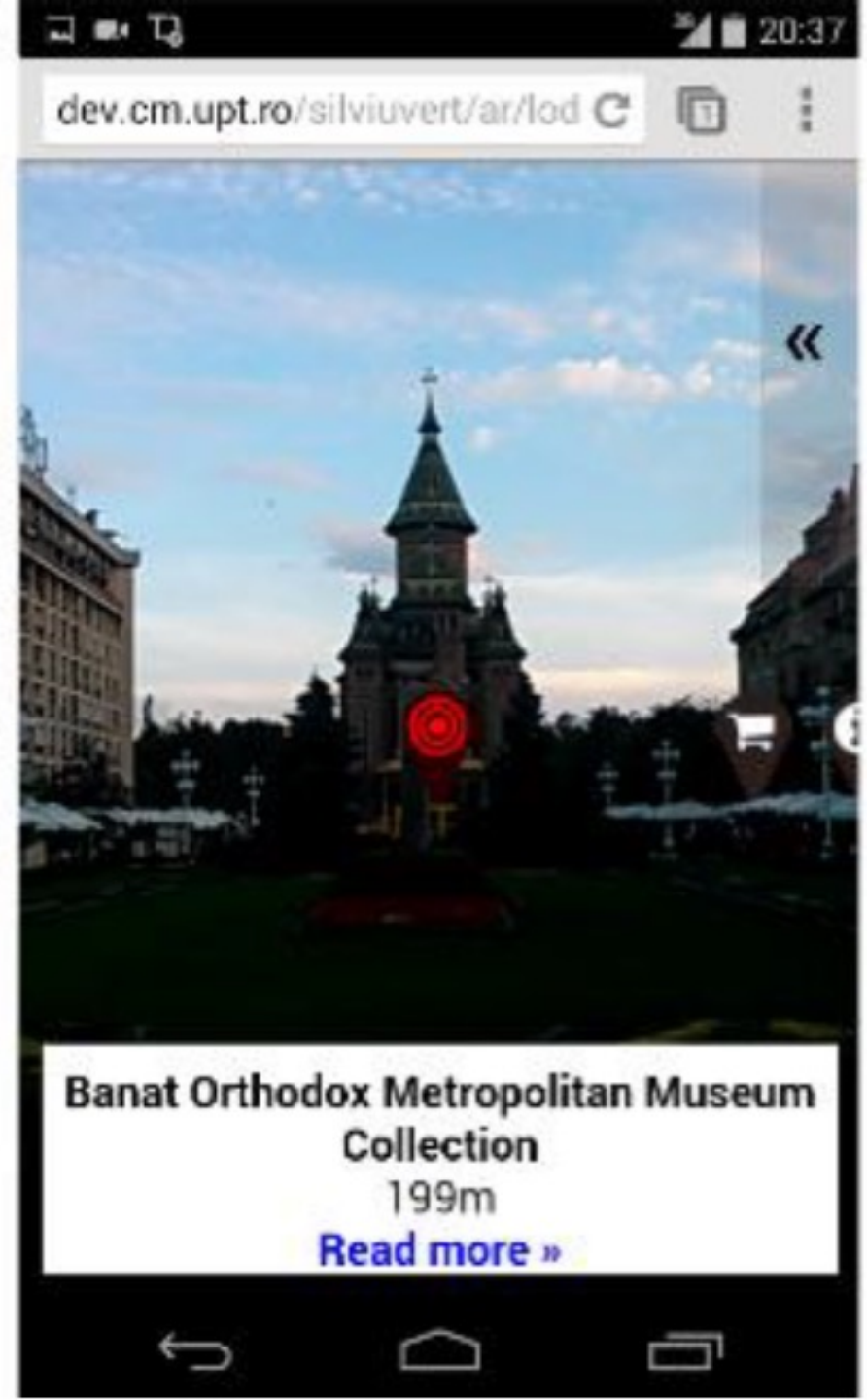
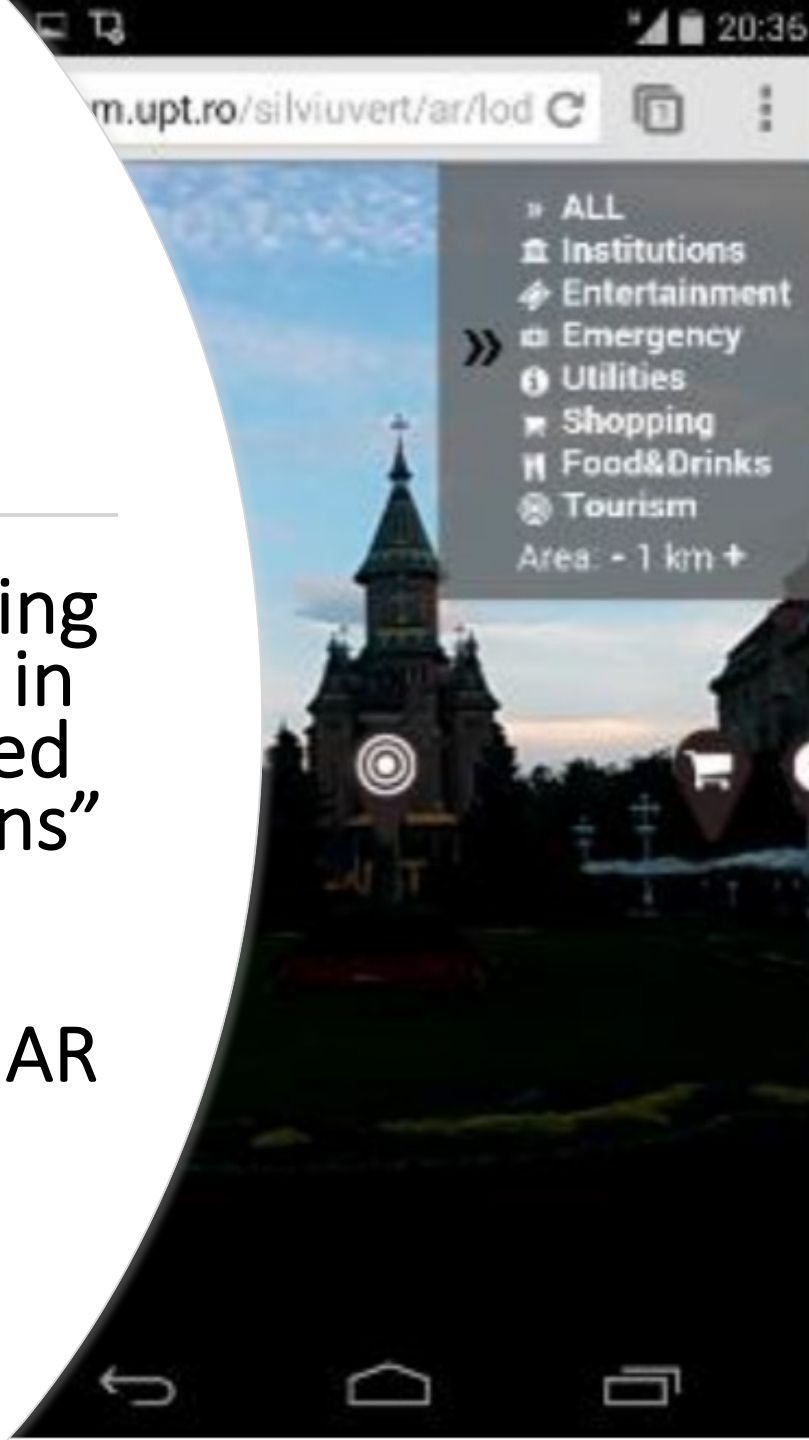


