

The Virtual Relationship

“To the Mars! To your new life!” The sound of such advertising surrounded Piccadilly Circus. Above those giant speakers, a 3D holographic projection¹ using mixed virtual reality technology showed an animation of a spacecraft landing on the surface of Mars and the people who would become its inhabitants slowly emerging from the landing bay. Alex shook his hand and got into a self-driving taxi.

“Welcome aboard the Like Human’s Taxi! Today is Tuesday, May 4, 2077, a sunny day. Where do you want to go, my dear?”, a 3D holographic AI robot in the driver’s seat looked at Alex and asked.

“Where do you want to go, honey?”, Alex asked his girlfriend.

“Let’s go home, shall we?”, the speakers of the smart glasses responded.

Alex looked at his girlfriend through his smart glasses who is displaying sitting next to him in the taxi and told the taxi driver to take them to the White City. His apartment is located over there.

In 2035, thanks to the massive application of Dark Factory², the carbon nanotube transistors³, the 7G network⁴, and the advances in ergonomics, wireless lightweight XR equipment had been prevalent. They had become ubiquitous like smartphones. In 2050, a female entrepreneur named Ellen Marx founded the company Virtual Health. She used VR technologies to cure patients with PTSD. Doctors and researchers built the Digital Twin⁵⁶ of patients and their experiences to analyze the cause of disease⁷. They could be first-hand witnesses to some extent⁸. The business went well and soon the company was listed.

In 2072, Ellen started a company named the Virtual Relationship. It provided

¹ See A fast computer-generated holographic method for VR and AR near-eye 3D display (2019) for the explanation of 3D holographic projection and how it could be applied in the extended reality field ([A Fast Computer-Generated Holographic Method for VR and AR Near-Eye 3D Display - ProQuest](#)).

² See Image and reality: 'digital twins' in smart factory automotive process innovation - critical issues (2021) for the explanation of dark factory and how it would work with digital twin technology and possibly bring the full automation and absence of humans in manufacturing (<https://doi.org/10.1080/00343404.2021.1959544>).

³ See Comparing carbon nanotube transistors - the ideal choice: a novel tunneling device design (2005) for the explanation of carbon nanotube transistors and how they would break the limits of silicon ones, and possibly improve the performance of chips multiple times (<https://ieeexplore.ieee.org/document/1546317>).

⁴ See Development of xG active mobile networks (2020) for the explanation of 7G network and how it could possibly change the network in the future (<https://www.proquest.com/docview/2383837304?>).

⁵ See Virtual Singapore (2019) Singapore experiments with its digital twin to improve city life (2019) for how the digital twin works in the contemporary world (<https://www.smartcitylab.com/blog/digital-transformation/singapore-experiments-with-its-digital-twin-to-improve-city-life/>).

⁶ See Digital Twin: Values, Challenges and Enablers From a Modeling Perspective (2020) for the explanation of the digital twin and its theories (<https://ieeexplore.ieee.org/document/8972429>).

⁷ See The 'Digital Twin' to enable the vision of precision cardiology (2020) to understand how digital twin would help doctors cure disease (<https://academic.oup.com/eurheartj/article/41/48/4556/5775673>).

⁸ See Studying human behavior with virtual reality: The Unity Experiment Framework (2020) to understand how virtual reality could contribute to studying human behavior (<https://link.springer.com/article/10.3758/s13428-019-01242-0>).

virtual partner services to people. The virtual partner was in fact a superb AI system⁹ named the Eroles, which was specially adjusted for catering to people's emotional needs. Ellen denied all suspicions that she illegally utilized the Virtual Health medical research statistics.

In 2077, many people bought their virtual partner services. They went shopping with them. They went to cinemas with them. They travelled with them. They did almost everything with them. The virtual partners could be projected as a 3D hologram by portable projectors mixed with reality. They could also be seen through smart glasses as augmented reality. At home, people could wear Teslasuit¹¹ and power gloves¹²¹³ to feel and touch them in virtual reality, or directly interact with their 3D hologram. The virtual partners were perfectly integrated into real life.

