

Using Game Technology to Enhance Delivery of Traditional Dramatic Narratives

Calvin Oktavialdy Setia

Department of Computer Science and Creative Technologies

University of the West of England
Coldharbour Lane
Bristol, UK

Calvin2.Setia@live.uwe.ac.uk



Abstract

A play is a great way to tell a story. However, with the way that it is served, a play only interests a group of people. In this report, we are going to explore how game technologies can be used to enhance the delivery of traditional dramatic narratives from a play, specifically “Medea”, to try to introduce the story to groups of people that might not be interested in other storytelling mediums.

Author Keywords

VR; Play; Presence

Introduction

This project serves as a prototype to show that the project can be expanded into a full fledged game / project. The prototype provides two demo levels taken from the play; one where Medea first met with Jason, and another where Medea goes to a cauldron to make a poison. This report will focus on the first level since the second level is very similar and its main focus is to show how the project can be reused for other projects.

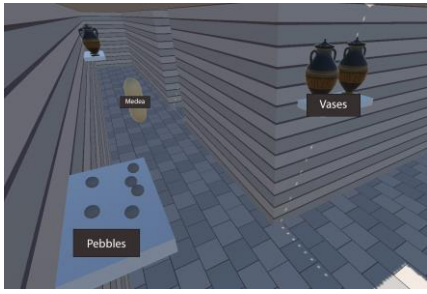


Figure 1. Medea, pebbles, and vases



Figure 2. Jason as the end point

The levels would be very linear with clear end goals. The user would act as a godly figure in the scene, overlooking and influencing the actions in the scene. The user would use VR, with the cameras placed in the corner of rooms. The user would need to guide Medea towards the level's point of interest which is the end of the level. Medea can be guided by interacting with objects in the scene, by throwing them on the ground to attract Medea to it.

The project aims to allow the users to feel a sense of presence in the scene. Allowing them to immerse themselves with the emotions of the characters. All while showing their importance in the act as a godly presence.

Background Research

This project uses VR as it can create the feeling of presence in a scene (Diemer et al., 2015). Presence is tied to the emotions of the user and so this project uses it to control the user's emotion (Diemer et al., 2015).

Outcomes

As seen in figures 1 & 2, the demo shows Medea, the main character of the story, and a point of interest that the user has to lead her towards.

Interactions

In the game, users can interact with objects in the scene. With each interaction, Medea would be "lured" and approach the interacted object. The user can interact in two ways; by throwing pebbles on the ground or pulling vases towards them. The

interactables are scattered throughout the level, leaving the user to use them as they wish.

As the interactables touch the ground, they will try to attract Medea towards its location. The object will try to create a raycast towards Medea, and will only attract her if it directly hits her. An indicator will move along the raycast, showing whether or not the raycast is successful, shown with the figures below.

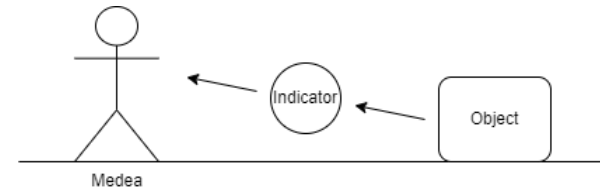


Figure 3. Successful raycast

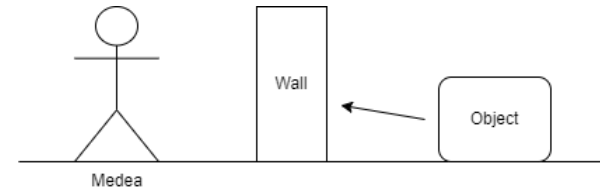


Figure 4. Failed raycast

PEBBLES

Pebbles can be picked up and thrown, allowing the users to control where the object will land. Picking up objects would make the user feel as if they are present in the scene (Diemer et al., 2015). It would also connect the user emotionally to the scene as it shows how the user's action affects the scene (Diemer et al.,

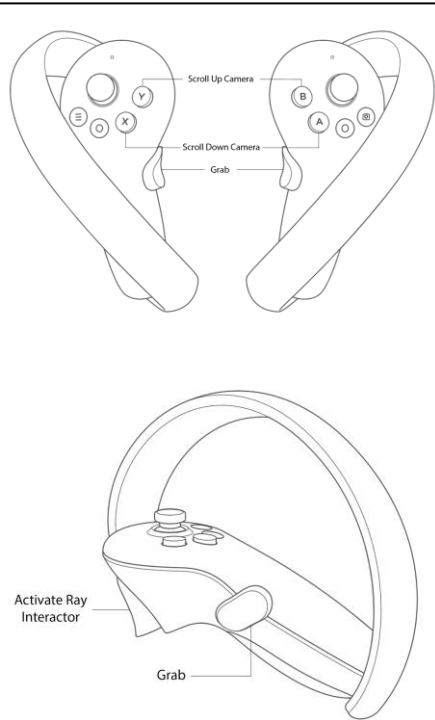


Figure 6. Control scheme



Figure 7. Camera angle showing character's vulnerability towards the user

2015). However, the pebbles are limited as they can only be thrown as far as the user can throw them.

VASES

Vases can be interacted by selecting them using the ray interactor, and pulling them towards the user as seen from figure 5. This will throw them towards the player, similar to how you can pull objects towards you in Half-Life: Alyx (Valve, 2020). The vases' interaction allows the users to attract Medea towards further distance, making up for the pebble's limitation. The interaction is also chosen to further emphasize how powerful the users are and how important they are as a godly figure in the scene.

