

*Concept Character Design of A 360° 2D Animation ‘Maiden Voyage’
for Fine Dining Virtual Reality*

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Abstract

The animation and fine dining world has been changing due to the development of animation and culinary cuisine. The competition between these two worlds is fierce, and companies must strive to survive. Due to increased demand, interest, and competition, the digital art and industrial areas are exploring various technologies and techniques to enhance the immersive experience. This research offers a new combination of fine dining with a 360° 2D animation and virtual reality technique that is expected to give a unique fine dining experience and to border the cutting-edge digital art and industrial areas. Guests can watch the animation utilizing a head-mounted device while waiting for their dishes to be served. This research objective aims to create a concept character design for a 2D animated movie titled ‘Maiden Voyage’ based on an exciting and memorable three-dimensional character, fitting the story tailored to the setting on the cruise ship in 1912. The research method will include a literature study on basic character design, observation of people in 1942, and drawing experiments. The result of this current research will be the characters’ design sheets that will be useful for future research on character movement for a 360° 2D animation, ‘Maiden Voyage.’ This research will impact both the animation and the fine dining fields as it has considerable potential implications for the further study of the 360° animation and fine dining experience.

Keywords: Concept Character Design, 360° Video, 2D Animation, Fine Dining, Virtual Reality

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Introduction

The competition in culinary cuisine is fierce, and companies must strive to survive. Some utilize technologies to compete. This is an opportunity for animation to present animation in other forms and not just on a flat screen. This is also a chance for the animation field to work with culinary cuisine to create an innovation in the fine dining experience. Advanced technologies keep growing in various ways. Adao, T., Pádua L., Foncesa, M., Agrellos L., Sausa., J. J. & Luis (2018) stated that there is a lot of demand for 360° video in development and research communities, but the tools are not developed yet. According to Choi K. H., Yoon Y. J., Song Y. S. & Choi S. M. (2018), images and videos that are shown in VR lack interactivity. Regarding fine dining, Namkung & Jang (2017) mentioned that the taste and the dish's presentation are crucial to customer satisfaction.

Many restaurants have been using projection mapping for the table, which brought the researchers to create their project called 'Si Dulang' in 2020, working together with Universitas Multimedia Nusantara, MDN, and the hospitality department, which is stated in a journal by Lukmanto, C. M. (2021). Widiastomo, Y. M. (2022) mentioned that choosing the projection mapping technique creates new opportunities for artists. This argument is supported by Shamsuddin, Islam & Islam (2013), who states that the visual design conceptual imagination is displayed through film, video, game, animation, illustration, or animation. Adestya Ayu Armeilia from the hospitality department was in charge of creating the menu. In contrast, Yohanes Merci Widiastomo, Christine Mersiana Lukmanto, and some film department students were on the project's creative side. This project provides an entire animation of about 5 minutes per act with a story about the journey of a 15-year-old boy to learn more about cooking. The researchers' prototype focused on Bali cuisine, serving four different dishes. However, one of the shortcomings of this technique is that one table needs to wait for other tables to be ready because the animation will be played together for every table simultaneously.

After completing the prototype, the team strived to explore how to engage the audiences with a better fine dining experience. With some delicate consideration and added Siti Adlina Rahmiaty, the researchers plan to create 360° 2D animation to give a unique fine dining experience by utilizing a head-mounted device (oculus) to watch the animation while waiting for their dishes to be served. Most works in 360° video are produced by live shooting with a 360° camera or 3D animation. 2D animation is rarely made in this form, as it is hard to find 2D animation on online references. The ones that appeared on YouTube were independent, primarily projects. One video the researcher took as a reference from SpongeBob SquarePants Official YouTube account is "Take a 360° VR Tour of Krusty Krab!" (2021).

'Maiden Voyage' tells a story about a conman who gets caught up in the crime of murder at a respectable family dinner on a cruise ship on his first voyage in 1912. This project is very challenging, considering the innovation of 360° 2D animation and virtual reality techniques. Joining hands with the hospital department, the researchers expect to create a prototype by the end of the year.



Figure 1: Maiden Voyage, 360° 2D animation.