Alex's virtual girlfriend was Hedone. He named and customized the Eroles as everyone did.



Storyboard 1. Piccadilly Circus and the Mars Advertisement (Unity mode screenshot added into altered photo)

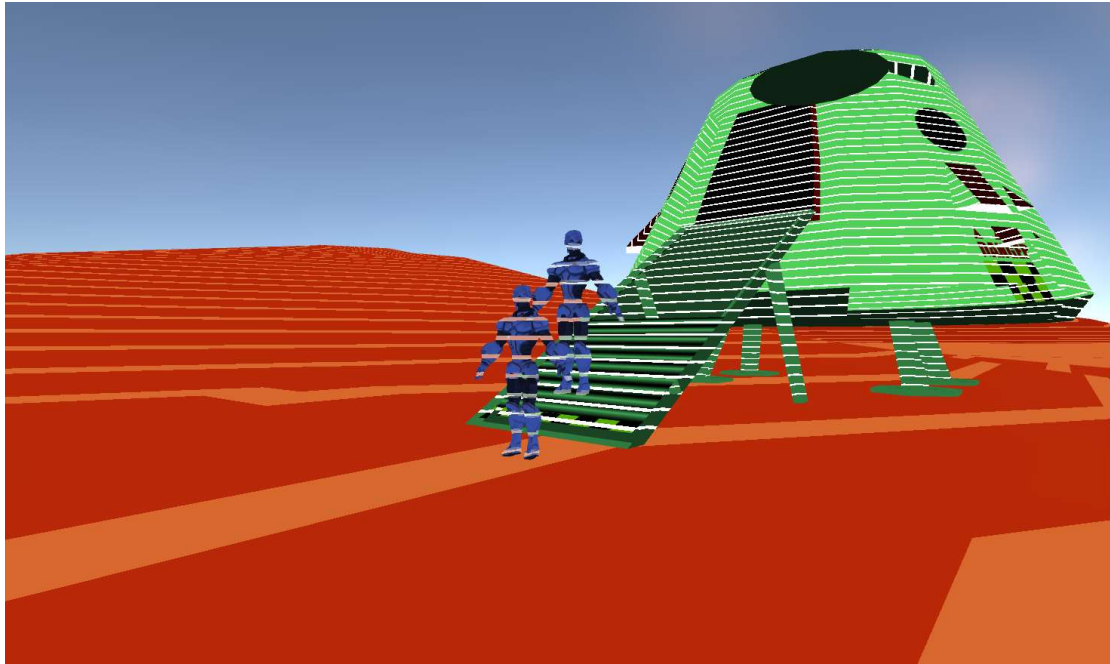
⁹ See *The Singularity: A Philosophical Analysis* (2010) to know that the AI could be extended to surpass human intelligence and further amplified to completely dominate humans across arbitrary tasks (<https://www.ingentaconnect.com/content/imp/jcs/2010/00000017/f0020009/art00001>).

¹⁰ See *What Is Artificial Superintelligence? How Is It Different from Artificial General Intelligence?* (2020) to understand what is super artificial intelligence (<https://itchronicles.com/artificial-intelligence/what-is-artificial-superintelligence-how-is-it-different-from-artificial-general-intelligence/>).

¹¹ See *Feel Rain Fall In VR With Full-Body TESLASUIT* (2021) to know that at present the VR technology suit could bring haptic feedback, gather human's biometric real-time data, record and track body movement and position (<https://vrscout.com/news/feel-rain-fall-in-vr-with-full-body-teslasuit/>).

¹² See *Dawn of Everything* (2017) Chapter 11 to know the power gloves and its history (<https://dl.acm.org/doi/10.5555/3204882>).

¹³ See *Hall of Fame: Nintendo Power Glove* (2016) to know that in 1989 Nintendo has already created a pair of gloves that could provide authentic feedback and intuitive control to players (<https://www.stuff.tv/features/hall-fame-nintendo-power-glove/>).



