IMMERSIVE VIRTUAL REALITY FOR DARK HERITAGE INTERPRETATION: THE CASE OF ŽANIS LIPKE MEMORIAL

Mg.hum. **Diāna Popova**
Latvian Academy of Culture

Abstract

The article will focus on the use of immersive virtual reality experiences in the interpretation of the dark heritage for young audiences. Here, through a case study of the Žanis Lipke Memorial, a new virtual reality experience was tested with young people, evaluating the benefits and shortcomings of this tool in conveying the story of the largest Jewish rescue mission at the time of the Holocaust in Latvia.

Given that every heritage institution aims to pass on the heritage to future generations, it is also essential for them to keep up with the practices of the new generation of the *digital natives* in their information-seeking, education and leisure-time habits, given that technology plays a pivotal role in their daily life. While virtual reality is often associated with the entertainment and gaming industries, it is also increasingly used in educational processes, in this case – as an interpretive tool in educating people about the Jewish rescue mission and Holocaust at the Memorial.

Young people in the focus groups acknowledged the emotional, embodied and implicit learning aspects of the virtual reality experience, but also pointed out some spatial and technological shortcomings of it. While some had relatively low initial expectations about the innovativeness of the Memorial, in the end, most recognised that the high-quality, realistic and historically accurate immersive virtual reality

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experience, combined with a physical tour at the Memorial, provided a deeper understanding of the historical event in question.

Keywords: *Dark heritage, immersive virtual reality, dark heritage interpretation, youth audiences, Žanis Lipke Memorial.*

Introduction

This article will elaborate on the possibilities of interpreting the dark heritage for young audiences through immersive virtual reality (VR) experience, based on a case study of Žanis Lipke Memorial (hereinafter – Memorial). It is a small non-governmental memorial museum in Riga that commemorates the largest Jewish rescue mission during the Nazi occupation of Latvia between 1941 and 1945 when the Lipke family and their helpers rescued more than 50 Jews. This article seeks to address the interplay of relatively distant topics, which come together in this context and create a new synergy. These topics are the interpretation of dark heritage to young audiences and the application of immersive virtual reality for creating engaging educational experiences at a museum.

This article will shed light on the opinions expressed by young people after testing a new virtual reality experience *Lipke's Bunker* (see Figure 1), which reveals the conditions of the underground hideout in Ķīpsala where Lipke's family hid Jewish people, saved from the Riga Ghetto and local concentration and forced labour camps. The bunker was built in 1942 and used until 1944, sheltering 8–12 Jews at a time. Since the bunker no longer physically exists, Memorial has created

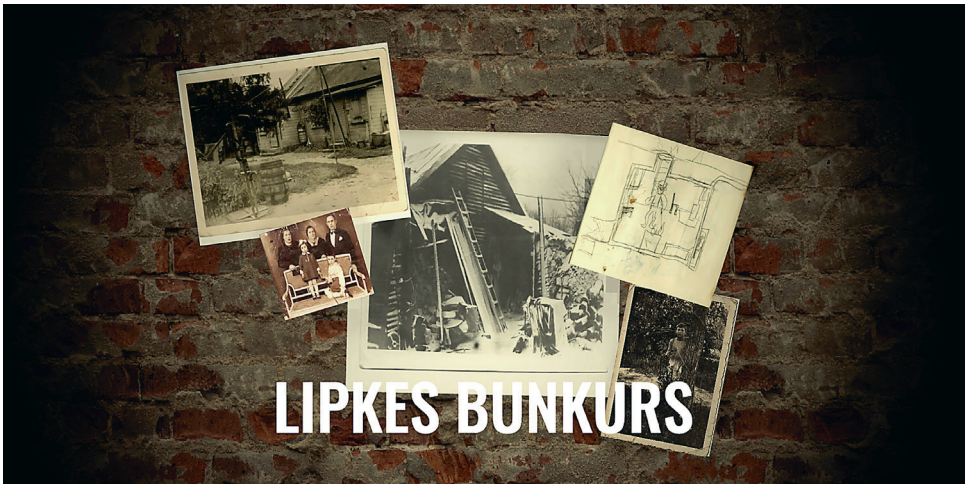

Figure 1. VR *Lipke's Bunker* screenshot. Rights holder: Žanis Lipke Memorial.