Research Purpose

Based on the background of 360° projects and a previous project called ‘Si Dulang,’ the research question is how the concept character design of a 360° 2D animation, ‘Maiden Voyage,’ was created for fine dining virtual reality and how effective fine dining with digital animation and innovative concept character design is. The research focuses on the characters in ‘Maiden Voyage’ and how memorable the characters are. ‘Maiden Voyage’ animation aims to give a unique fine dining experience and to boarder the cutting-edge digital art and industrial area, and this paper will discuss how to create a concept character design for 2D animated titled ‘Maiden Voyage,’ setting at the cruise ship in 1912. The researcher aims to get a project result with a prototype and character design artbook by the end of the year.

Research Method

The research method that the researcher involved the literature study of 360° video character design observation, place visits to some immersive exhibitions and fine dining, a recce, and a survey will also be included in the research method to create the concept of character design for ‘Maiden Voyage,’ a 2D animation in 360° video. The creative production side of this research started with making the visual concept, style guide, and color palette, which were given to the illustrator to create the final character design sheet completed with the gestures and facial expressions. In this paper, the author will focus on creating the characters and how this new technique combines with fine dining.

Data Analysis

‘Maiden Voyage’ is about a young man called Herbert trapped in the mystery where Richard, the father of the love of his life, died at a respectable family dinner on a cruise ship in 1912. The story is from Herbert’s point of view, where he is introduced to Dorothy’s family. The dinner starts when Richard comes to the table, and everyone else welcomes him warmly. After spending some time at dinner, he suddenly collapsed, and he lost his life right at that moment. Now, it leaves the audience to question who is the one that harmed him, what is the reason behind it, and how that person acted out the murder of Richard. However, the eight people at the table have the motive, alibi, and theory to harm Richard Wright, including Hebert.

The first step of this research is to prepare. Start with preparation by looking at the last project to see what can be improved for the next project. Some of the shortcomings of ‘Si Dulang’ are that the customers have to wait for other customers, and it is not very flexible in changing the menu. The hospitality department has set the menu, and the creative team has made the animated version to give the impression that the food they saw in the animated film came to life. The fare shown in Figure 2 is called Be Pasih Basa Genap, an authentic Indonesian dish from Bali. However, this might not be feasible in the business world, as restaurants typically already have regulations to develop their menu.



Figure 2: The audience's point of view of ‘Si Dulang,’ the projection mapping of the dish and the real version of the food.

The next step of our research was to brainstorm the ideas between the characters in the animation design and the contents of dining products. Focusing on the innovation aspect, the researchers tried to challenge the experiments of fine dining by combining taste and vision with a 360 2D animated video that tells a unique historical context on a cruise ship in 1912. To learn more about the setting and the people, the character design concept had to involve a literature study to develop the characteristics of the people and observation of the outfit from 1912. Comments on real people in 1921 and the illustration in Figure 3 sources gathered from online sources; Thomas, H. (2021)., Utomo S., S. B. (2023), Tim Redaksi RM 1. (2023) and Sessions, D. (2023). The outfits for women are primarily dresses with an empire waistline, and for males, they mostly wear a suit with a matching waistcoat.



Figure 3: Moodboard of concept character design of ‘Maiden Voyage.’

The research team researched places to visit with immersive experiences in Jakarta and Tangerang. The first place that they saw was Immersive Van Gogh in Jakarta. This place was a hit for Indonesians as many people have wanted to visit it and have been looking it up on social media. The author went there two times to collect the data. Surprisingly, the videos projected on each canvas differed between those two times visited. The researchers learned that the image was not high quality, but the sound and the music built up the atmosphere. The

next place was Hublife: Imersifku, which targeted more children by involving storytelling, acting, pop-up books, music, and animation to engage their attention. To learn more about the head-mounted device, the researcher went to Pause & Play, where the guests could play different games in each room. Museum Patah Hati at Chillax Sudirman was an exhibition with fun activities where the staff interacted with the guests. This was another way to have an immersive experience at a show. Imagispace and Under the Sea Experience were very similar to Immersive Van Gogh. However, the guests could interact with the animation with a touch at Imagispace, and there were properties to create the underwater atmosphere at Under the Sea Experience.