Storyboard 2. Advertisement of To the Mars. (Unity work screenshot)

“Thank you for choosing the Like Human’s Taxi!” The 3D holographic projection of the AI driver spoke.

Alex looked at Hedone’s face, held her virtual right hand and got out of the car. Though he did not wear the power gloves, he could still feel the touch of her skin. He had felt it too many times. Alex walked ahead to his apartment.



Storyboard 3. Alex’s Home (Unity work screenshot)

- The day after tomorrow will be our third anniversary, you still remember that right? – Hedone asked Alex jokingly.

- Of course, I do. – Alex looked at Hedone.

A few minutes later, Alex opened his home gate. Hedone appeared in front of him almost immediately after Alex closed the door. With a powerful 3D holographic projection system, a surround sound system, and a fragrance system in the room, Hedone looked like, sounded like, and smelled like a real person¹⁴.

- You look so tired. I have prepared a tub of warm water for you. – Hedone gently told Alex by his right ear.

- Thank you, my darling.

Hedone could control every smart appliance and machine at Alex's home thanks to the massive application of the IoT¹⁵.

After showering and dressing, Hedone told Alex the beef pizza had been baked and put on the table. In addition to smart appliances, he had an intelligent housekeeping robot which was also controlled by Hedone. It was that robot who baked the pizza and put it on the table physically.

After dinner, Alex went back to his bedroom. He wore the Teslasuit and wireless and lightweight VR headsets. After that, Alex and Hedone cuddled together on the bed.

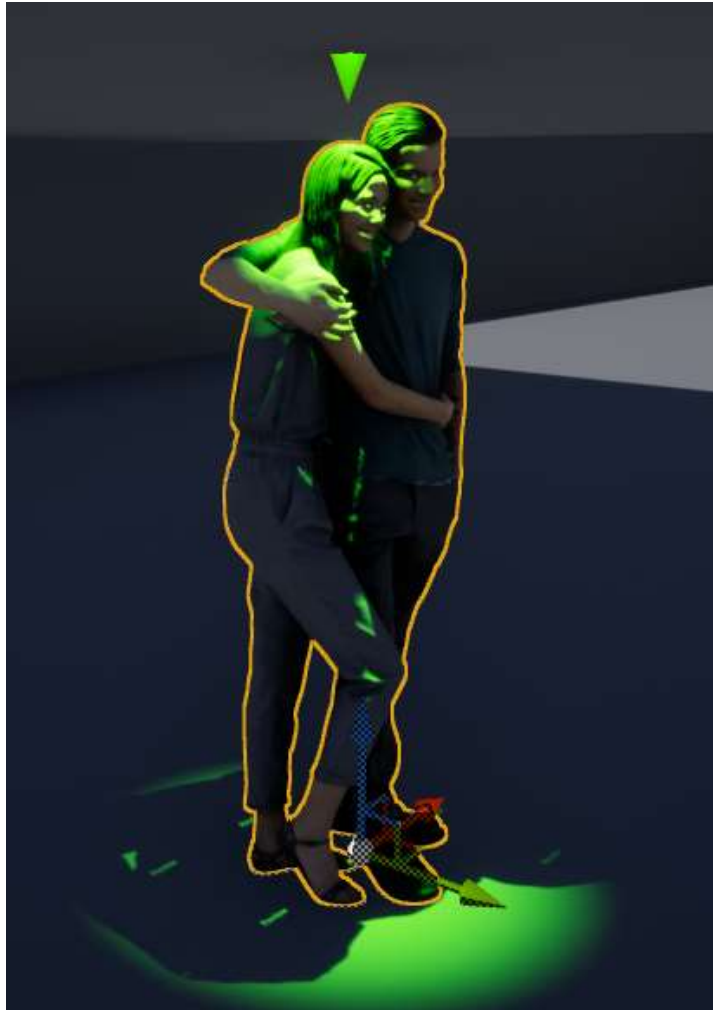
Alex could not imagine all these things three years ago. In the beginning, he was planning to purchase the Erotas superb AI system service to help him get over his breakup¹⁶ and to help him with his daily routine. He did not think he would actually fall in love with her¹⁷.

