

A I F O C U S

Smart Interaction and Digital Contents

Project's Tutors:

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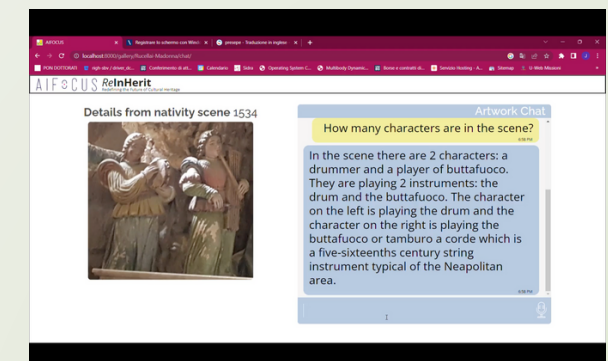
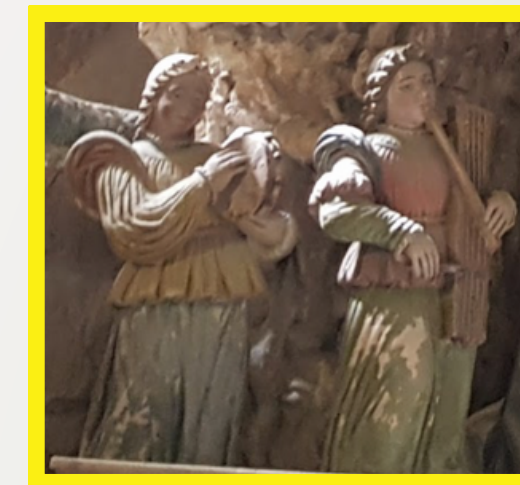
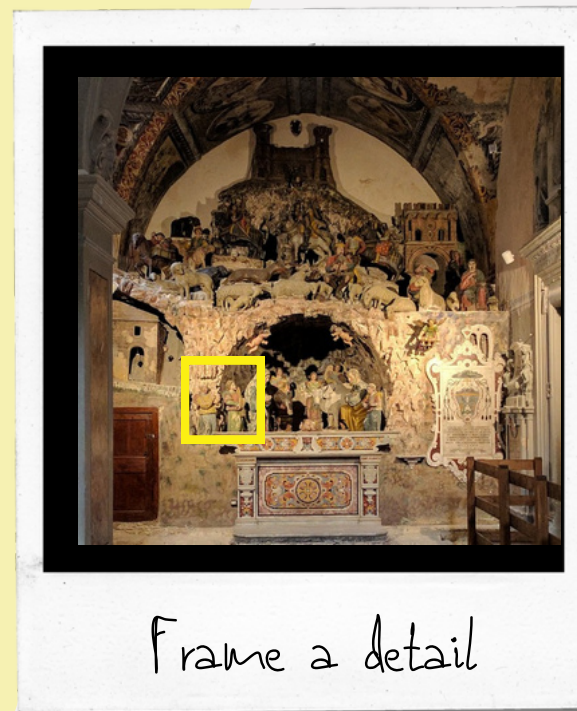
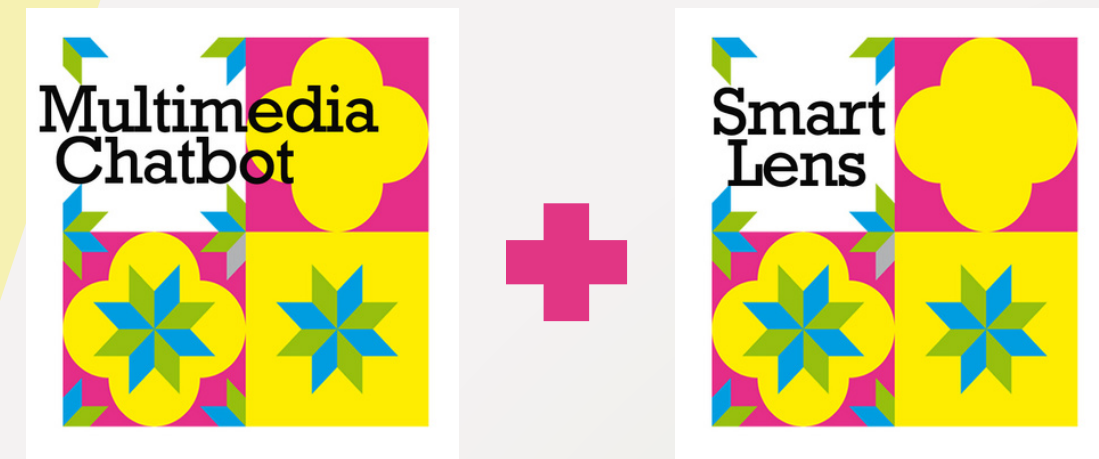
Projects's Candidate

