

# The Spirit Train: A VR game for immersive exploration

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**Abstract.** As VR technology advances, VR games have gradually become a research hotspot. This paper investigates a VR virtual game called “Ghost Train,” which was developed for missing persons events. In the game, players can play as ghosts, open related feature platforms, and also play different roles to experience different lives. By doing so, they can experience the disadvantaged groups that need help and the masses that can help them. The purpose of the game is to encourage people to calmly help strangers they encounter in trouble on the road, rather than leaving without a trace. Extensive testing showed that the game design has good performance in terms of interaction and immersion, and can also provide better help for the physical and mental health of missing persons. Overall, this paper’s research provides valuable insights for the development of VR games that can have a positive impact on real-world situations.

**Keywords:** VR game, Ghost Train, game design.

## 1. Introduction

According to the White Paper on China's Missing Population, 2,739 people go missing in China almost every day during the year 2020, and up to one million times a year [1]. Missing persons are not only a global social problem that requires extreme attention, but they can also cause psychological trauma and pain to families. Even in the midst of today's changing economic and social situation and the strengthening of the public security authorities' methods of response, there are still many criminal gangs, and given the increase in missing persons, human trafficking is receiving social and scientific attention [2].

In this regard, there are three types of disappearance: active, passive and "unconscious". Active disappearances are those in which the missing person, for some purpose, actively disconnects himself or herself and creates a no-signal area, similar to those used for debt avoidance, drug busts, tracing, etc. Passive disappearances are those where the missing person is in a passive mode of existence for some reason or purpose, and where the missing person does not intend to go missing, and where the majority of the missing person is involved in trafficking, murder, kidnapping and other illegal transactions. In the case of "unconscious" disappearances, the missing person is neither actively disconnected nor in a passive survival situation, but is more likely to be a transient disappearance due to a medical condition, such as Alzheimer's disease or some mental illness [3].

As mentioned above, there is a variety of reasons for the disappearance of different types of missing persons. While people are concerned about missing people and the families of the victims, why not take a different perspective on the inner workings of the missing person and the landscape of the world they

see, or experience some of the stories as a bystander. So, for this reason, such a virtual game, Ghost Train, was developed and designed.

Rav Kost proposes that games are about learning something instinctive in a joyful way [4]. So when the player is in the game they need to be fully engaged in it and immerse themselves in experiencing the life trajectory of another human being. This game therefore makes full use of the VR virtual reality technology and thus goes for a graft, a completely new technology developed during the 20th century [5]. In this game, virtual data is used to create a virtual world in which a variety of realistic sensory experiences are available, allowing players to enter the game more quickly and have the best possible experience. Through continuous exploration of the game content, players can alleviate inner pressure and anxiety.

## 2. The design of the Spirit Train

### 2.1. Design concept

The virtual game "Spirit Train" will give gamers a very realistic gaming experience. As all the missing people return to the train in their original spirit form. On this train they all have one thing in common: they feel overwhelmed, confused, etc., and of course they react to their surroundings in a puzzled way. At the same time, the player often enters the game with a purpose, which may be to heal his own wounds or to help other players in a crisis, but when the player is on this strange train, he simulates the psychological state of a missing person in an unfamiliar environment and in the present moment. Therefore, in order to achieve certain goals, the player will search and learn about his own surroundings. At the same time the player begins to observe the surroundings and become curious about the unknown, which causes the gamer's emotions to ebb and flow and allows them to experience the whole experience in an immersive environment. With this in mind, the game has been designed as a series of stories linked together to provide a great gaming experience for the player. Of course, the side effects show that even in this real life, they can feel helpless and stupid because of this, as if they are entering a huge swamp and sinking into it, but right here, family and friends and people like them reach out and tell them never to give up.

### 2.2. Backstory

A pre and post disappearance story based on the disappearance of people and the creation of a no man's land for them. The train is also a journey from the thorny land of mist to the wonderful world of No Man's Land. To awaken this type of player, we have created a train to No Man's Land (shown in the Figure 1), where the player will experience different life experiences, either what he has experienced before or what others are experiencing now. The designer has designed these stories into this train to no man's land, hoping that through this game the gamer will emerge from the darkness and embrace the sunshine of his own life.



**Figure 1.** The train to no man's land (Original).

Of course, on the way to No Man's Land, the gamer may become curious about the surroundings, which triggers part of the game's plot. For example, the game is triggered when the player walks into the train restaurant and starts the game mode; when the player sits at the table and orders from the conductor, part of the storyline related to affection is triggered; when the conductor brings the ordered food, the player starts to taste it. When the conductor brings the meal to the table, the player tastes it. Different dishes trigger different storylines related to family. The storyline will vary from item to item. It is hoped that this game will make every gamer feel the power of love and inspire more kindness in their hearts.

### 2.3. Character design

There are about 4 characters in this game: the conductor, the conductor, the bartender, the passengers, etc. In this virtual game, the player can be any of the characters in the game. Of course, each character has its own mechanics, and when a passenger enters the train restaurant, he will see a conductor standing by and a bartender at the bar making drinks.

The Ghost is the main character (shown in Figure 2) and the player is able to name him or herself and enter the world from his or her first point of view to experience various emotional stories. The player becomes a ghost and enters the world of the No Man's Land train. In order to make the game more immersive, all players will not know who they are, what brought them to the train, or where the train is going. Throughout the game, you unlock the storyline by acquiring items and obtaining pieces of memory. You can learn everything you want to know about yourself. And to fill in the gaps in your mind.