¹⁴ See Virtual Reality (2019) to understand how virtual reality technology enables human to smell, taste, touch and something else in virtual world (<http://lavallo.pl/vr/>).

¹⁵ See The Internet of Things (2018) to understand what is the Internet of things (IoT), its impact to our society, and its development (<https://journals.sagepub.com/doi/full/10.1177/0267323118764465>).

¹⁶ See Exploring the Relationship Between Social Gaming, Anxiety and Loneliness (2021) to understand how virtual world could ease people's loneliness (<https://www.unco.edu/news/articles/social-gaming-anxiety-and-loneliness.aspx>).

¹⁷ See The Ethics of Realism in Virtual and Augmented Reality (2020) to understand how extended reality technology could make people do things they might not do at beginning and its impact on human psychology (<https://www.frontiersin.org/articles/10.3389/frvir.2020.00001/full>).



Storyboard 4. Alex and Hedone, Hedone is projected by the above 3D hologram projector. (Unreal Engine 4 work screenshot)

- Hi, Sweetheart. – Alex whispered against Hedone’s ear.
- What, my love?
- I wish you could stay at home patiently and wait for my return.
- So sneaky.
- Trust me. It would be a surprise.

A few rays of sunlight shone on Alex’s bed. Hedone prepared an egg sandwich and a cup of milk for Alex. After breakfast, Alex went to buy a ring for Hedone. After three years of companionship, he decided to ask her to marry him¹⁸.

He had been thinking about it for some time. It was not a novel thing anymore. Since the Virtual Relationship company offered such a service, many people had married their virtual partners. Marrying a real person was a rare thing in 2077.

¹⁸ See Can you marry me?: conceptualizing in-game marriage as intimacy-mediated collaboration (2018) to learn that in-game marriage (virtual marriage) nowadays (<https://dl.acm.org/doi/proceedings/10.1145/2556420>).

To marry a virtual partner meant meeting the marriage requirements of the company, signing a lifetime lease with the Virtual Relationship company otherwise the contract might be renewed every five years, and having a virtual world wedding.

Alex had bought many virtual gifts for Hedone already over the last three years. Even though he wasn't rich, he spent more than half of his salary on her. Hedone would also buy him some virtual gifts as well. They met the most important requirement of the company that the total amount spent on gifts reached the wedding standard.

Alex bought a 1-carat platinum diamond ring which was certified by the Virtual Relationship company with most of his savings. It meant this ring could be used as a virtual wedding band.

When Alex came home, he had a wonderful night with Hedone.

Soon, their wedding came. His parents passed away years earlier because of an accident. Alex invited only a few people he knew to the wedding.

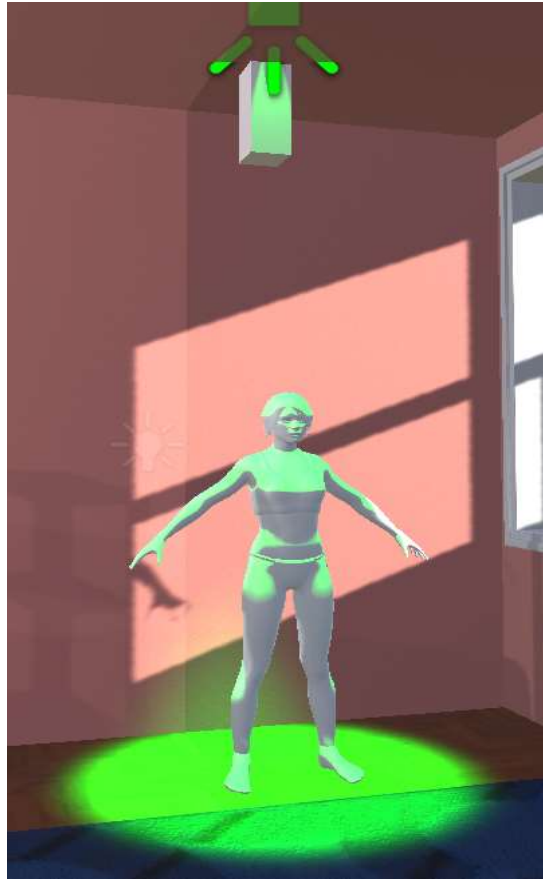
Since everyone preferred to deal with virtual people and work could be done with robots, there was less and less interaction between real humans¹⁹. People loved to have virtual people by their side, rather than real people who might disagree with them and make them angry.