Antonio Aprile - PAVANA A.P.S.
Giorgia Crosilla - UNIBO
Matteo Fabiani - UNIVPM
Silvia Liaci - UNIBAS
Jasmine Santinelli - UNIBG
Fabio Vangi - POLIBA

OUR PROJECT PROPOSALS



- WebApp that works through the camera of the smartphone
- Combines SmartLens and Chatbot in an easy and immediate way
- It could be used in every cultural context
- Focuses on significant details
- Gives reliable information about the artwork



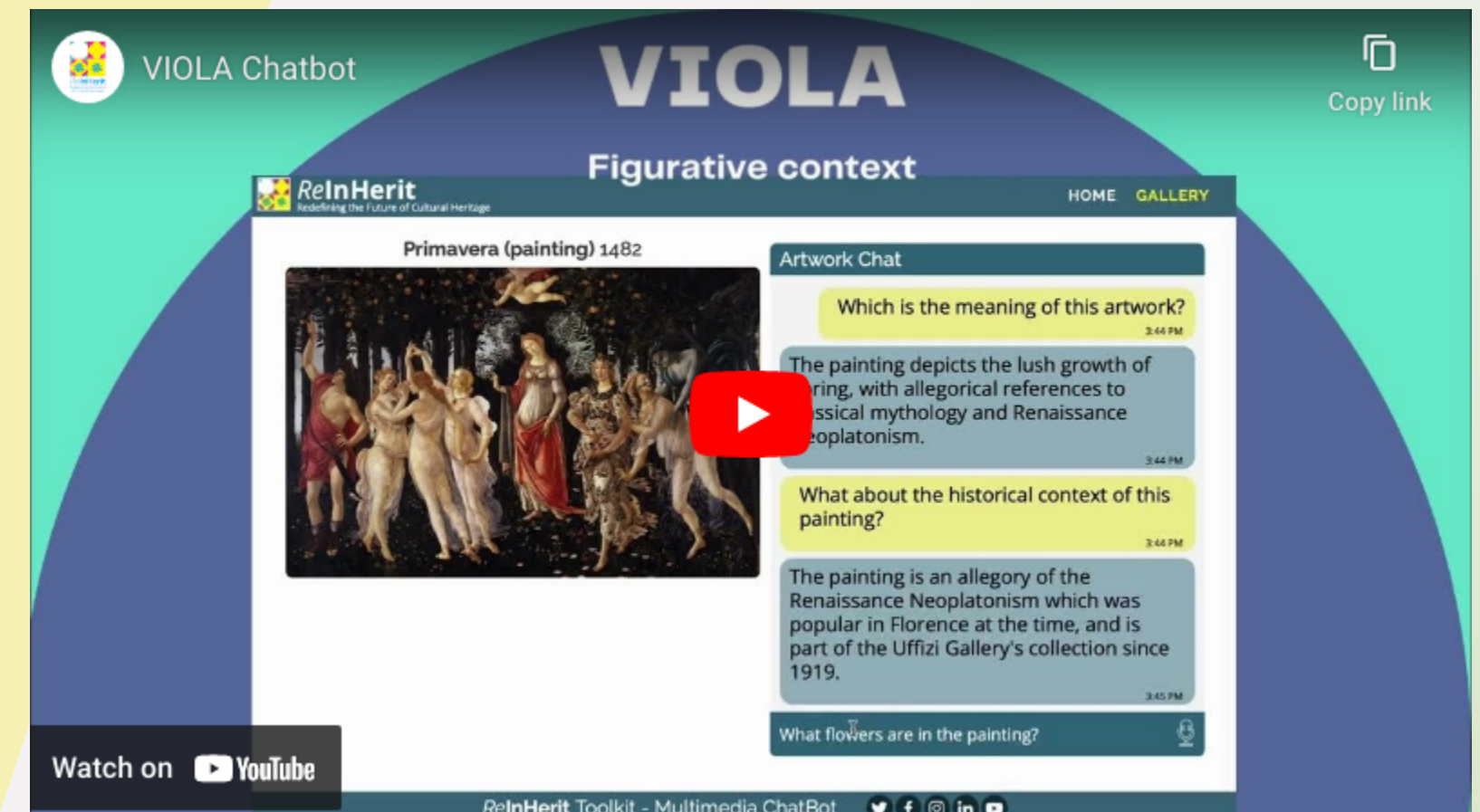
VIOLA CHATBOT

Pro:

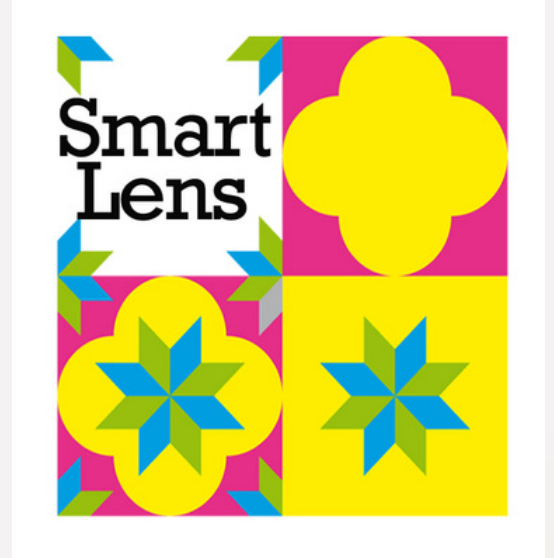
- Dynamic interaction
- Useful information multilanguage
- Possibility to use in different locations (museum, home)

Cons:

- Answering in different languages;
- No memory
- No context
- No orientation inside artwork
- Missing data
- No links between artworks



SMARTLENS



Pro:

- Easy to use
- Autodetect significant details
- Information about details

Cons:

- Hotspot is defined by the creator of the app
- No possibility to get statistical information about the most used hotspot
- No suggestion about other hotspots



TASKS




- Designing a new user interaction
- Combine VIOLA Chatbot and SmartLens to create a complete, high-performance app
- Create a demo using 3D Unity
- Adapt and test the app on a detail of the nativity scene in the Matera Cathedral
- Stimulate the user experience
- Provide engaging and consistent information



HISTORICAL RESEARCH

PRESEPE CINQUECENTESCO, ALTOBELLO PERSIO E SAMMAZZARO D'ALESSANO, 1534 - DUOMO DI MATERA



ID	IMMAGINE OPERA	TITOLO	AUTORE	DATA	COLLOCAZIONE	DESCRIZIONE
1	 https://drive.google.com/file/d/1k0FtB1WaL4P6ZX0P6sUICcG0I7ZcXzunX/view?usp=share_link	<p>Presepe cinquecentesco in pietra dura</p> <p>16th-century nativity scene in hard stone</p>	Altobello Persio e Sammazaro D'Alessano	1534	<p>Duomo di Matera, cappella dedicata in cornu evangelii</p> <p>Duomo of Matera, chapel dedicated in cornu evangelii</p>	<p>Il presepe in pietra calcarea, scolpita e dipinta, realizzato nel 1535 dagli scultori Altobello Persio da Montescaglioso e Sammazaro D'Alessano è l'opera che desta maggiore interesse tra i visitatori della Cattedrale di Matera, restituita al culto nel marzo scorso dopo restauri durati oltre dieci anni.</p> <p>Il presepe, visibile da una vetrata, su un lato dell'altare maggiore, colpisce i visitatori per la peculiarità della Natività con le statue della Sacra Famiglia poste in evidenza e a grandezza naturale, a sottolineare la centralità della rappresentazione della nascita di Cristo rispetto al paesaggio. Il presepe si segnala per il clima quasi fiabesco con il quale lo scultore realizzò l'opera, ambientata in un ambiente rinascimentale, con l'espressione austera e dolce di Maria e Giuseppe, evidenziato dalla ricchezza dei colori e delle vesti. Statue di figuranti, armenti, del castello e la volta della cappella adornata da icone di profeti, esaltano la Natività e l'annuncio della venuta di Cristo sulla Terra.</p> <p>La cappella del Presepe si segnala per per il ritrovamento, al di sotto del pavimento - durante i lavori di restauro della Cattedrale - di due cappelle preesistenti con affreschi di epoca tardo medievale e rinascimentale,</p>