@silviuvert

Email: silviu.vert@upt.ro
<https://www.cm.upt.ro/tutor/silviu-vert/>

PhD on “Integrating linked open data in mobile augmented reality applications”

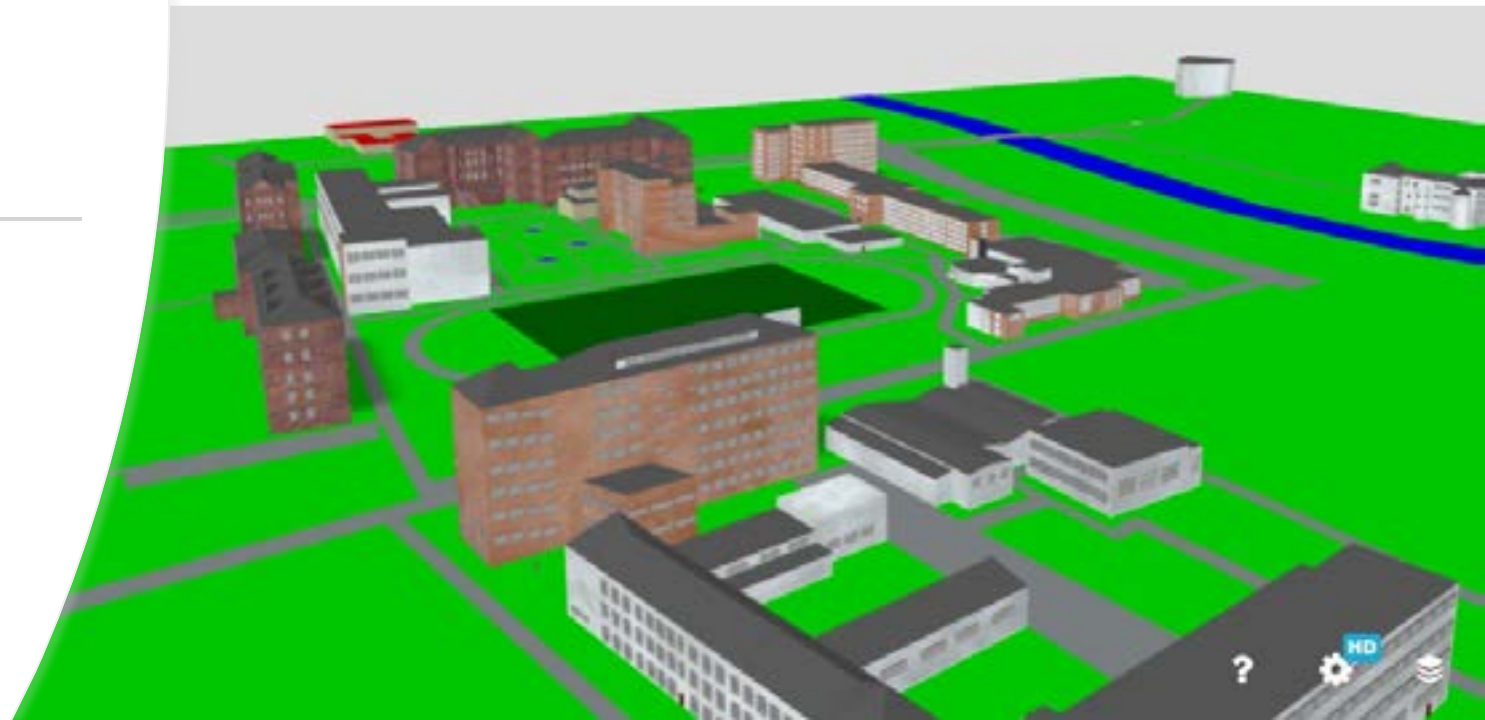
Tools: semantic web, web-based AR technologies