Regarding the dining experience, the researcher went to Namaaz Dining, where they used light and activities during the fine dining experience. The guests seemed to have fun and were immersed in the restaurant's performance. The dining experience is very different at Fukuramen, where the tables are divided into a divider for each guest, which is very convenient for single guests or introverts who want less interaction with the staff or any other customers.

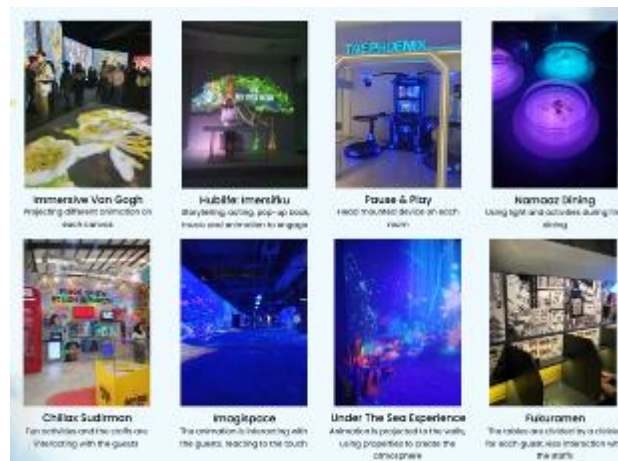


Figure 4: Place visited by the researcher for ‘Maiden Voyage.’

When developing the technique of 360°, many trials were done with a process called recce, where the researchers gathered the actors and actresses in a delicate dinner setting. Here is when they will act according to the scripts and the personality of the concept character design. When recce has been done, the video will be injected into the head-mounted device to check what the customers will see. At this time, the researchers must ensure the ratio and the perspective are right so the video can guide the animating process. This process has been done a couple of times by repeating the same process over and over to get the right proportion.



Figure 5: Recce session of ‘Maiden Voyage.’

During the last recce, the actors and actresses were asked to dress like the character design to get themselves into the character and explore nature. Then, the researchers did the pre-test to get a picture of customer satisfaction using 360° videos. Due to time limitations, the animation for the prototype continued to progress for a couple of scenes of the actual animation. The protest of the prototype was to see the customers' thoughts and the different effects by adding animation appreciation to the video.

Character Design Concept

There are nine characters in the story. All of these characters are important to be introduced as the mystery of the story is between these characters. To guess and look for the one who did the crime of murder, it is better to understand the characteristics of the characters, including the victim himself. Here is the character's profile:

1. **Richard Wright**
Richard is a 60-year-old man known as the devil of the ship with his blonde, highlighted white-haired male. His signature features are his yellow-brown eyes and thick beard. He took his job seriously as a captain and owned Richard Maritime & Shipment. He doesn't take care of his family and has an affair with Betty Lopez, his housemaid.
2. **Virginia Wright**
Richard's good wife and Dorothy's good mother is a 62-year-old woman with a chubby, loving face, blonde hair, and brown eyes. She has a mole above the right eyebrow. She was married to Richard by an arrangement from both families. Her love for him grew after the marriage, but she later found out about the affair.
3. **Dorothy Wright**
A 24-year-old female who is slim and pretty who tries always to look fashionista and elegant. Her birthmark is a mole near her left eye. She falls in love with Herbert but later finds out he is a thief but is determined to stay with him. Dorothy is gullible, sincere, full of love, ambitious, and young-spirited.
4. **Herbert Monroe**
Herbert had a tough childhood where his parents abandoned him; he lived with an uncle and started to earn money by stealing and working in labor. He has quite a list of criminal records, including stealing, drugs, and harassment. He is 28 years old, tall and skinny, with brown hair, blue-gray eyes, and a left eyebrow cut.
5. **Robert Wright**
The youngest brother of Richard, a 48-year-old man, is a spoilt one with a tattoo on his right neck. As the youngest of the Wright family, he often gets what he wants without effort. At home, he acts like an innocent child, but on the other hand, he smokes drugs and is a womanizer.
6. **Lilian Davis**
Tall, curvy, dark, long brown hair, dark brown eyes, and freckles between the eyes and nose are the signatures of this 24-year-old female. She is currently studying fashion to have her fashion line. Lilian had been a friend of Dorothy since childhood, often visiting their house. On one occasion, she witnessed Richard having an affair with another woman. The first person to know about Richard's affair.
7. **Lois Davis**
The tiny, cute, and youngest at the dinner table is Lilian Davis's younger sister. Lois is 15 years old and always wears a sky-blue ribbon. Her signature is the mole on the right collarbone. The sisters are very close to each other. She knows almost every

secret that her sister has. Her sister likes to doll her up, which she very much enjoys. She is interested in mysteries, horror, and thriller films.