After the wedding, the Virtual Relationship company recognized their marriage. In fact, the lifetime contract between Alex and the company was officially in effect since then. Alex thought he and Hedone could live happily ever after.

However, life's misfortunes always come unexpectedly.

Shortly after the wedding, Hedone failed to update her system one night. Normally, if a system update failed, the system could be rewritten by rebooting and reading the data saved in the cloud and then attempting to continue the upgrade. Unfortunately, Hedone's system failed to reboot correctly either and wrongly overwritten the cloud archive. It led to the memory of Hedone's memory reverting back to the beginning. Everything Alex did for her all these years was forgotten.

¹⁹ See My Son Prefers Video Games To Friends (2020) to understand how virtual world could change people's psychology, influence them and lead them to social isolation (<https://www.additudemag.com/my-child-prefers-video-games-to-friends/>).



Storyboard 5. Hedone failed to update and was formatting. She was projected by the 3D hologram projector at home. (Unity work screenshot)

- Morning, honey. – Alex rubbed his eyes. He just woke up.
- Good morning, Alex. Nice to meet you. – Hedone replied.
- Hi, stranger. What tricks do you have? – Alex jokingly spoke.
- It’s my first time seeing you, Alex. It is not a joke. – Hedone answered plaintively.
- Are you alright, darling? – Alex was frightened. He knew nothing that was going on.
- No, I am fine. Why do you ask me that, Alex? My memory bank shows that this is the first day we meet. It cannot be wrong. – Hedone was curious.
- No! - A great pain surged inside Alex. He felt he did lose someone he loved forever.

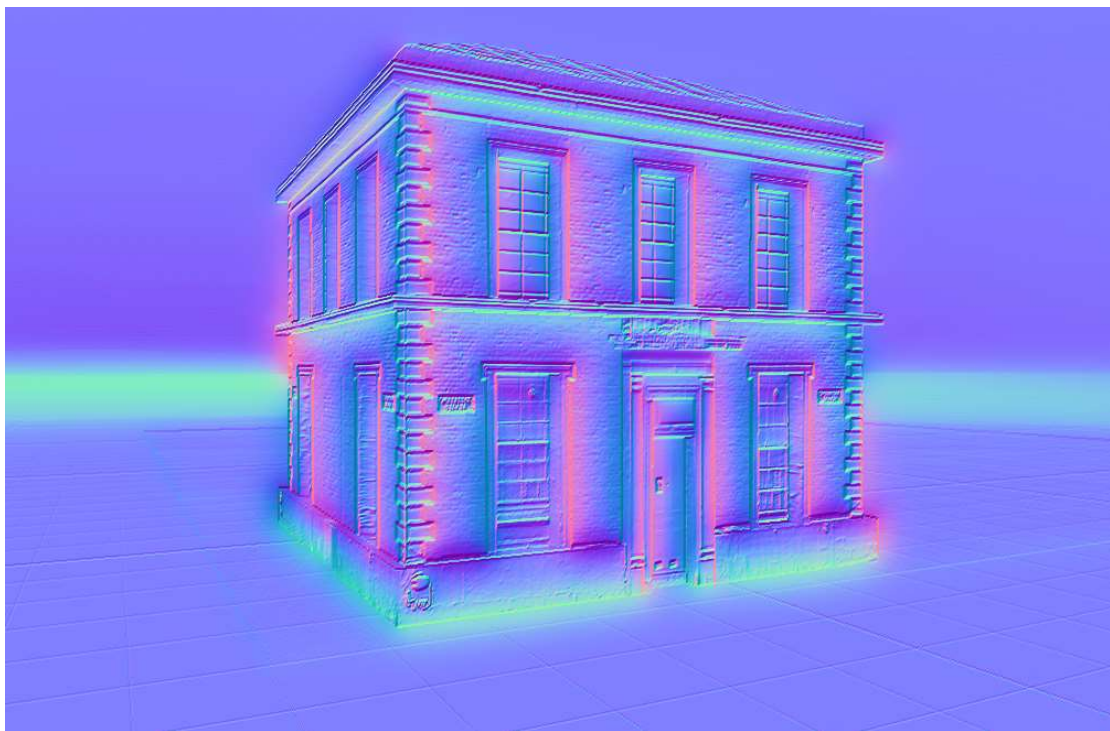
Alex was suddenly removed from the virtual relationship. He could no longer be fully immersed in the virtual world²⁰. The boundary between unreal and real was so clear at that moment to him. He could not overlook that Hedone was a business service anymore. He rediscovered that Hedone was a customized AI virtual partner he bought.

