

# Rubicon: VR Mixed-Media Animated Video-Art Installation

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Figure 1: Rubicon; a mixed media video art animated and live action short film displayed in a VR environment.

## ABSTRACT

The presentation of my film, Rubicon, will be in a virtual environment; an environment that is much more immersive and intense than an in-person film viewing.

The tools to create this display include:

- **VR Hardware:** VR goggles/Oculus RIFT
- **Software:** Autodesk Maya, Pixologic ZBrush, Adobe After Effects, Toon Boom Animate Pro, and Unreal Engine 4.25.

The display is solving an aesthetic challenge and the current physical one of social distancing.

Prior to the April/May time period, the film display was to be more traditional.

Rubicon follows an unorthodox pipeline for animated films; it uses very low poly geometry with baked normal maps and is displayed in Unreal Engine. Similar to the pipeline for video-games. (See Figure 1.)

## KEYWORDS

Virtual Reality, Animation, Visual Effects, Film, Video-Art, Modeling, Rigging, Unreal Engine, Interactivity, Video-Games.

## 1 INTRODUCTION

The pandemic has given me the opportunity to enhance my skills in a way that can intensify the art experience. Learning VR has felt like being handed a megaphone for communicating more powerful messages.

Our world is becoming more technically connecting while also becoming more physically disconnected. The next adaptation for museums and galleries will be a virtual one.

Though virtual and CGI worlds were first made popular in entertainment and film, the next area in which it will be more ubiquitous or mainstream will be for art

and education. This installation adapts a gaming pipeline from Maya to Unreal into virtual art. It allows a model of virtual display to create a simulated world with parallel screens showing a film - one film is live-action with CGI and the other is animated.

The pipeline for Rubicon is similar to 3D Gaming-Real time Engine modeling; instead of the standard animated film pipeline. Also a modeling of a installation display was created in Autodesk Maya and later exported to Unreal Engine where the VR Blueprint was used for developing an interactive VR installation. (See Figure 2.)

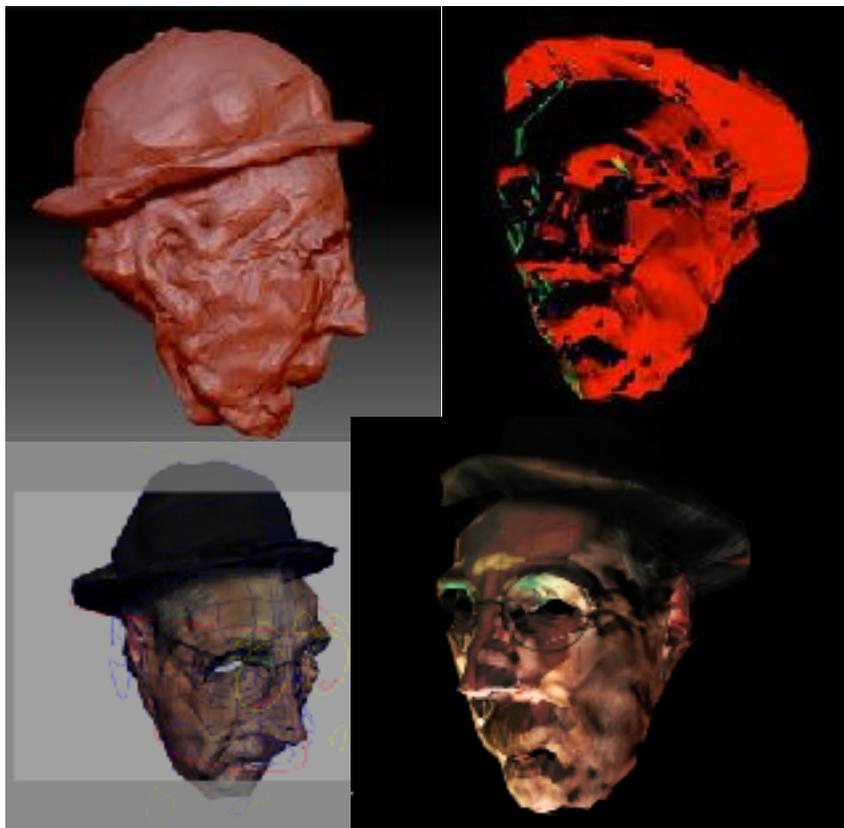


Figure 2: Rubicon's head sculpted in ZBrush, a low poly model and baked normal maps was applied in Autodesk Maya.