8. Charles McPherson

Richard's business partner and his right hand, a co-founder of Richard Maritime & Shipment, who is 62 years old, needs a walking stick to help him walk. He has a big birthmark on his left hand. They met while studying at a university and have been working together for years since then. He feels he has never gotten enough credit for what he has done for the company and struggles financially.

9. Barbara McPherson

Barbara is Charles's nurse, a 58-year-old female with a little scar on the right cheek near the ear. A big money spender. She is a shopaholic and likes to treat herself to expensive outfits, jewelry, bags, home appliances, and home decor. She is self-centered and very demanding towards her family, especially her husband. She gets frustrated when her husband can't provide much money.

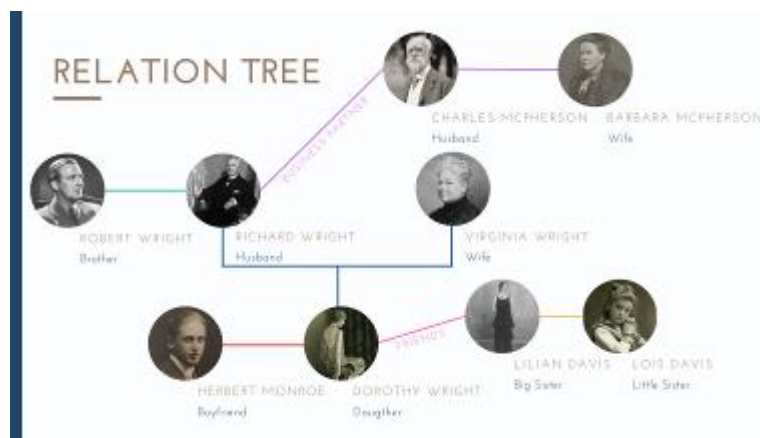


Figure 6: Relation Tree of the characters in Maiden Voyage.

The eight people in 'Maiden Voyage' who sit at the table have the motive, alibi, and theory to harm Richard Wright, including Herbert himself. Figure 6 illustrates the relationship between the characters, while Figure 7 is each character's motive, alibi, and theory chart.



Figure 7: The motive, alibi, and theory breakdown of the characters in Maiden Voyage.

To get a better understanding of the story and also the technical issues. The researchers must understand the table setting of the character projected in Figure 8. This is important to the story itself, as the setting could give a clue or giveaway for the audience to know who is the one who is trying to harm Richard. Therefore, the author created a guide for the story to align with the technical side of research and further research steps. The audience will be Herbert, so that they will sit next to Dorothy and Lilian.



Figure 8: Table seating of the characters in Maiden Voyage.

The illustrator team managed to illustrate the character (Figure 9), adding some personal color to each color according to their personality. For example, Richard is drawn with a square as his basic shape to show how stiff, sturdy, and stubborn he is, and the brown color presents his resilience and the feeling of isolation.



Figure 9: Character Design Illustration for Maiden Voyage.

Once the characters have been illustrated, the characters are placed in a 360° environment that has been done with a 3D medium. This 3D model is a guide and will not be presented in the project's final development. The challenging part of this stage is the distortion of the drawing of the characters. It has to match the 3D model.



Figure 10: Characters positioning for Maiden Voyage.

The project's final development will be looking at all 2D for both characters and the environment, as shown in Figure 11. Most color is in a sepia color scheme to create a vintage look as it matches 1912.



Figure 11: Final look at the development of Maiden Voyage.

Research Findings

This survey of pre-test and post-test was done after the prototype was taken. Both the pre-test and post-test complicate every graph in this section. It shows how successful the character design is. Based on the questions on how memorable the character design for 'Maiden Voyage,' the result shows that the characters are memorable, with 43.5% of respondents giving a rating of 5 out of 5, 34.8% of respondents giving a rating of 4 out of 5 and 21.7% giving a rating 3 out of 5.