LOGO

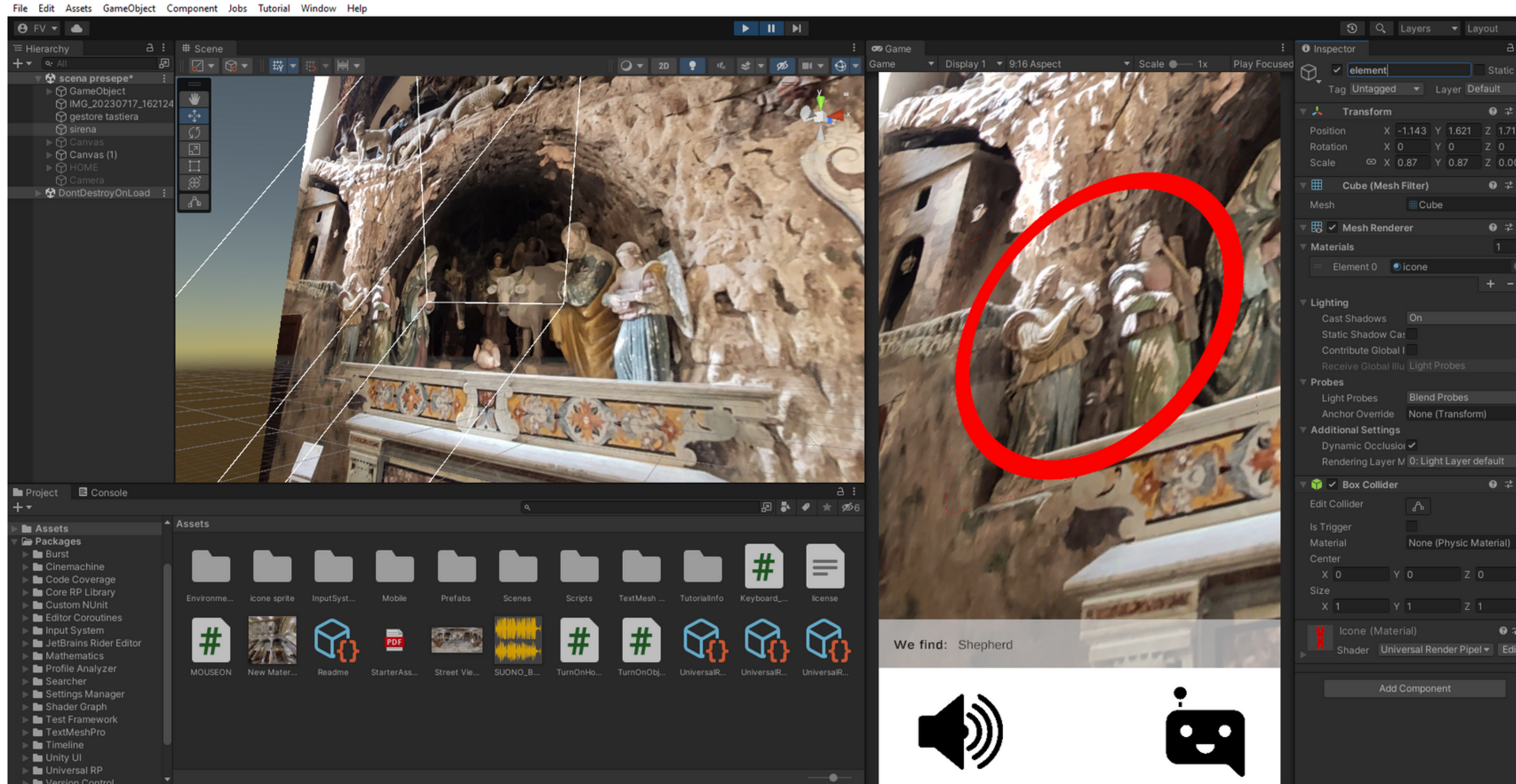


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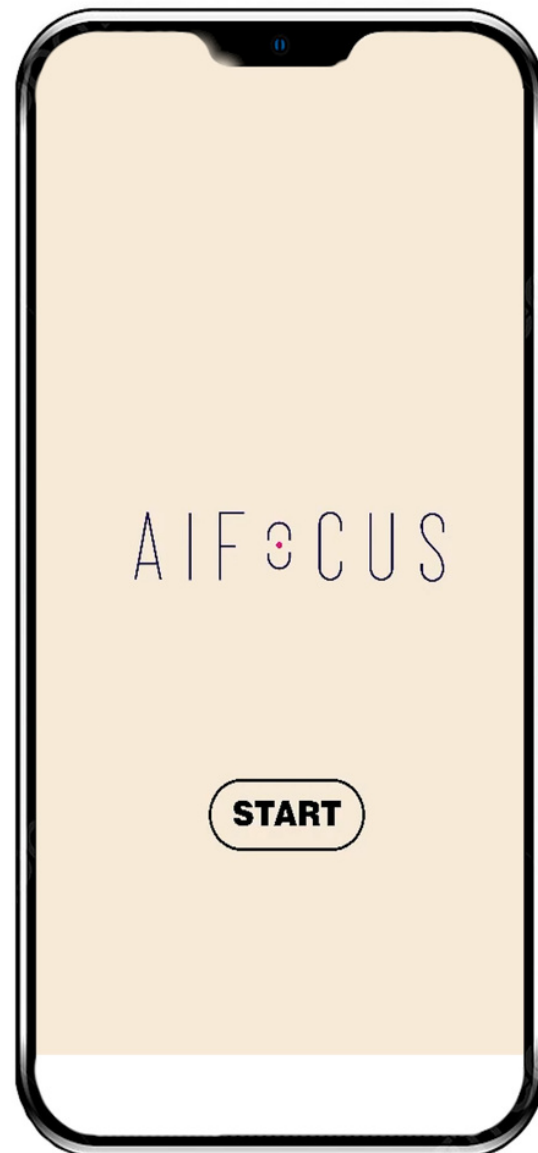
Artificial Intelligence For Culture & Users