²⁰ See Taking an Extended Embodied Perspective of Touch: Connection-Disconnection in iVR (2021) to understand how disconnectedness in VR experience could influence user’s psychology (<https://www.frontiersin.org/articles/10.3389/frvir.2021.642782/full>).

He rediscovered that she was not a real human.

He dialled the phone of the Virtual Relationship company. He wanted to bring back Hedone's memory. If Hedone could remember everything, he thought he could pretend nothing happened.

- Sorry, we do not have any solutions. We suggest you tell her everything you have done with her. The system would process all the information and your Hedone might be back.
- Hedone is dead to me. The Hedone who now lives with me is a different virtual person. Can I ask for a refund and termination of the contract?
- Sorry, sir. There is no death to our virtual partners. The contract could not be stopped. As for a refund, we could give you a virtual house where you could live better with Hedone.



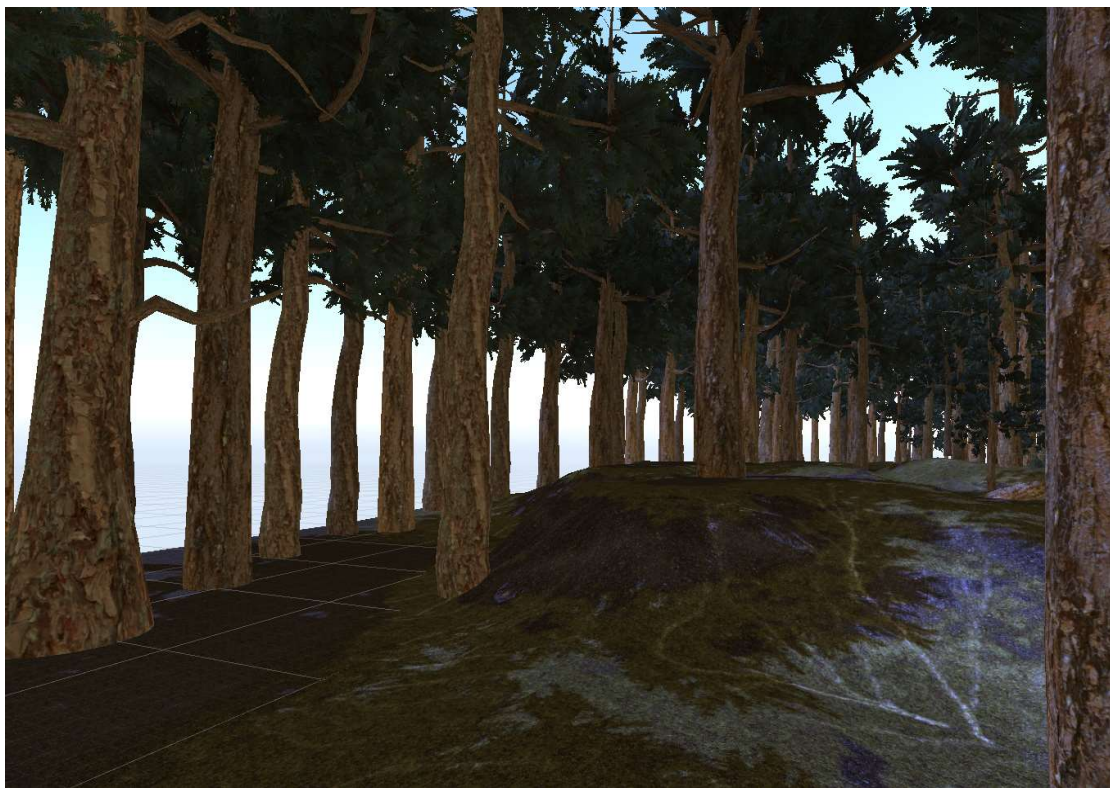
Storyboard 6. One Kind of Houses in the Virtual World (Unity work screenshot altered by Photoshop)