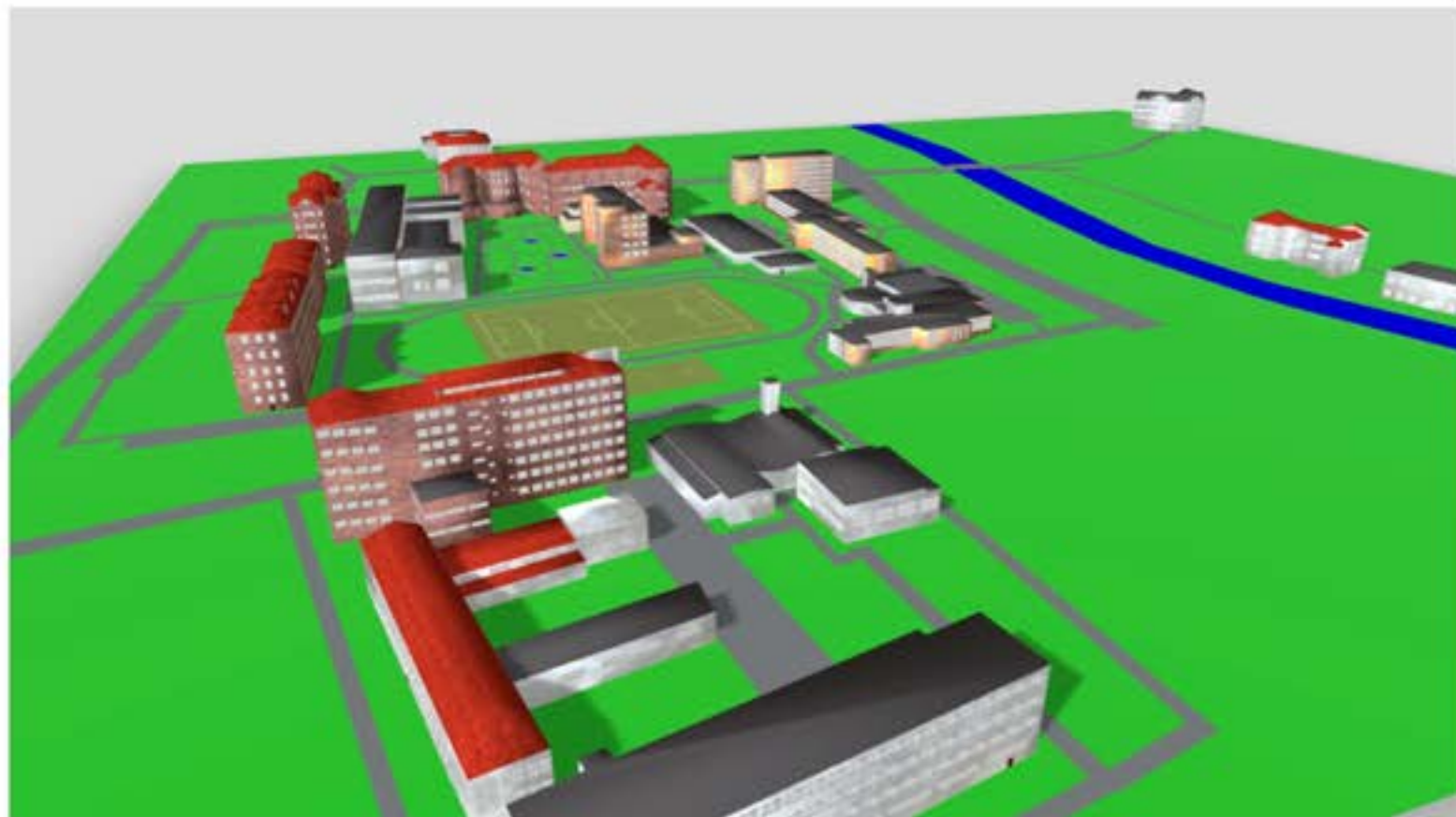




UPT's Campus and labs in Virtual Reality

Tools: Blender, Unity





Macheta campus UPT

3D Model



marius0198

FOLLOW

17

149

2

Download 3D Model

+ Add To

</> Embed

➔ Share

Report

SUGGESTED 3D MODELS



Abandoned House
Sengchor

18.7k 8 670



Environment Image Campus
zeller.3D

100 3 6



Wooden Forest Houses
Andrej Grave

10.6k 12 388



Dining room | Kichen baked
ChristyHsu

13.7k 8 378



The last templars - Entrega
Ricardo Gustavo Piegari

75 4 8



Buildings Front



Spider_robot

3D Model



Multimedia Centre

FOLLOW

37

0

+ Add To

</> Embed

↪ Share

Report

SUGGESTED 3D MODELS



Moon's Heart Station
Antony Oms

8.2k 25 237



Security robot
3DWorkbench

2.9k 2 62



Little Companion Robot For ...
BNova3DArt

3.5k 3 149



YUJIN ROBOT
Egor Liashchuk

1.8k 2 83



S-Bot - Lowpoly
5th Dimension

2.5k 3 70



African Wild Dog



Visit UPT in Virtual Reality

visit.upt.ro

Tools: Unity
WebGL



UPT Technical
Museum in
Virtual Reality

Tools: Blender,
Unity





Scaneaza codul QR pentru a
experimenta turul in realitate
virtuala pe telefonul tau.



Make AR & VR in the classroom

New 2022/23 pricing

Simplified per-seat pricing is now available!

[Learn more](#)



Projects done with students—part of the TalkTech project

Tools: Cospaces





Projects done
with teenagers
– part of the
PixelART
project

Tools: Cospaces





Digital education for the general public

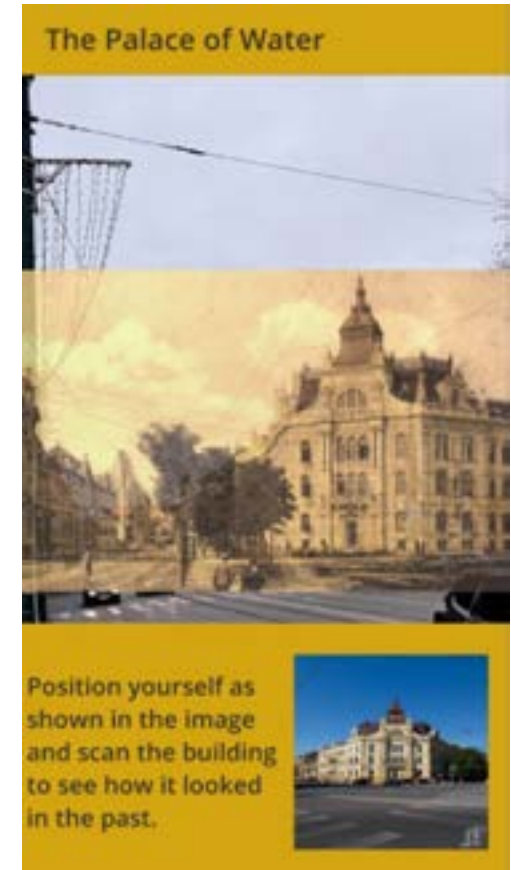
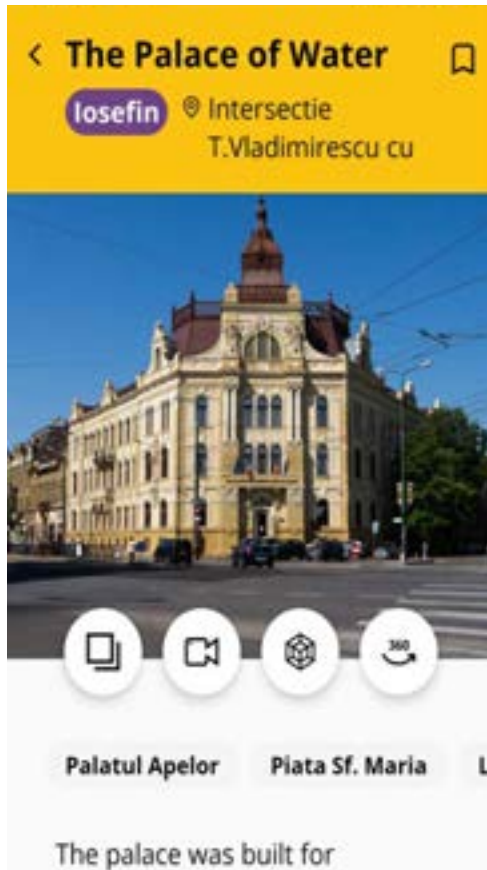