Rubicon: VR mixed-media animated video-art installation. Siggraph, Aug 1- Aug 5 2021, Los Angeles Convention Center.

## 2 EXPOSITION

Rubicon addresses the political, economic and social meltdowns of 2020 – a time in which we are captured. In Rubicon, the spectator will feel, experience and become part of the installation. Feelings of hyper-awareness, claustrophobia and being enveloping are expected.

The VR display of this video art installation instead of the physical display. Not only works as a

logistic method because of the social distancing circumstances we are experiencing; but also creates an environment of interactivity and immersiveness that enhances the strong message in the film much more than a standalone art piece.

Rubicon VR pipeline begins by modeling a virtual installation environment in Autodesk Maya, then exporting a FBX using Maya Game Exporter. (See Figure 3)

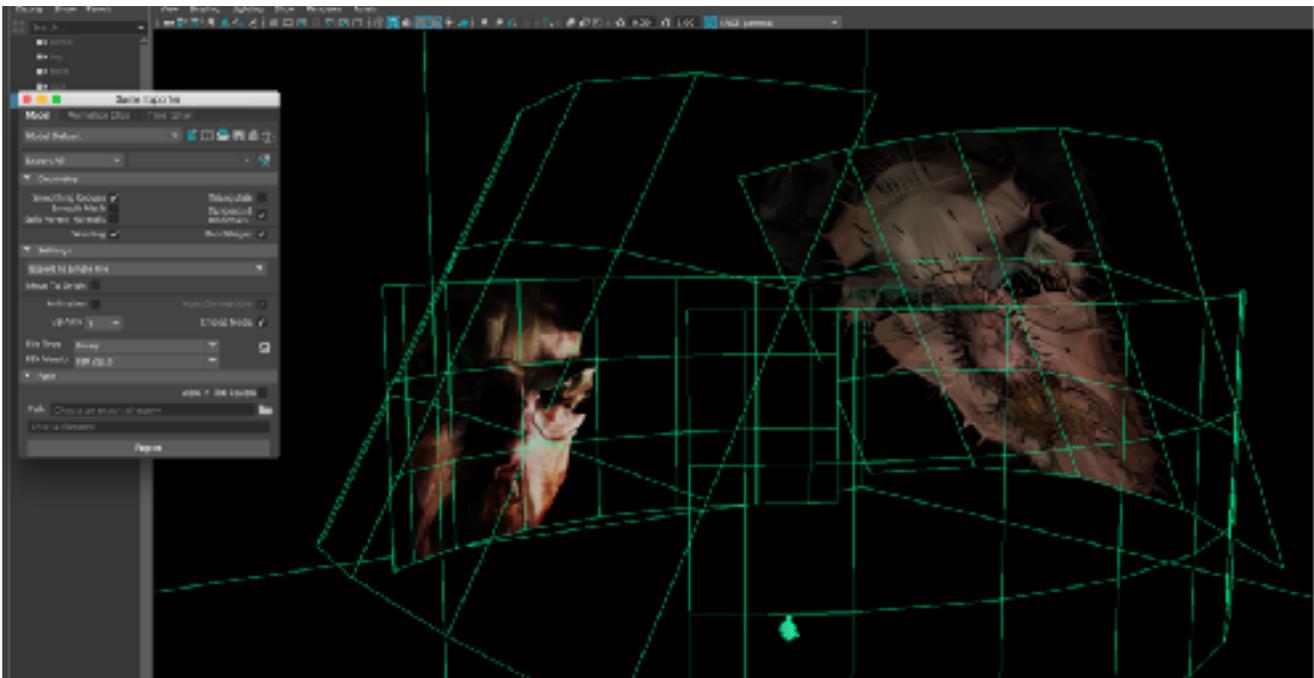


Figure 3: Rubicon's VR installation display CGI model is exported from Autodesk Maya into Unreal Engine.

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In Unreal Engine 4.25 a VR Blueprint Project is created and the Geometry is imported.  
An RV Media Player Source is created and the movie

files are brought into Unreal Engine. Both the Sound and Video RV\_Media Player are dragged into each mesh. (See Figure 4.)