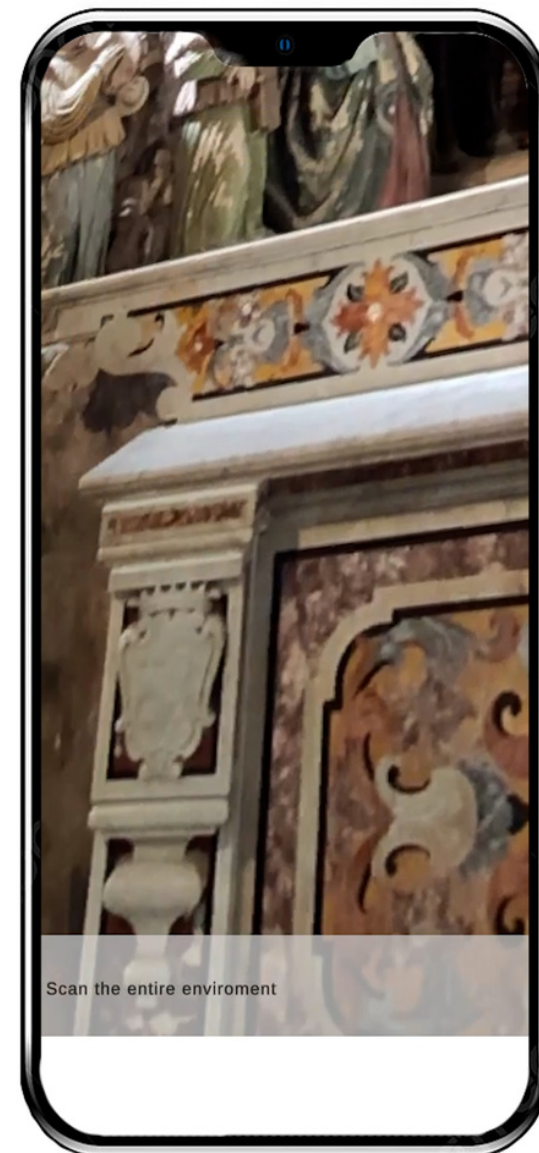
PROTOTYPE



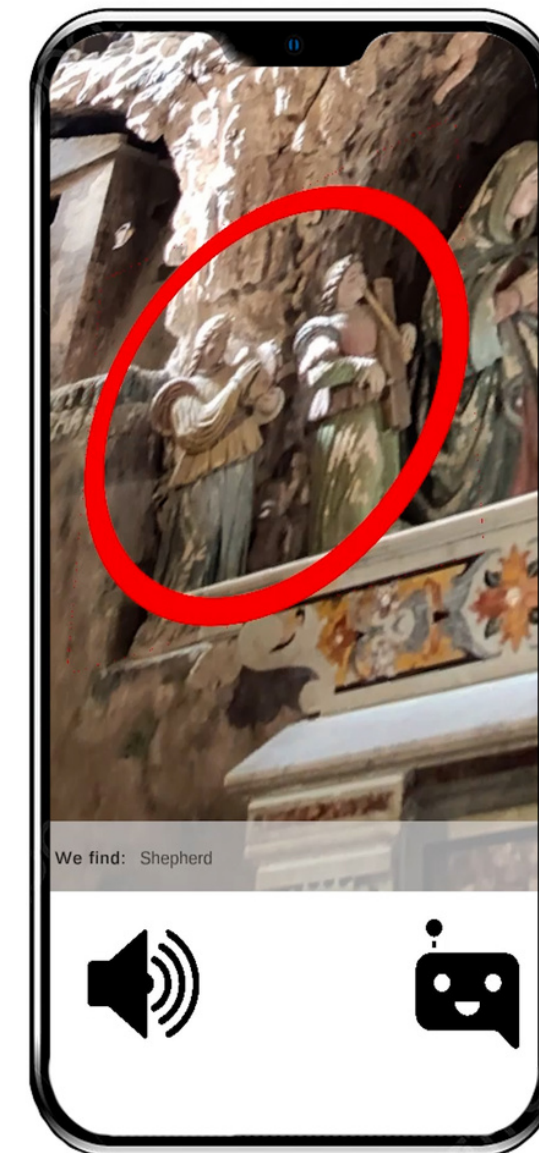
SCREENSHOT



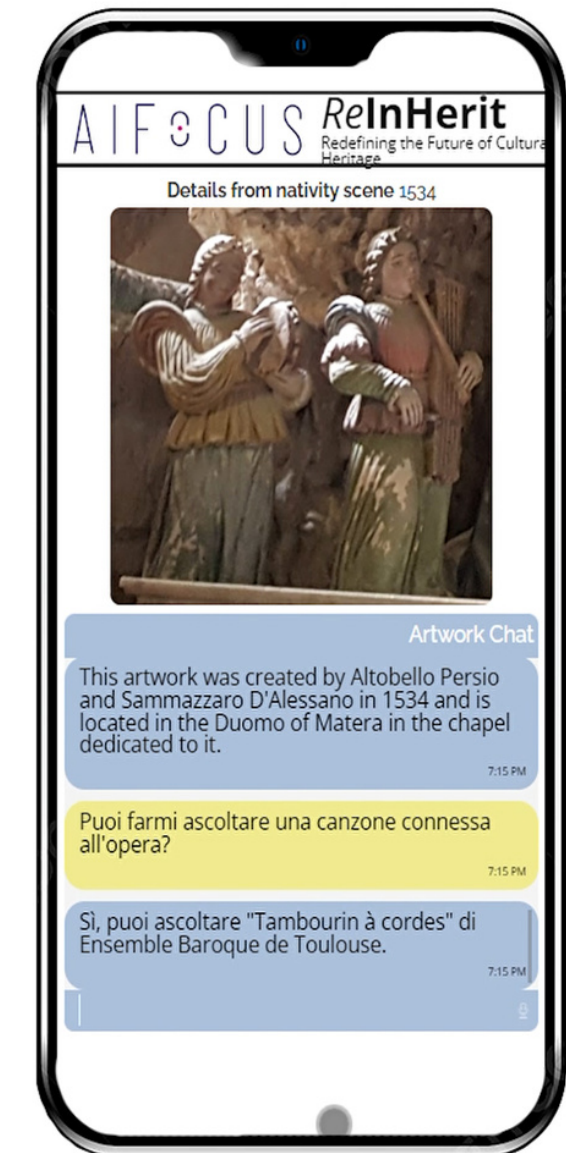
1 HOMEPAGE



2 USE THE WEBAPP



3 IDENTIFY THE OBJECT



4 START CHATBOT

PROTOTYPE





IMPLEMENTATION

We tested the app and we defined the limits of the application.

We tried to define a most suitable architecture for the database.

