Alessandra Trenchi

13th March 2024

Transcending Canvases:

Stelman's Cosmogonies Reimagined in VR Realms

STARTING POINT

Digitizing to extend knowledge.
A new way of experiencing: from a static painting to a living and explorable city.

METHODOLOGY

- Generativity will be achieved by employing **Variational Autoencoder** (VAE) starting from three input databases: images, sounds, tactile feedbacks.

- Through this type of Unsupervised Machine Learning model the final output will be the most similar to the starting input.

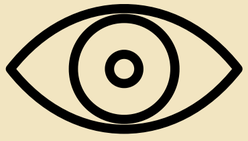
https://it.mathworks.com/help/deeplearning/ug/train-a-variational-autoencoder-vae-to-generate-images.html

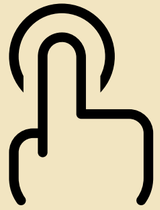
AI AND GENERATIVE ART

Using Artificial Intelligence to extend the starting landscape transforming it into an infinite world.

RESEARCH QUESTION:

How to deepen embodiment through sight, sound and touch?





STELMAN

1927-1998

Festa d'Estate, 1990.

Avant-gardes

Fragmentism

Ordered Chaos

Mass media critique

Cosmogonies

Anima Ingenua, 1992.

La Memoria, 1974.

STELMAN VR APPLICATION

- Immersive experience generating user embodiment.
- Multisensorial experience emulating a walk inside a city, where one can touch, hear and see the fragments.

Inspired by pop-up books: the single fragments of the painting become 3d.

TOUCH SYSTEM

Touch, being the first sense to develop and the earliest mode of contact with the world, it is the sense that mostly generates a high sense of presence. It remains always central in the shaping of experiences.

The First Sense. A Philosophical Study of Human Touch - Fulkerson.

SIMILAR VR APPs

- The VAN GOGH EXPERIENCE, is an immersive exhibition using videomapping, virtual reality, and reconstructions.

- The KLIMT EXPERIENCE is a show in which images and sound teleport the user on an incredible journey through Klimt's work.

https://vangoghexperience.it/about/
https://www.klimtexperience.com/?lang=en

TURNING A PAINTING INTO A CITY

CATEGORIZING PAINTINGS

Assigning each painting to one of the macro-categories: Idea, Nightmare, and Dream .

Assigning to each fragment a plane number to give it a certain depth (3-0).

Empty Skyscrapers, *Layer 1* explorable fragments (before generativity).

TARGET AUDIENCE

- CREATIVE INDIVIDUALS to enter the realm of imagination.
- GENERATIVE ARTISTS to display their works.
- INDIVIDUALS WITH IMPAIRMENTS to have a real city simulator.

EMPTY SKYSCRAPERS
1973

Building the VR Project Plan
on Oculus Quest 2

INTERACTIVE ELEMENTS

- **Menu Systems:** Interactive menus and touch interfaces will allow users to access settings, and teleport horizontally and vertically among fragments and layers within the VR experience.
- **Feedback Systems:** Users will receive feedbacks on their actions: visual cues, vibrations, and audio responses.

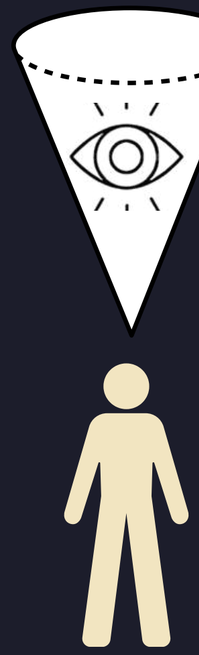
UI WALKTHROUGH


TOUCH THE FRAGMENT
TO ACTIVATE ITS SOUND
TOUCH ME

Users are presented with words related to categories of explorable Cosmogonies.