an immersive virtual reality simulation in an attempt to recreate the conditions in the hideout at the time. To gain a deeper understanding of the impact of the novel technology in a museum setting, several focus groups with 16–26 years old students were conducted at the Memorial in 2021, where after a short tour of the memorial, they participated in a pilot trial of the newly developed VR experience.

To demonstrate the synergy of dark heritage, heritage interpretation and virtual reality, this article will highlight some theoretical perspectives in these realms, demonstrating that virtual reality should not only be perceived as a technological marvel in the entertainment and gaming industry but also as an innovative tool to facilitate learning, also in heritage education. The article includes a description of the research methodology and an analysis of the focus groups on the pros and cons of the VR experience in a memorial museum. In conclusion, some noteworthy remarks young people voiced about the innovation in memorial museums are presented for further consideration.

Contemporary challenges in interpreting dark heritage to young generations

Dark heritage as a theoretical concept has developed alongside *dark tourism* studies, that explore topics of visiting, managing and interpreting sites associated with tragedies, suffering and death, including sites of wars, disasters, genocides, acts of terror and others [Thomas et al. 2019]. This discipline also explores the ways how the difficult past is presented to audiences today and why people visit sites of dark heritage [Eckersley 2020].

While it was initially common in dark tourism research to explain tourist interest in dark places as an attraction and fascination with death [Sharpley 2009; Thomas et al. 2019], there is now a strong emphasis on the educational function of dark destinations [Dresler and Fuchs 2021; Roberts 2018]. This is also in line with Light's [2017] conclusion that there is no clear rationale for distinguishing dark tourism from heritage tourism in terms of travellers' motivations and visitation experiences, as many of them are purposefully choosing to visit dark sites for learning, commemorating, pilgrimaging and understanding the past. Thus, the dark heritage memorials and museums are also increasingly focusing on creating more informative, interpretive and educational content in order to justify their mission as memory institutions, public enlighteners and conscience-keepers, creating a dialogue from the past through the present to the future on painful issues that divide and pressure society [International Coalition of Sites of Conscience 2018; Sevcenko 2002].

Undoubtedly, all heritage institutions have as one of their main goals the preservation and transmission of heritage to future generations. This is where skilful and engaging heritage interpretation plays a role. Over the past century, as heritage

interpretation has become a recognized discipline in theory and practice, it is also anticipated that it will evolve into a more "inclusive, culturally situated, dialogical and critically reflexive art" [Ablett and Dyer 2009: 211]. That is especially relevant when working with the interpretation of the painful, traumatic and difficult heritage which often causes dissonance and disagreement in different parts of society.

Keeping these incentives in mind, the contemporary museum pedagogy in the field of dark heritage has an important task to interpret the difficult past to the youngest generations which are the most distant from the painful tragedies of the last century and beyond. Also known as *digital natives* [Dingli and Seychell 2015], *generation Z* [Breuer 2022; Turner 2018] or *IGen* [Twenge 2017], these are the young, tech-savvy people who were born around the turn of the millennium and have grown up in the era of information and communication technologies, spending a great deal of their time in digital environments. Not only their lifestyle, values and habits are radically different from the older generations but also the ways how they communicate, seek information, educate and entertain themselves.

