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## Project St.Or.I.E

Strategy Organization Implementation Empowerment N°2022-2-IT01-KA210-VET-00096425

### AR AUGMENTED REALITY



### VR VIRTUAL REALITY



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## A Very Brief Introduction to AR and VR Tools

Liceul Tehnologic Ioan Slavici Timișoara  
by Prof. Simina-Stefania MARIS

## AR AUGMENTED REALITY

AR

- enhances the real world by overlaying digital content onto it
- integrates virtual elements with the physical surroundings



## VR VIRTUAL REALITY

VR

- creates a fully immersive virtual environment
- isolates the user from the physical environment



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## AR & VR Definitions

This booklet provides an overview of Augmented Reality (AR) and Virtual Reality (VR) technologies and explores how these technologies can be applied in character creation, education and storytelling.

**Augmented Reality (AR)** enhances the real world by overlaying digital elements onto the physical environment. It allows users to interact with both real and virtual content simultaneously.

**Virtual Reality (VR)** immerses users in a completely virtual environment, isolating them from the real world.

These technologies can be used to create characters by either integrating them into the real world (AR) or fully designing and interacting with them in a virtual space (VR).

## TOOLS FOR AR – TOOLS FOR VR

Tools for mobile phones:

- QR code readers
- Mobile phone applications (Android, Iphone)

Tools for webcams:

- Zoom video effects
- xpression camera

AR applications for mobile phones and / or computers

- Spotlight Heritage (for Timisoara)



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## Tools for AR & VR

Various tools are available for creating AR and VR experiences.

For mobile phones, applications and QR code readers can trigger AR content.

Webcams can use software such as Zoom video effects and Xpression camera to add augmented content or virtual avatars to video streams.

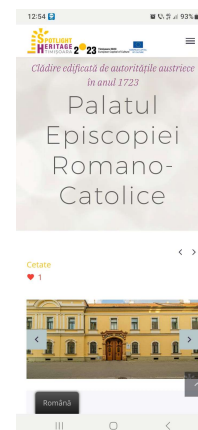
These tools allow creators to animate characters and blend them into real or virtual environments, offering a platform for interactive storytelling.

## AR and QR

QR codes are not AR technology on their own

QR codes can be used as a mechanism to access or trigger AR content or experiences

QR + Spotlight Heritage



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## AR and QR Codes

QR codes themselves are not AR, but they can serve as a gateway to access or trigger AR experiences.

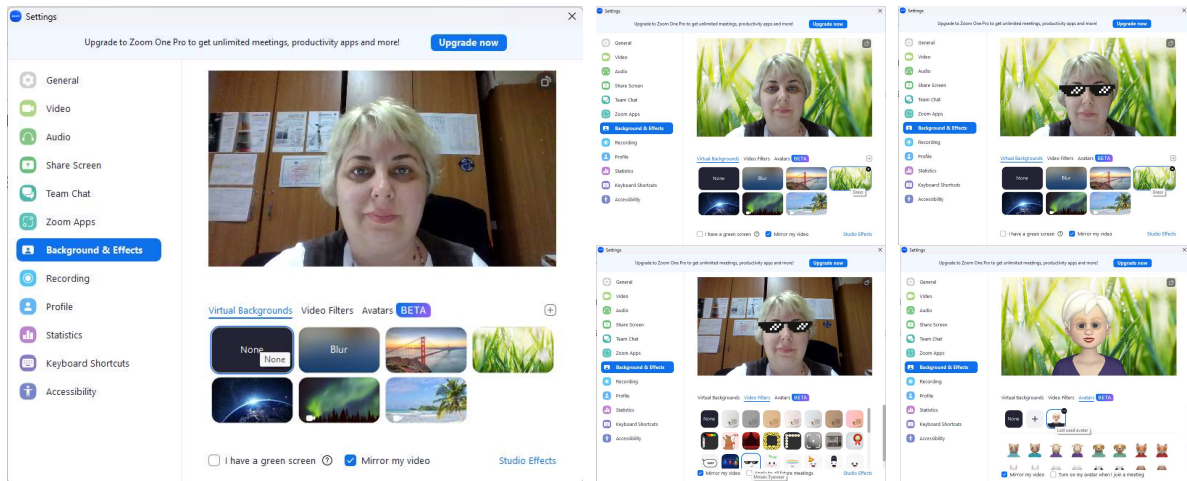
By scanning a QR code, users can launch an AR application or display augmented content related to the physical world.

This integration can be used for character creation by associating QR codes with specific AR experiences that animate or interact with characters when triggered.

# WEBCAM APPLICATIONS

Zoom video effects

- Also available in the free version



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## Webcam Applications for AR

Webcam applications like Zoom video effects and Xpression camera enable users to augment their video streams with digital elements.

These tools are useful for animating characters or incorporating virtual avatars into real-world settings.

For example, Xpression camera allows users to animate a character's image and record videos, which can be integrated into larger AR or VR storytelling projects.