**Figure 2.** Key players (Original).

This virtual game has several hidden subplots where the gamer can experience not only the ghost characters in the main game, but also other characters such as the conductor, the conductor, the bartender and the passengers. Players can become any of the characters in the game to guide the ghost players to their own memories and to gain the power of love to help them make up for the regrets they only have. The train conductor is a side character who triggers part of the storyline and guides the ghost player throughout the game, and is a part of the flow of the game. The conductor is also a character in the subplot, this role is mainly based on the storyline of affection and will trigger the appearance of the conductor when the player sits down at the table to order food, while the ghost player orders food, the conductor will bring the game with the storyline content related to affection and related breakout segments to the player experience.

The bartender character is the only unique character on the train. Here he will be in the same place from the very beginning of the game, waiting to be triggered by the ghost player, but of course this bartender can also be played by other gamers (as shown in Figure 3). This group of gamers will be

reminded of each other's progress and patterns, and will lead the player through the game. The bartender is the only character who can be either an NPC or a player, but the moment the player becomes a bartender he will assist the ghost player on his journey, although it is possible that he will initially share the same experience as the ghost player, and it is because of this experience that he chooses to become a guide [6-7]. This role will bring the game to life, taking away some of the staleness of the AI and some of the precision of the human intelligence. But even so, the designers still created this hidden subplot to make the experience livelier for the player.



**Figure 3.** Bartender (Original).

#### *2.4. Setting the scene*

For this train to No Man's Land, the designers wanted to create a story of the gamer's life, which could be about family, love, friendship or even the help of strangers. The tone of the entire scenography is on the antique side of vintage red as well as some of the painted elements in it, with vintage elements such as wooden tables, clocks and teacups. To emphasize the contrasting feeling of darkness and solitude, the interior of the train (shown in figure 4-5) creates a great visual impact with the beautiful ideal world outside (shown in figure 6). Of course, we have also designed a hidden egg where gamers can communicate with each other as players through VR, drawings as well as words in this area, as sometimes the power of words comes a little more fiercely and hits home more than others (as shown in Figure 7).



**Figure 4.** Inside the train (Original).



**Figure 5.** Bar inside the carriage (Original).



**Figure 6.** The ideal world outside the train (Original).



**Figure 7.** A platform for players to communicate.

### 2.5. Control system

For this virtual game, more than anything else, it will rely on tools such as VR glasses. These props will allow the player to be fully immersed in the game world. Players can further control the game through the gamepad and the VR glasses (shown in Figure 8). These include grabbing objects, writing and drawing, walking and touching, etc. [7-10]. The player can use the joystick to complete each task set out in the game, and of course the gamepad to control the length of time spent in the game.





**Figure 8.** VR grip.

### 3. Game experimentation

To ensure how well the overall VR device supports this game. A group of test players were asked to try out the game to ensure the VR device had tracking capabilities and accurate positioning and capture. This included object grabbing, character movement, writing and drawing tracking, and the moment the player touched an object, the device would track it directly in real time to give the player a better experience. If the player wants to grab an object, they can use the VR joystick to control it and simulate the effect of the player grabbing it (as shown in Figure 9).



**Figure 9.** The effect of a player grabbing an item.

#### 3.1. Experimental section

Spirit Train is a beautifully modelled virtual game where the first view of the game characters can be experienced with VR related glasses. This game design greatly enhances the gaming experience as well as adding a greater degree of immersion for the player. And of course, the probability is that more people will realize that a missing person is not just a panicked person, but also a warm and helpful bystander. It's a game that is very experiential, perceptive and more than a little hands-on. The table 1 is a summary of some of the player ratings.

**Table 1.** Statistical rater evaluation scores.

Scores/assessments	Immersive experience	Interactive experiences	Innovative platform experience	Smoothness of internet speed
10-8	✓		✓	
7-4		✓		
3-1				✓

Scenario Analysis: The game is a retro-based game. Also, within this game, in addition to those characters and related storylines described above, the designers have additionally given this game a

special platform access, where any gamer can communicate in depth through a VR real-time chat platform, in which players can doodle and also leave messages encouraging those who have had such experiences Words of encouragement for those who have experienced this. The game has been designed to help people in need on a deeper level.

Gameplay effects: In order to get a more optimised version and game design, the experiment will be split into two parts: an immersive experience and a psychological shadow sensitisation experience. In this case, the designers have taken data from Ghost Train, which will be presented in the table 2. Judging from the results, the effect is still positive.

Game features: The game has always been about helping others and gaining storylines through the relevant episodes. In order to test the game's ability to appease the masses. It is necessary to verify whether the game has a psychological impact through the VR glasses.

**Table 2.** The degree of relief of psychological shadows for the assessor.

Scores/assessments	Excellent	Good	Qualified	Failure
Ghost Players		√		
Bartender Player			√	

#### 4. Conclusion

In this article, the game "Ghost Train" has been developed for the event of missing persons. In it the player can not only be a ghost but also unlock the relevant characteristic platforms. The VR virtual game is more suitable for this type of game than the regular game and allows the player to get more involved in this game. The ghosts alone are just one main line, and the player can experience different life experiences through different characters. Within this game, the gamers can be the underprivileged who are helped or the masses who help them. So, hopefully, because of this game, people will be able to calmly go over to strangers in trouble on the road again and not just walk away without a trace. But despite this and the above report, there are still too few scenes in the game. But more than that, we wish the scenes could change a little faster.

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