Spotlight Heritage Timisoara

Patrimoniul sub reflectoare Timișoara

Spotlight Heritage Timisoara – Augmented Reality view

Tools: Unity, Vuforia

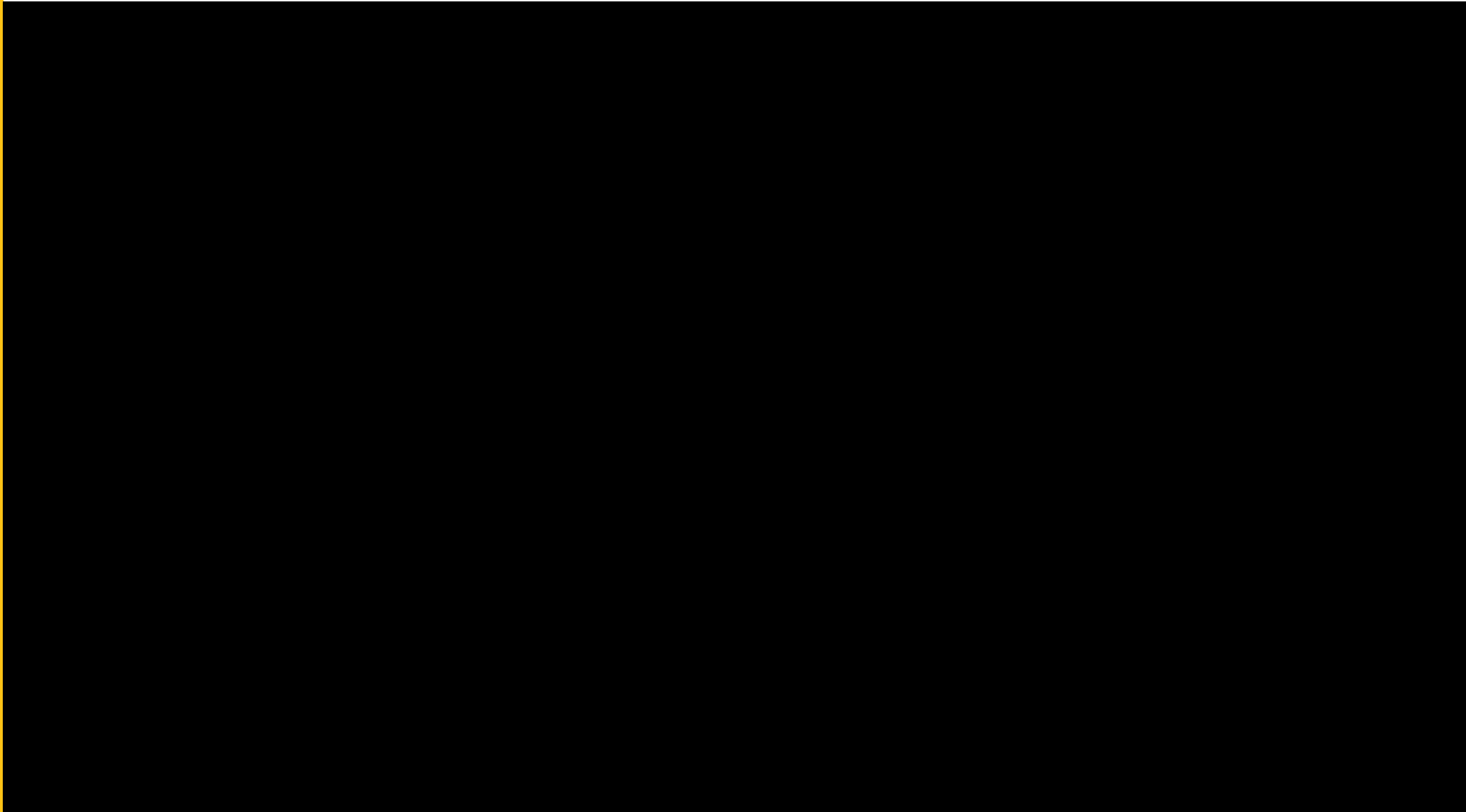


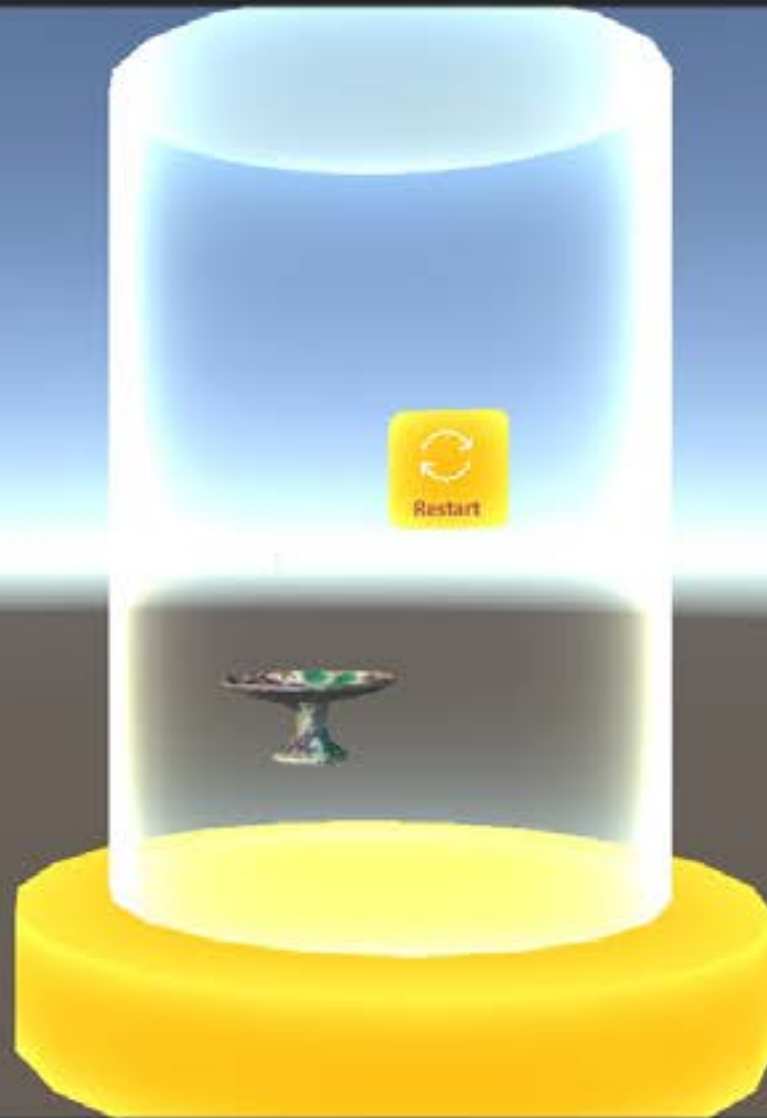
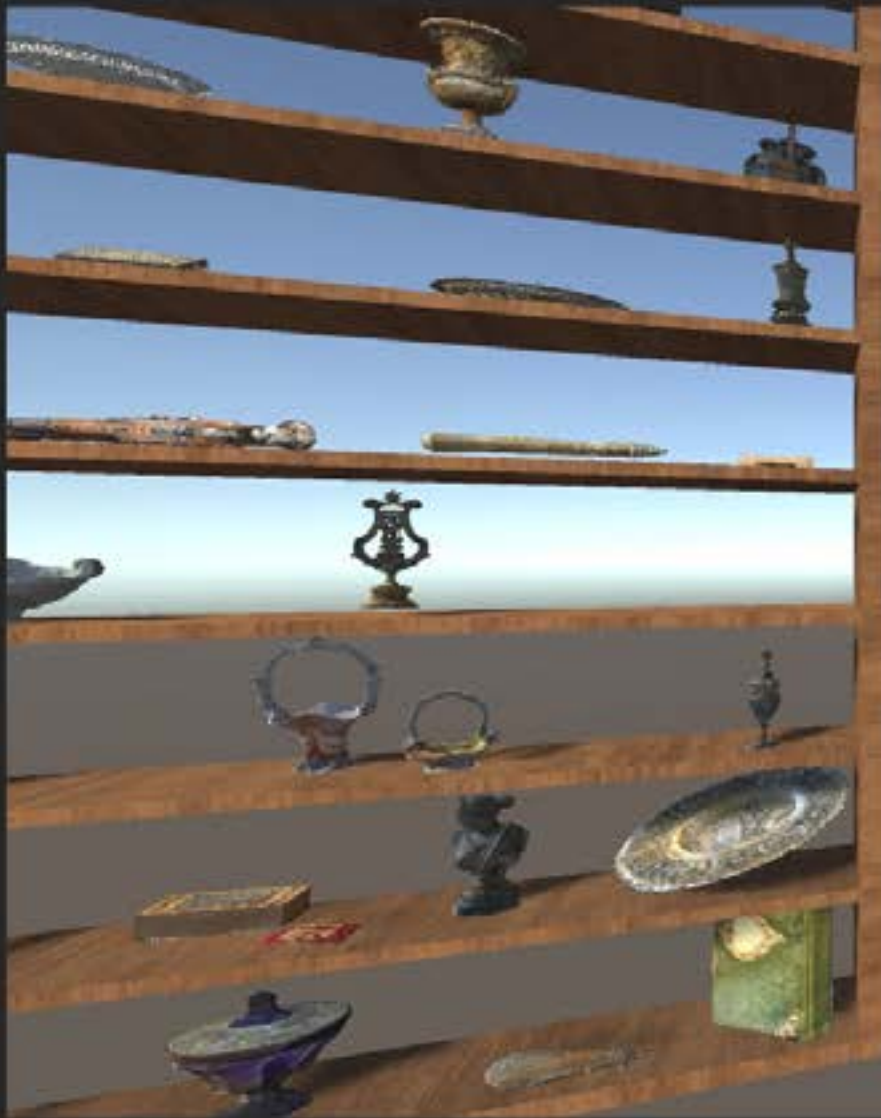
Spotlight Heritage Timisoara – Virtual Reality View