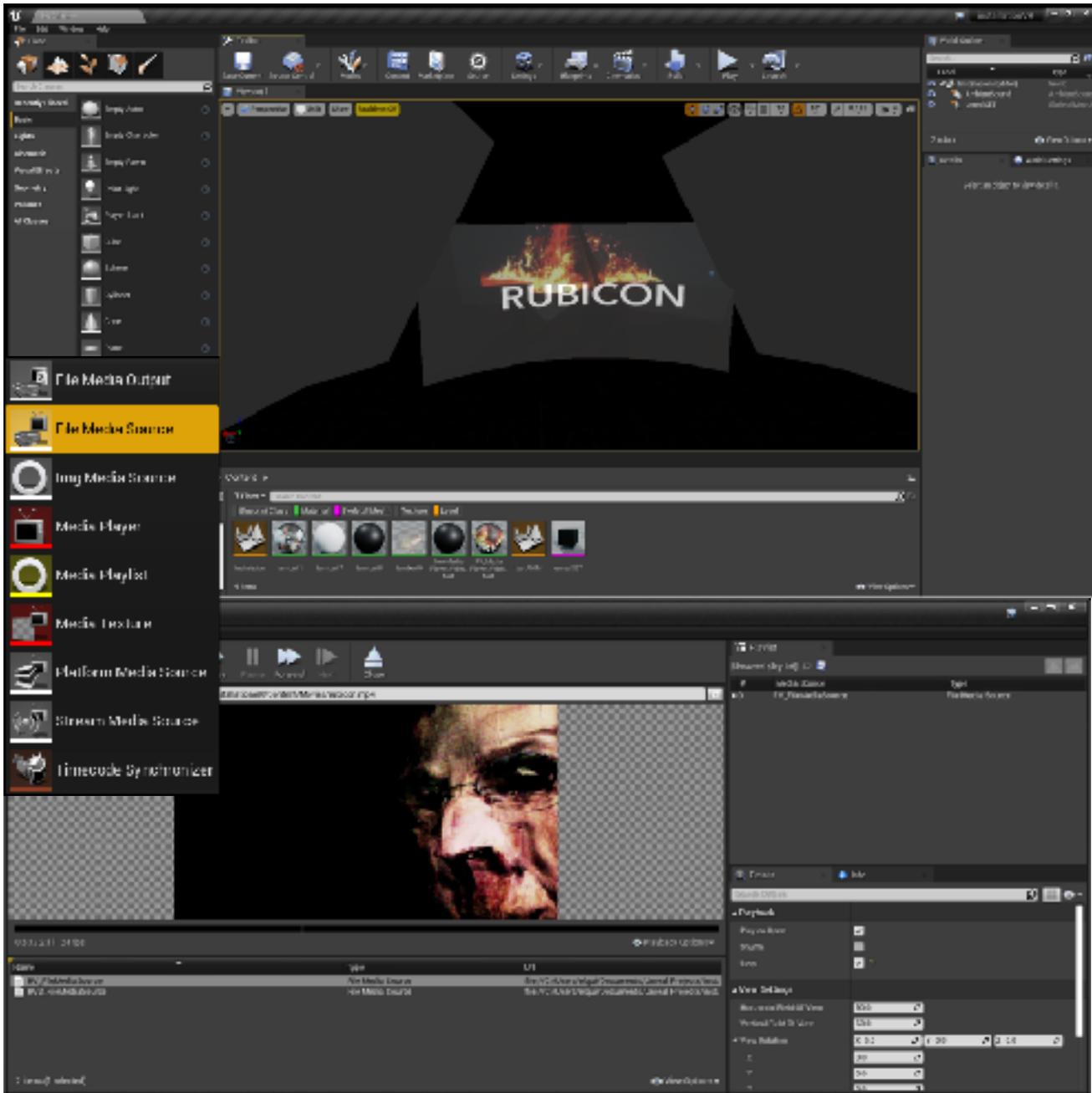


Figure 4: The File Media source node network allows the movies to play inside unreal as a media texture.

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Now the Project is VR ready and can be enjoyed using VR equipment, Connecting this equipment to the computer and running VR mode in Unreal Engine. The 3D animation was brought into Unreal Using Alembic Cache in Autodesk MAYA allowing to bring complex deformation of the 3D meshes.