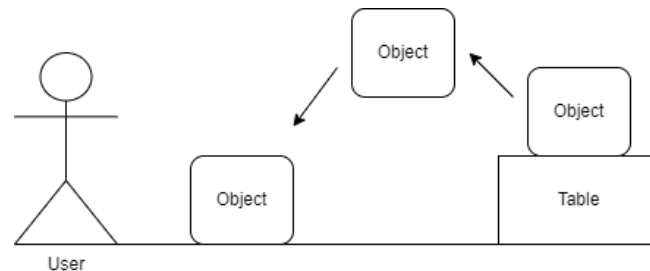


Figure 5. Pulling objects towards the player

Controls

As the project uses VR, the users would use a VR controller as the main point of interactions. The control schemes are designed to be easily used by users that are and aren't familiar with common VR control schemes. To achieve this, both left and right controllers have the same control schemes. The controllers have two different interactors; a direct interactor and a ray interactor. The control schemes can be seen in figure 6.

The direct interactor is the default interactor, indicated by the "Grab" button in figure 6. This interactor would check if an object is close enough to be interacted with. The interactor would let the user grab objects and throw them.

The ray interactor acts as a pointer and lets the user interact with further objects. The user can access the interactor by holding the trigger. It would then show a line showing where the interactor is aiming. The user can then use the "Grab" button to interact with the object. If the user tries to interact with the vase, they can then flick their controller up and it would throw the vase towards them. If the user tries to interact with the pebble, it would simply pull the object to their hand.

As the project allows for multiple camera positions, the user would need to scroll between those positions. The users can use the designated button to scroll up or down between the multiple cameras.

Camera

The camera angle is used to show the user that they act as a godly being in the scene, overlooking the scene. As shown with figure 7, the top-down camera angle shows that the user "spies" the characters. Letting them know that they are not directly in the scene, but are powerful enough to see, and interact with the scene. The angle is also used to show that the characters in the scene, such as Medea and Jason, seem smaller, weaker, and more vulnerable than the user (2022).

Navigation

As interactable objects touch the ground, they will attract Medea towards it. Medea uses Unity's NavMesh

system to navigate through the scene. The NavMesh system is used as it allows for fine control of the navigation system. It is to prevent Medea from getting too close to the walls in the scene. It is also used because the navigation system it uses which is A* algorithm, is known for its speed (Foead et al., 2021).

Medea moves through the scene using the NavMeshAgent component. When attracted by an object, the agent would set its destination to the object's location. The component would handle all Medea's movement through the NavMesh. After getting attracted towards an object, Medea would go back to her original position after a while. This is to show the user that while they can affect the scene, the characters are still sentient and have a life of their own. This is done by starting a timer when Medea gets attracted, and setting the agent's destination to her original position when the timer runs out.

Quality of Life

As the user is not expected to immediately know what to do, some quality of life features are made in the form of respawning vases, and Medea checkpoints.

RESPAWNING VASES

Since the amount of interactables in the scene is limited, vases are made to be able to respawn. This is to prevent the user from getting stuck on a level after doing their interactions. After a vase touches the ground, it will start a timer and spawn another vase in its original position.

MEDEA CHECKPOINTS

Medea returning to her starting point could hinder users from progressing through the level, as the user might

struggle to move her quickly to the next location before she returns. To prevent this, checkpoints are made throughout the level. When Medea passes through a checkpoint, her original position is set to the checkpoint's position. This would also allow the user to take in the emotion of the level as intended instead of panicking because they need to be quick in the level.

Distractions

As much as VR is good at making the user feel as if they are present in the virtual world, it is also easy for the user to be distracted by the world itself. There are times where during testing, the users are distracted by the world around them, and would just ignore the interactions to play with the controllers, or just throw the pebbles on the characters.

To prevent the users being distracted by the world, the cameras are placed in the top corners of the rooms, mimicking CCTV cameras. This would discourage the user to look behind them as there would just be a wall. The amount of pebbles that can be found on the levels are also limited, forcing players to strategize on how to use them, and preventing them from "playing" with them. To prevent the users from "playing" with the controller, the controller model used is made to be as simple as possible, only showing the most important parts of the controller. These measures are used to keep the focus of the game to the characters, keeping the story flowing, and the user's emotions as intended.

Evaluation

This project presents a novel way to adapt traditional dramatic narratives into an immersive VR experience. By using game technologies, in this instance VR, this project aims to engage more audiences to a classic play

like "Medea". The user, positioned as a godly figure, interacts with the scenes by guiding the main character, Medea, through two demo levels. The use of VR enhances user presence, allowing them to emotionally connect with the characters and the story.

The interaction mechanics, involving the manipulation of objects to attract Medea, provide a tangible link between the user's actions and the narrative's progression. The control schemes, utilizing both direct and ray interactors, are designed for user-friendly navigation in VR, ensuring accessibility for both experienced and novice users.

Quality of life features, such as respawning vases and Medea checkpoints, ensures the user to be able to experience the story without much challenge. All while distraction management measures, such as camera placement and limited resources, contribute to maintaining user focus and emotion throughout the game.

While the prototype successfully demonstrates the potential of the concept, further development and expansion are important to fully realize the goal of transforming traditional plays into engaging VR experience. The project could lay a foundation for future exploration of narrative-driven VR games that bridge the gap between classical storytelling and games technology.

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