## WEBCAM APPLICATIONS

xpression camera – for Mac and Windows <https://xpressioncamera.com/>

7 days free trial version for PRO

PRO version: 8 EUR/month

PRO version: add your own picture, animate it and record videos

Free solution:

We can document characters and places and combine them later in a video

Prerequisites:

Background (pictures)

Avatar (picture)

Text (to be prepared and read)

- This video refers to a teacher from a girls' school in the 1900s



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## AR for Character Creation Using Xpression Camera

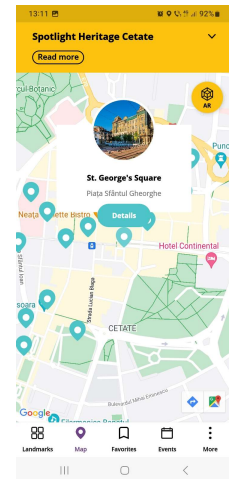
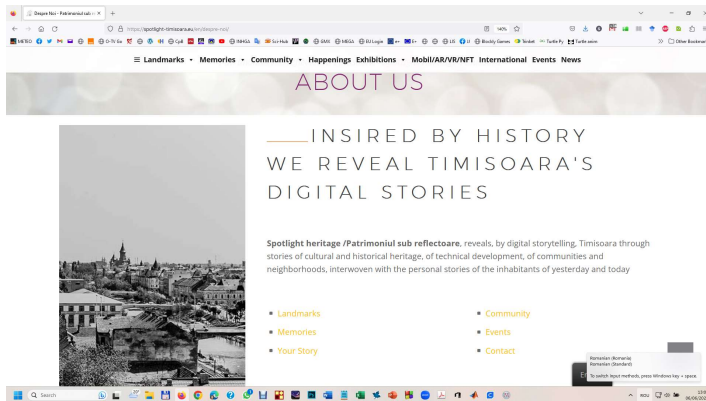
Xpression camera is a versatile tool that lets users animate pictures or avatars and place them within real-world backgrounds, using webcams.

By preparing a background, avatar, and narrative text, users can document and role-play characters, even creating educational content.

This approach can help bring historical or fictional characters to life in interactive video formats, merging augmented reality and storytelling.

# SPOTLIGHT HERITAGE – AN AR GUIDE TO TIMISOARA

Available as webpage and also as mobile application for Android



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## Spotlight Heritage: AR Guide

Spotlight Heritage is an AR guide to Timisoara, available as both a mobile app and a webpage.

It allows users to explore the city's historical landmarks by overlaying augmented content onto real-world locations.

This application demonstrates how AR can enhance cultural heritage experiences, providing historical context and interactive characters tied to physical spaces, potentially useful for creating character-driven storytelling in AR.



## FROM TODAY TO ANCIENT DAYS



### DEMO ON HOW TO CREATE A CHARACTER



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## Demo on How to Create a Character

In the following, we focus on the process of researching and creating a character using AR/VR technology, with a specific example of a teacher from a girls' school in Timisoara around 1900.

The process begins with gathering historical information and visual references, aided by tools like ChatGPT. Visual research and AI are used to construct an authentic narrative and visual representation.

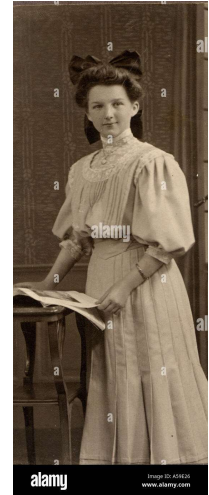
The character is then role-played in an AR/VR environment, bringing historical figures to life.

This combination of research and immersive technology offers an engaging method for storytelling, blending history with interactive digital experiences.



## The story behind the st.or.i.e demo video

The video refers to a teacher from a girls' school in the 1900s



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## Creating the St.Or.I.E Demo Video

The St.Or.I.E demo video showcases the potential for using AR and VR in storytelling.

It involves selecting a location, such as a historical school, and designing a character relevant to the setting.

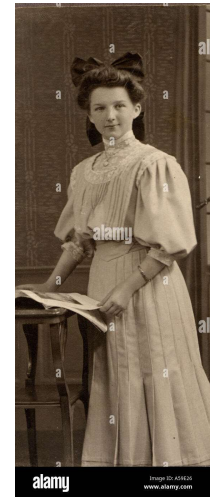
This video focuses on a teacher from the 1900s, combining historical research and role-playing to create a narrative.

AR or VR can animate the character and enhance the historical context, making the story more engaging.

## The story behind the st.or.i.e demo video

Tasks:

- Find a place to present in Timisoara
- Find a character related to the place
- Role-play the character



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## Researching Historical Characters for Role-Playing

Here we emphasize the research phase for creating a character.

The task involves finding relevant information about historical figures and their settings, such as teachers from girls' schools in Timisoara.

Using this research, a character is developed for role-playing, allowing users to engage with history through AR by visualizing the character in their real-world environment or VR.

Remember that AR can place the character within the physical environment, while VR can immerse the user in a fully recreated historical setting, offering immersive storytelling opportunities.