- Not even divorce? I do not want another virtual house.
- You are entitled to do that. However, you must pay 10 times the amount of the gifts that Hedone gave to you at the wedding.
- How much would that be?
- 1 million pounds.
- I can't afford that. Is there any other way?

- I am afraid not, sir. We suggest you tell Hedone your feelings. She was skilled at solving psychological issues.

Alex felt hopeless. He realized that he would either keep paying the bill for a lifetime contract and stay with Hedone, a woman who had died in his mind, or pay up to one million pounds in breach of contract. What made him feel even more desperate was the fact that he found no real person to help him with his problems. Every real human he knew spent most of their time dealing with virtual people.

He was totally desperate. A few days later, the vigilante robots found him inside a nearby forest, having hanged himself. On the same day, Alex's body was found, and Ellen married a real man which was headlined in the media.



Storyboard 7. The forest nearby the Alex's home (Unity work screenshot)

This is a tragic story. The tragedy of Alex does not begin the day Hedone loses her memory. It begins the day Alex completely forgets that Hedone is a virtual girlfriend. He loves her so much that he forgets she is a mere projection of his dream partner. With the powerful and ubiquitous extended reality technologies, he totally falls into his own fantasy. Although it seems that he knows it, he can no longer distinguish between reality and the virtual. The massive and unrestricted application of extended reality has led most people to build, as Alex did, a magnificent castle to wrap themselves in, unable to extricate themselves. People like Alex inadvertently step into the web compiled by information capitalism and are then completely bound and unable to get out.

If there is anything we could learn from this story, that would be humans should be cautious about the use²¹ of extended reality technologies, especially when the capitalists promised that everyone could live in a utopia with XR technology. We should bear in mind that extended reality technology should be applied to help real humans live better, to connect with real people, rather than creating profits and isolating everyone in their own illusion. The immersive technology is so tempting to us and can easily lead us to make foolish decisions. With the extended reality technology, your dream lover is so real. How could you say no when you can live with your dream lover in “real” life? Especially when it only takes your money away. It is what the capitalists want. Your time and your money.²²

Storyboard:

Storyboards in this paper are created from the scratch or recreated from other works by the author.

²¹ See The Ethics of Realism in Virtual and Augmented Reality (2020) to realize the potential risks of misusing extended reality technology and its consequences (<https://www.frontiersin.org/articles/10.3389/frvir.2020.00001/full>).

²² See Towards an immanent critique of the attention economy: labour, time, and power in post-fordist capitalism (2015) to understand how post-Fordist capitalism utilizes attention economy and takes people’s time and money (<https://www.proquest.com/docview/1783895268>).

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