We then tried to improve the prompt to overcome some problems:

- language
- context
- uncomplete sentences
- unrequested information
- store information given by previous answers

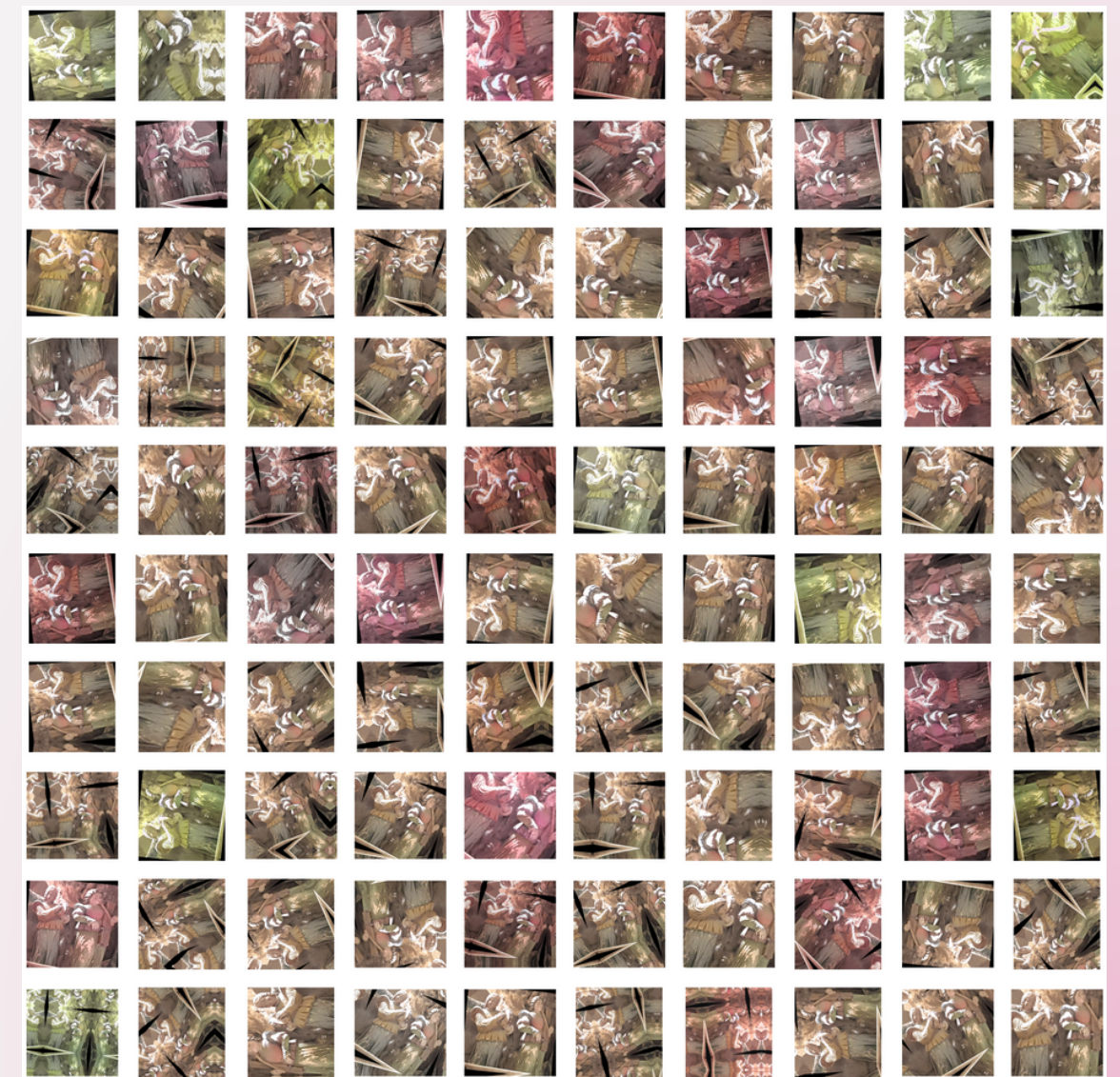
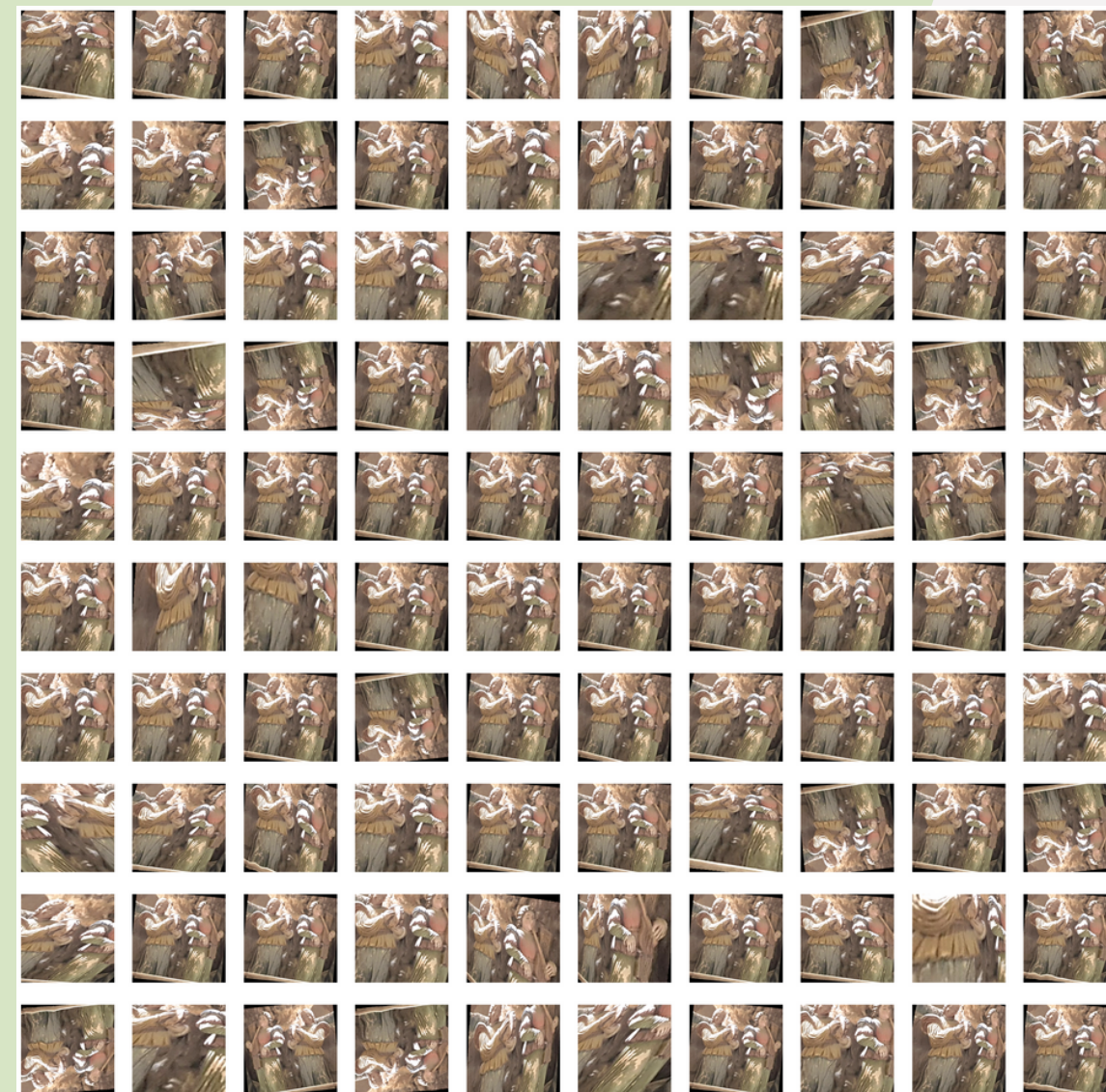