Tools: Unity



<https://spotlight-timisoara.eu/mobil-ar-vr/>





FRUIT BOWL DECORATED WITH LILAC LEAVES AND FLOWERS

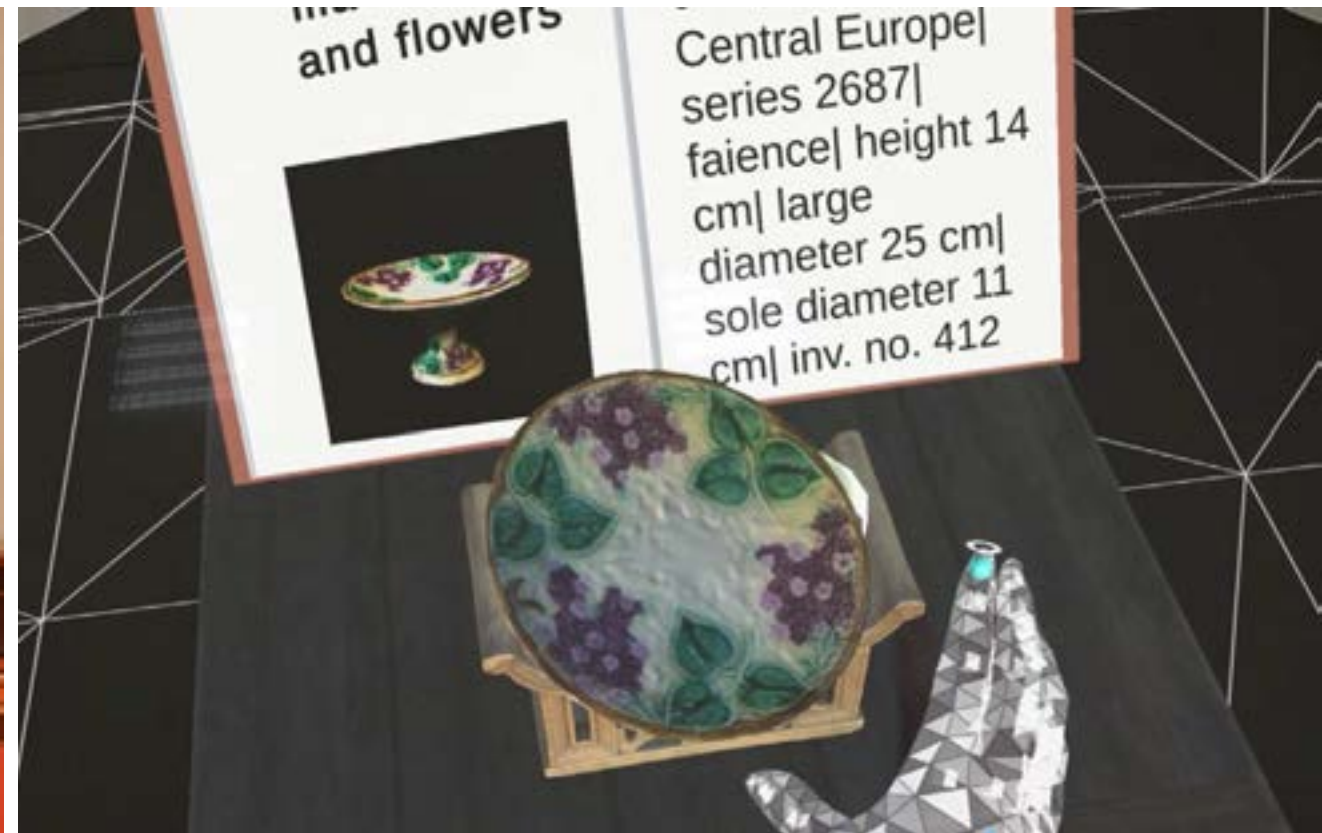
Fruit bowl decorated with lilac leaves and flowers| early 20th century| made in Central Europe| series 2687| faience| height 14 cm| large diameter 25 cm| sole diameter 11 cm| inv. no. 412

Microsoft HoloLens 2



The screenshot displays the Unity 2020.3.21f1 Personal interface. The central 3D view shows a scene with a wooden shelf on the left containing various small objects. In the center, there is a glowing yellow cylindrical object with a sign that says "TUTORIAL" and "Next". To the right of the cylinder is a yellow rectangular block with a purple top section. The interface includes several panels: Hierarchy (left), Inspector (right), Project (bottom left), and Console (bottom center). The Project panel shows a folder named "Assets" with subfolders like "Instruction", "Material", "MECIPT", "MixedRealityToolkit.Gen...", "Modele 3D", "MRTK", "Scenes", and "Scripts". The Console panel is currently empty.