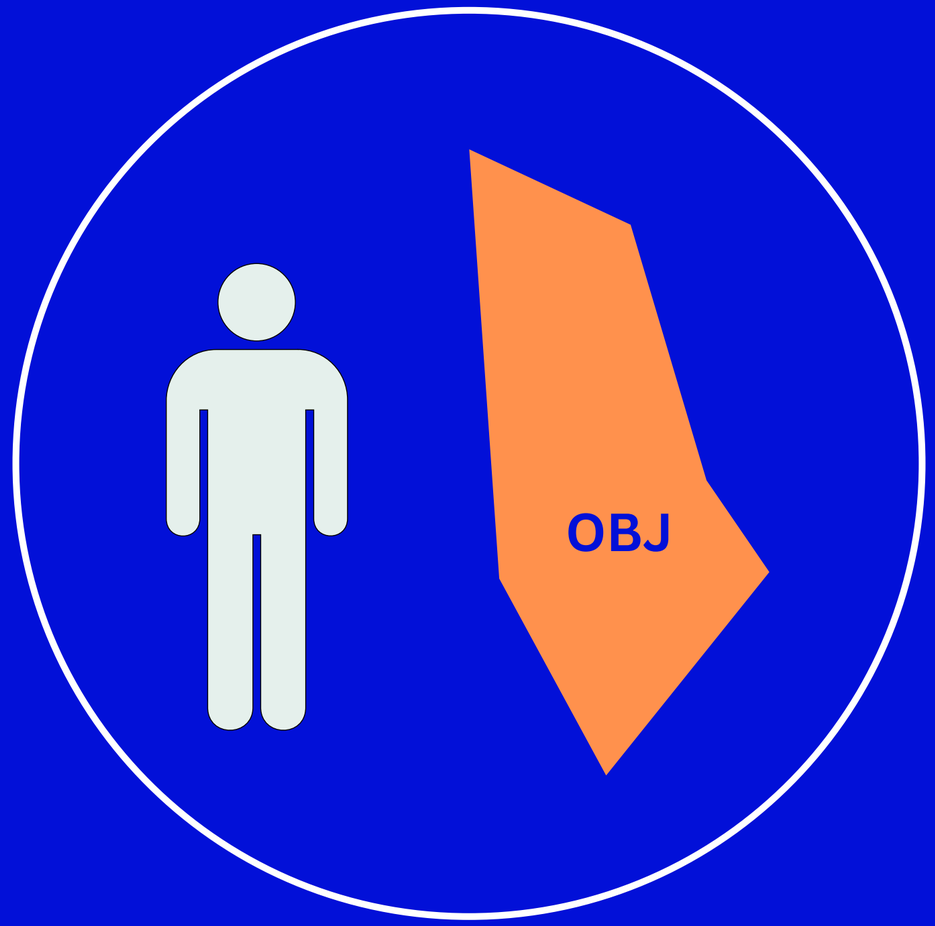
DREAM ON

From afar the painting appears as a cohesive cityscape.

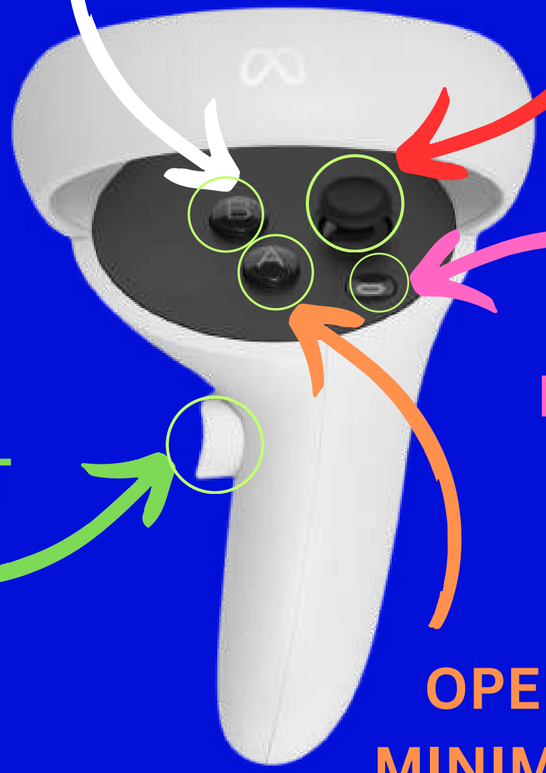


While the user approaches the fragments become explorable.

By walking in close proximity of a fragment, the fragment is activated, while the connected sound and touch are experienced.