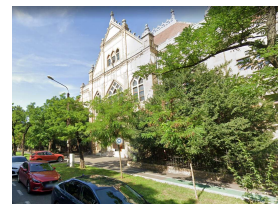
## The story behind the st.or.i.e demo video

### Find a place to present in Timisoara

I am a teacher, I want to present a school, preferably a school for girls.

Old schools:

- Since 1859, Complex of Roman Catholic nuns „Notre Dame”
  - (now: Colegiul Bănăţean)
  - documented on internet:
  - <https://www.banatulazi.ro/complexul-scolar-notre-dame-locul-unde-s-au-s-au-emancipat-primele-femei-din-banat/>
- Since 1881, Ms. Benedek school for girls
  - (now: Liceul Carmen Sylva)
  - documented on internet:
  - <https://colegiulcarmensylvatimisoara.ro/istoric/>



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## Role-Playing a Historical Character

We focus on the process of finding relevant information to create a character for the St.Or.I.E demo video.

For example, research can involve looking for historical figures, such as Ms. Benedek, who worked at a girls' school in Timisoara around 1900.

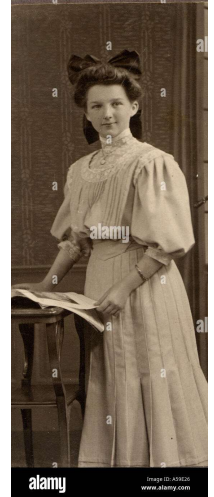
Despite limited information, users can still role-play based on general knowledge of education during that time.

This process allows character creation to be grounded in history while using augmented or virtual reality to bring these characters to life.

## The story behind the st.or.i.e demo video

### Find a character related to the place

- I found next to nothing about the curricula studied at the two schools from Timisoara
- But the curricula cannot be very different from a common school girls curricula
- I searched details on ChatGPT
- <https://chat.openai.com/share/153f0315-a4af-42b2-8e57-946f78e628db>



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## Researching Historical Characters – Using ChatGPT

When creating a character for AR or VR, research tools such as ChatGPT can assist in gathering detailed information about historical settings.

Here we highlight questions asked to ChatGPT regarding teachers from girls' schools in the 1900s.

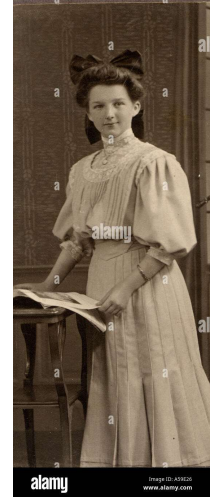
The responses helped in constructing a character with historically accurate behavior, appearance, and teaching methods.

This method showcases how AI can support the creative process in AR/VR character development by providing context and details to enrich the experience.

## The story behind the st.or.i.e demo video

### Find a character related to the place

- Questions for ChatGPT:
  - describe to me how a teacher looks like, teaching at a girls' school in the 1900s
  - what would the attitude of such a teacher be?
  - how does a girl school from 1900 look like?
  - how many students were in a class?
  - what is the curricula for a typical girl school at 1900?
- <https://chat.openai.com/share/153f0315-a4af-42b2-8e57-946f78e628db>



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## Role-Playing a Character Based on Research

The next step in creating the St.Or.I.E demo video is to construct a narrative based on historical research.

Once a timeline and relevant details have been established, creators can begin role-playing the character, such as a teacher from the 1900s.

Through AR or VR, these characters can be placed within an immersive or augmented setting, enhancing the storytelling experience.

This approach allows users to interact with history in an engaging, educational way, blending research and technology.

## The story behind the st.or.i.e demo video

### Find a character related to the place

- I am a teacher, I want to know more about a teacher in a school for girls
- Based on the results for the place, I established a timeline: around 1900
- I have found nothing about the real Ms. Benedek
- I searched on the internet pictures of woman teachers around 1900



<https://anastpaul.com/2018/05/09/saint-of-the-day-9-may-blessed-theresa-of-jesus-karolina-gerhardinger-1797-1879/>



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## Visual Representation of Historical Characters

Next, we focus on using visual references to accurately depict characters in AR or VR.

Our example involves searching for images of teachers from the 1900s to use as models for the character in the St.Or.I.E project.

This process ensures that the character looks authentic to the time period.

Combining visual research with historical context allows the character to be convincingly integrated into AR/VR environments, whether for educational purposes or immersive storytelling.

## The story behind the st.or.i.e demo video

### Role-play the character

- Story to be constructed following the gathered information



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## Role-Playing as a Teacher in 1900s Timisoara

In the end, the character creation process culminates in role-playing.

After gathering sufficient information, the historical character—a teacher from a girls' school in Timisoara—is brought to life.

The narrative and visual representation are informed by research, and AR or VR technology is used to place the character within a historical setting.

This approach demonstrates how immersive technologies can be used to recreate historical experiences, making them accessible and interactive for modern audiences.



## AR AUGMENTED REALITY



## VR VIRTUAL REALITY



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