Peter Jecza - biografie



TRIADE
FOUNDATION



Jecza Gallery

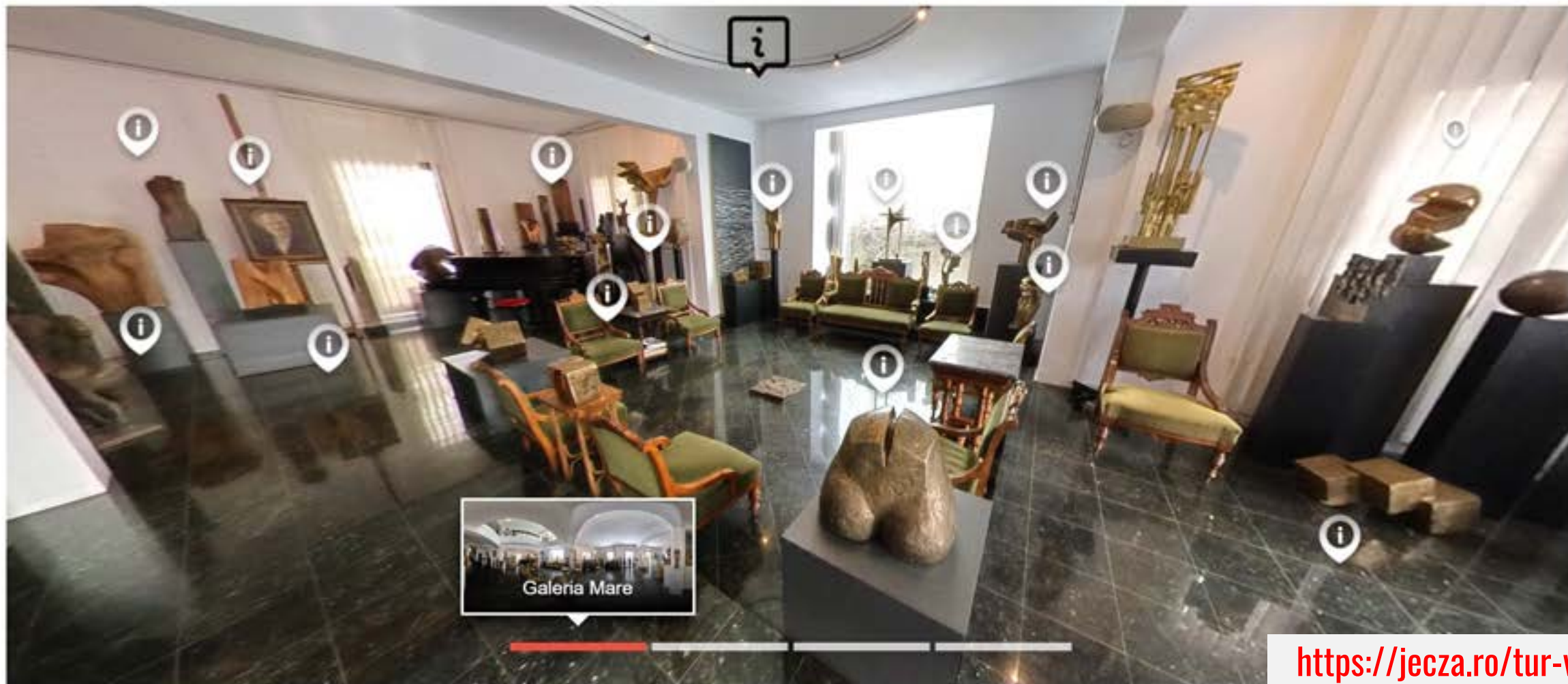


MINISTERUL CULTURII

<https://jecza.ro/>

Tur virtual

Lucrările sculptorului Peter Jecza își au de peste 20 de ani spațiul care le pune în valoare. Cunoscut, generic, drept Casa Jecza, acest spațiu și-a delimitat, în timp, funcții distincte, subîmpărțindu-se și redefinindu-se în consecință. Împărțite între Galeria mare, Galeria mică, Pasajul de la balcon sau Biblioteca din mansardă, lucrările se oferă vizitatorului care parcurge turul virtual, lăsându-l să simtă atmosfera locului care le găzduiește.





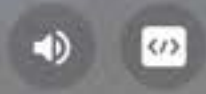
MECIPT

De la MECIPT la calculatoarele cuantice



Primăria
Municipiului
Timișoara

<https://muzeu.upt.ro/>





Panou de control MECIPT-1