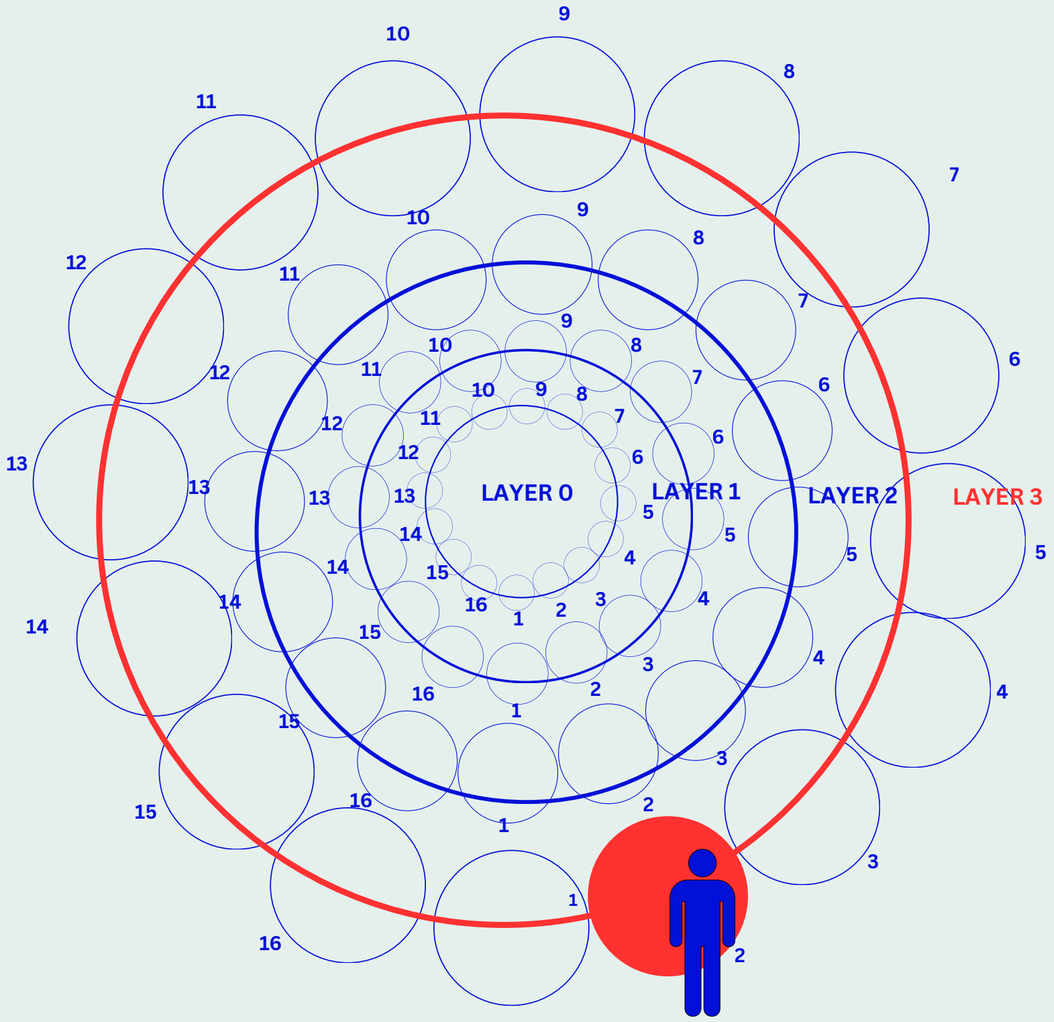


THE OCULUS QUEST CONTROLLER



MENU NAVIGATION

Prevent motion sickness, by including a usable menu to seamlessly teleport to different layers of depth and different fragments inside the meta-city.



ACTIVE LAYER

ACTIVE FRAGMENT

Base VR App Development

LOOKING FOR A TEAM TO DEVELOP

1. Build a VR Base Application in Unity importing all existing fragments, building menus.

2. Horizontal and Vertical Navigation Paths: Set up two distinct navigation paths for users: horizontal for moving between fragments and vertical for navigating through the depths of fragments.

Base VR App Development

LOOKING FOR A TEAM TO DEVELOP

3. Area-Based Sound and Haptic Feedback:

Identify specific areas within each fragment where scrap sound and tactile feedback should be activated.

4. Testing:

Ensure the navigation paths work seamlessly and that feedbacks are triggered accurately when approaching the designated areas.

Generative App Development

LOOKING FOR A TEAM TO DEVELOP

1. Further Development of VAEs:

Extend the VAE models for image, sound, and haptic feedback generation.

2. Training Databases for Generative Models:

Curate and preprocess training datasets for VAEs. Gather Stelman's fragments for images, white noises for sound, and relevant data for haptic feedback to create robust databases.

Generative App Development

LOOKING FOR A TEAM TO DEVELOP

3. Optimizing VR Application Performance:

Smooth user path.

4. User Interaction Refinement:

Refining UI elements, making adjustments based on feedback.

5. Testing and Debugging:

Testing and debugging to identify and resolve any potential issues with the generative art systems.

CONSIDERATIONS

Device Compatibility.

Develop the VR application to be compatible across different devices, ensuring a consistent and high-quality experience on various platforms. Adapt UI elements and features to accommodate different VR hardware specifications.

Documentation.

Document the codebase comprehensively, providing clear instructions for future development.

FURTHER ENHANCEMENTS

- **HIGHER PERSONALIZATION** giving users the possibility of dragging, dropping and even removing the fragments according to their taste.

- **GENERATIVE ARTISTS** could add their own fragment to the collection.

CONCLUSIONS

In conclusion, the Stelman-AI Generative Art Project is a step-by-step guide to redefining artistic expression in virtual reality by showcasing the revolutionary impact of Generative Art.


THANK YOU FOR
LISTENING