IMPLEMENTATION

We did data augmentation to train the model to recognize new hotspots. Unfortunately we were unable to retrain the model.

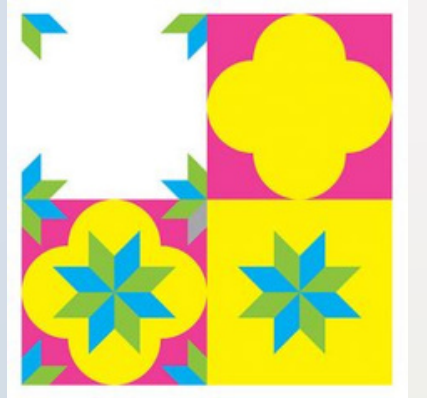
Transformations applied:
Rotate, Transpose, ShiftScaleRotate, Blur, OpticalDistortion, GridDistortion, HueSaturation, zoom, skew





CONCLUSION AND FUTURE DEVELOPMENTS

- Increase interaction between user and context
- More intuitive user interface
- Scalable and replicable webapp for all cultural contexts
- More detail and context information
- Visualization and Sharing multimedia information
- Links to other contexts starting from common elements
- Implementation of a Visual Grounding (VG) model to identify the most relevant object or region related to the chat-bot questions (es. glip)



A I F O C U S

Artificial Intelligence **F**or **C**ulture & **U**sers

Thanks for your attention