MECIPT-1, pus în funcțiune în anul 1961, era un calculator tipic din generația I cu peste 2000 de tuburi electronice, zeci de mii de componente pasive, memorie externă un tambur echivalent 3 kilobiți, introducere de date aflate pe o bandă de hârtie perforată,



AugmentWearEdu Project



Project group



Filippo Sanfilippo



Tomas Blažauskas



Gionata Salvietti



Isabel Maria Pinto Ramos



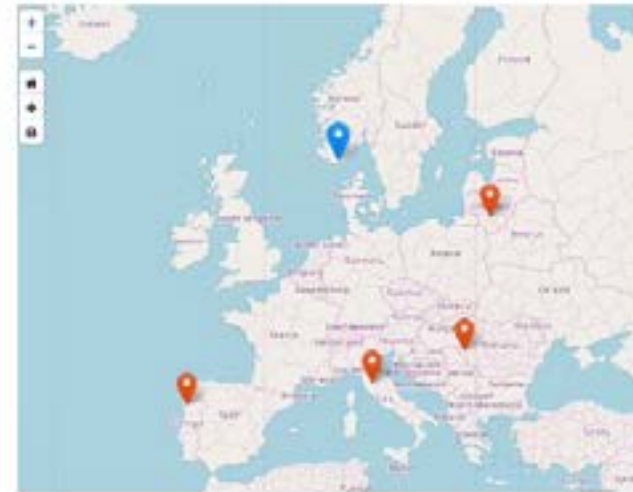
Silviu Vert



Jazlar Radiantli



Tim A. Majchrzak



<https://augmentedwearedu.uia.no>

Motivation

- Wearable haptic devices that enable a multi contact interaction with virtual objects;
- Opportunity of new e-Learning contents that include tactile experience;
- Necessary to develop systems with a reduced cost by using commercially available off-the-shelf (COTS) components.



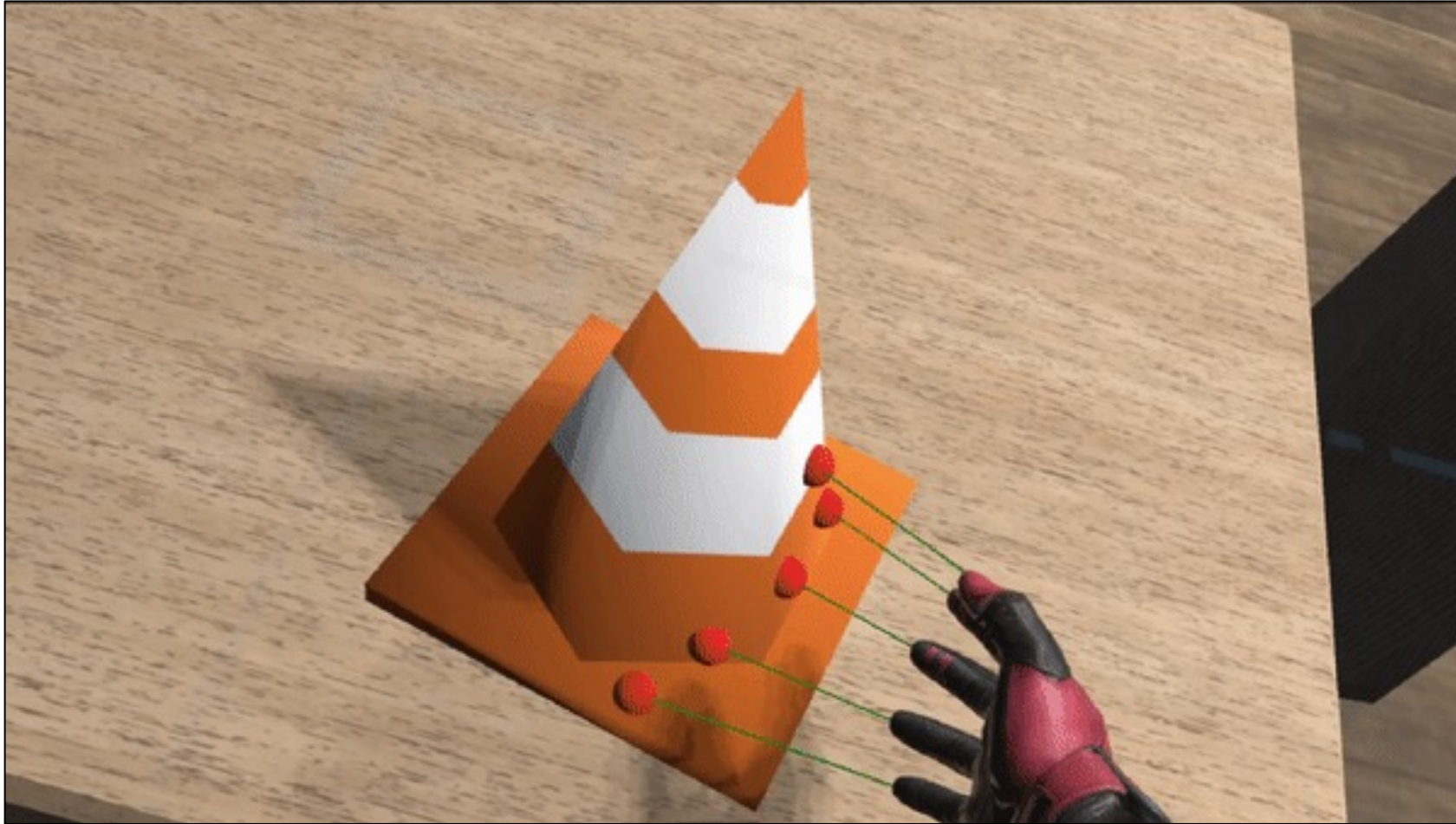
[2] Facebook Technologies, LLC. "Oculus Touch". 2021. url: <https://www.oculus.com/rift/>