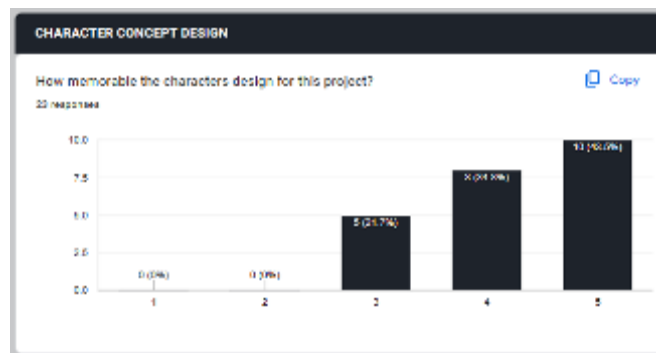


Figure 12: Graphic on how memorable the character design is.

Based on the question about the most and the least appealing, the responders were given the illustration and watched the animation with a head-mounted device. The result illustrates that the most appealing character is Dorothy Wright, and the least appealing character is Herbert Monroe and Charles McPherson.

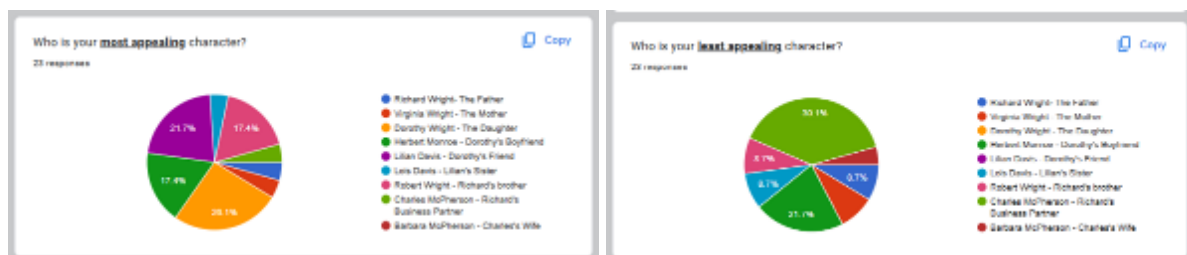


Figure 13: Diagrams of the most appealing and the least appealing character.

The chart below illustrates that most guests like the experience of using 360° techniques and the concept of 360° animations for fine dining. 91.3% of responders claimed that they feel comfortable watching 360° videos. They feel this project has a nice and unique approach between the techniques, story, and characters. However, some argue that the technique might not be as attractive as it is not interactive to the user, gives motion sickness to some viewers, and can give an empty feeling.



Figure 14: Diagrams of the 360° techniques.

Conclusion

'Maiden Voyage,' 360° 2D animation, and virtual reality techniques give a unique fine dining experience, which is likable by the guests but also challenging. This research combines fine dining with digital animation and innovative concept character design using a head-mounted device. It is a new and exciting experience. Most responders to the survey liked the idea of combining digital animation and innovative concept character design. These three elements work well for this project; however, some users argue that the 360° video might not be as attractive to some users.

The author must admit that the head-mounted device may not be user-friendly for guests wearing glasses as it might cause dizziness. The integration of fine dining, virtual reality, and 2D animation could be a new form of digital industries and can be further developed in the future. This project will work better with better technology on the 360° device. The character concept design for the 2D animated movie 'Maiden Voyage' is memorable and suits the setting on a cruise ship in 1912. The historical context in the illustration is shown in the film. The survey responders appreciated the project's visual aspects, enhancing the fine dining experience.

Based on this project, the researchers admit that there are some shortcomings. The menu has not been set. The researchers had been expecting to have some clue about the murder, which relates to the story of 'Maiden Voyage'; however, due to time limitations, the team had not set the menu. This year, research focuses on the prototype for the technical issues and has not been doing much research on the dining process, especially the menu. Therefore, for further research, the team will focus on the dining experiences to see how the customers feel and get feedback based on the combination of digital animation and innovative concept character design to see their perceptions of taste and vision of 'Maiden Voyage.' The researchers believe this project can impact animation and the fine dining fields as it has big potential implications for further study on the 360° animation and fine dining experience. Therefore, it will be significant for further research in digital art and industrial applications.

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