The 3D animated meshes render in real time. Blueprints in Unreal where set for Teleportation and interactivity. The project cooks and packs with no problem in Windows. The platform uses both controllers from VIVE and OCULUS. (See Figure 5. )

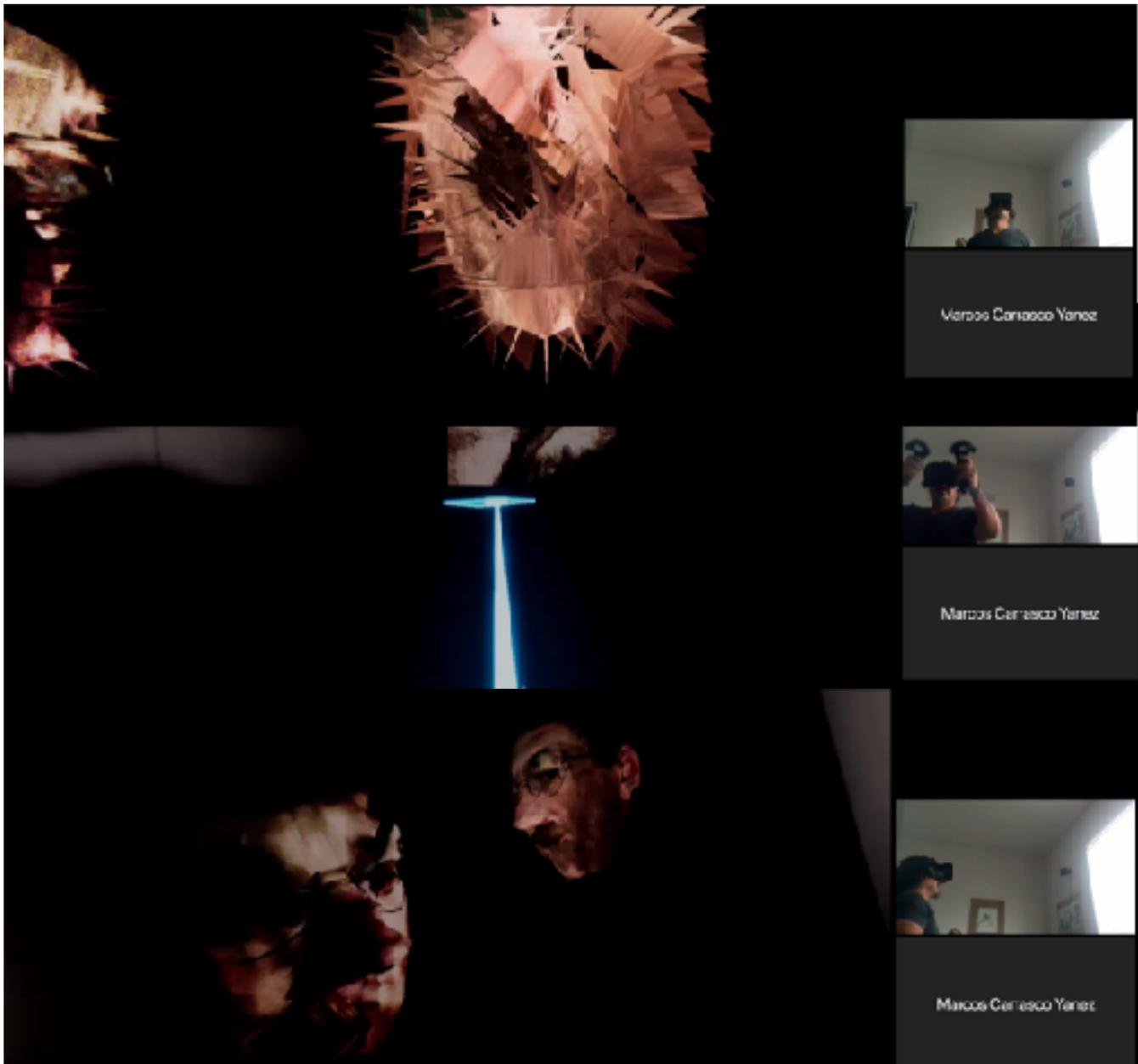


Figure 5: Rubicon now is VR ready and can be experienced with VR goggles like Oculus or VIVE.



### CONCLUSION AND FUTURE WORK

Learning interactivity for the project is the next focus. It will be used to add interactive options to display other CGI assets (geometries) for the spectator. That way, the exhibit can be repeated or extended for a dif-

ferent experience. The CGI animation pipeline represent a useful tool for virtual art that solves a variety of current issues in art display.

This display technique is both cost effective and allows art logistically to be more accessible - more accessible to diverse, global audiences.

### ACKNOWLEDGEMENTS

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### REFERENCES

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<https://docs.unrealengine.com/en-US/index.html>