[3] Valve Corporation. "Valve Index Controllers". 2021. url: https://store.steampowered.com/app/1059550/Valve_Index_Controllers/

[4] HaptX Inc. "HaptX Gloves". 2021. url: <https://haptx.com/>

Smart Diaspora 2023

Rendering strategies



Assessment tool for educators' competencies evaluation on using VR/AR including wearable haptic technologies

- The survey evaluated the educators' competencies on using VR/AR/haptic technologies
- Period: Jan-Feb 2023
- Participants: 20+ (UPT)
- Based on the Digital Competence Framework for Educators (DigCompEdu)



Use immersive technology for communication, collaboration, and professional development.

Establish communication with learners, parents and third parties using digital and immersive technologies. Collaboratively develop and improve organizational communication strategies.

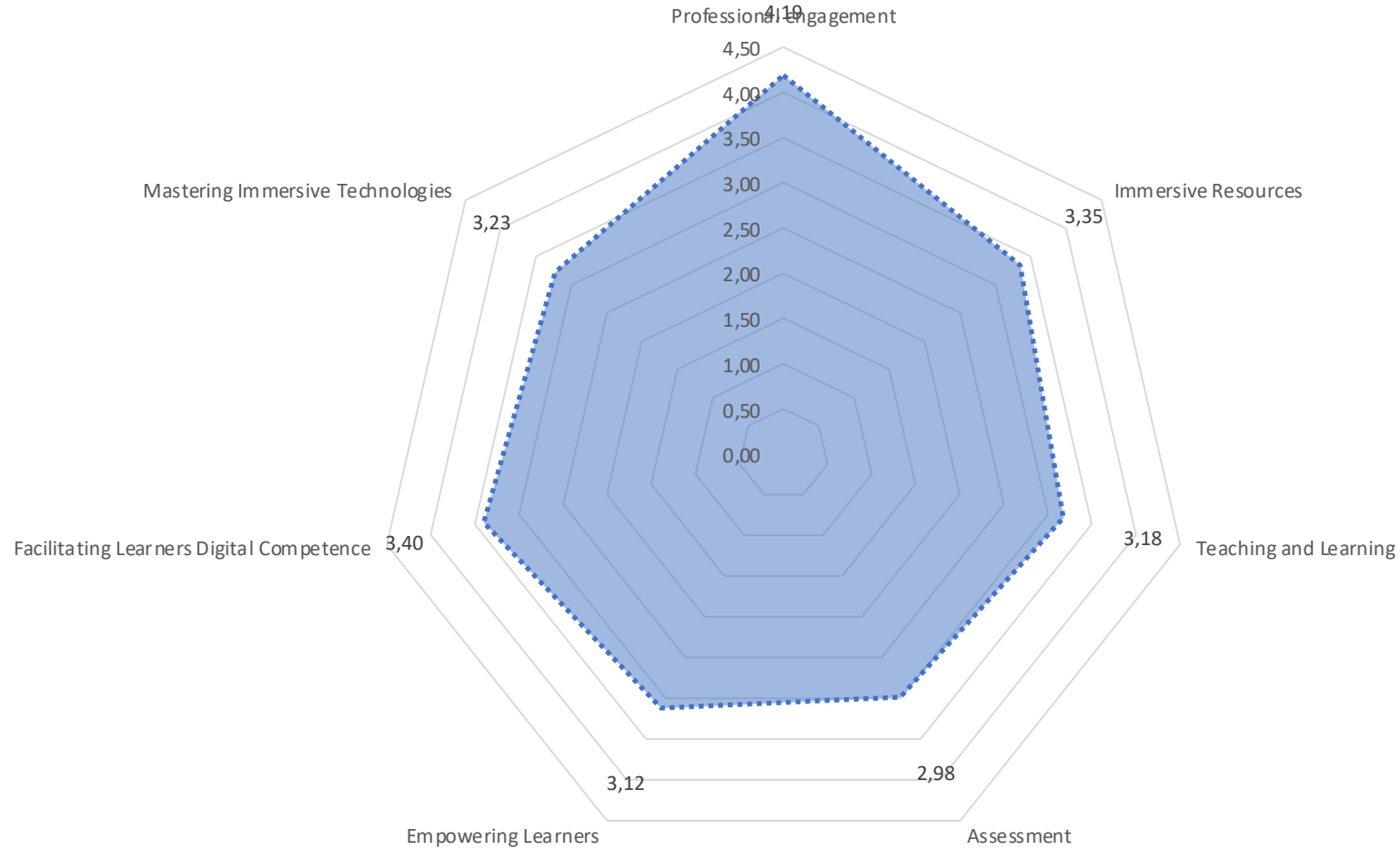
Organisational communication

At a basic level and with guidance, **I can identify communication channels, including those that use immersive technologies.**

At a basic level and with autonomy and appropriate guidance where needed, **I can compare different communication channels, including those that use immersive technologies.**

On my own and solving straightforward problems, **I can utilize communication channels, including those**

Overall results



UPT Digitalization Project 2021-2024 (~ 500k)



Silviu Vert

silviu.vert@upt.ro

@silviuvert



eLearning
Centre

elearning.upt.ro