Considering also the vast possibilities of digital manipulation, rewriting history and publishing fake information, an accurate and professional dark heritage interpretation turns out to be quite an important yet sensitive issue for contemporary society, linking education, culture of remembrance and ethical aspects together. While the representation of dark heritage through simulative and interactive media such as video games and VR leads to the backlash on the risks of gamification and commercialisation of human suffering [Kansteiner 2017], it is important to remember that if the institutions of history and heritage preservation leave a vacuum in the digital environment, it may be filled by other actors whose attitude towards historical accuracy, research and education may be overshadowed by other motives. Furthermore, also "young people are no longer spectators, but users and producers" [Walden 2015: 3], acting as content creators and influencers for other viewers, opening up multiple avenues of self-interpretation of any historical event, based on whatever information they find relevant for their content.

While the long-standing social media struggle to reach young audiences [Richter 2019], technological advances and global transformations such as the pandemic have enhanced the development of new social virtual reality apps. They are promising a new future for social interaction, marketing, education and entertainment in the metaverse [Hackl 2020], offering a sense of presence and interaction with other users in exclusively virtual environments. As young audiences already spend much of their time in online gaming spaces, large tech giants such as Meta (former Facebook) are striving for socializing teenagers into the upcoming social virtual reality platforms like Horizon [Rodriguez 2023]. The future of virtual technology and immersive presence in the virtual worlds is still in development, but as it speeds up and aims to

transform digital communities, it should not be ignored by memory institutions that aim to reach young audiences.

Nevertheless, while communication on social networks is one of the key skills that museum communication specialists can no longer avoid mastering to reach out to the public, the following section of the article will focus on the way how a new VR technology is applied on-site at a memorial museum dedicated to a Jewish rescuer Žanis Lipke in Riga.

Heritage interpretation – learning through experiencing

Since the 1950s, when cultural heritage interpretation as a discipline took on a more concrete theoretical and practical shape, its primary aim has been to educate the public to understand, appreciate and preserve the heritage [Silberman 2013; Tilden 1957]. However, in recent decades, several heritage scholars have expressed criticism of heritage interpretation's excessive focus on cognitive knowledge production, while neglecting the possibility of heritage to be experienced in more diverse and holistic ways, integrating also emotional, affective, embodied and aesthetic attributes. Besides, people often prefer experience to learning and do not separate their cognitive, emotional and sensory experiences while visiting a heritage site [see, e. g. Smith 2021; Staiff 2014]. While this criticism does not question the need for heritage sites to contribute to educating society about past events, shifting focus from instruction and information to more emotional and participatory engagement could foster deeper understanding and interaction, especially among younger generations for whom historical events may seem very distant and traditional heritage interpretation methods unattractive.

Simultaneously, the challenge of interpreting dark heritage lies in the need to balance the educational and emotional messages at the sites of human suffering and traumatic events. It is important to reflect the gravity of what happened in an ethical and historically accurate way, but also to evoke a deeper sense of empathy, understanding and awareness among the visitors. Today, the possibilities to incorporate different nuances of human perception in interaction with dark heritage sites could be complemented by the integration of virtual or augmented reality technologies, allowing for more personal presence and immersion into the historical context.

One such example where an immersive VR experience has been integrated into the dark heritage interpretation is the VR *Lipke's Bunker*, produced by the Memorial. It demonstrates that carefully designed immersive audiovisual and historically accurate VR experience can assist in the interpretation of a difficult past. In autumn 2022, a specially designated space for the VR experience has been opened at the Memorial (see Figures 2 and 3), where visitors, mostly small groups

Figure 2. VR Space at the Žanis Lipke Memorial. Photo: Didzis Grodzs. Rights holder: Žanis Lipke Memorial.

Figure 3. VR Space at the Žanis Lipke Memorial. Photo: Didzis Grodzs. Rights holder: Žanis Lipke Memorial.

of schoolchildren or students, can use the Oculus Quest VR headsets to travel back more than 80 years into the harsh reality of a Jewish underground hideout in Riga. Following the narrative told from the perspective of Žanis Lipke's then eight-year-old son Zigfrīds, visitors descend into a virtually reconstructed three-dimensional 3m × 3m bunker to explore it from a first-person perspective and interact with artifacts located there.

The *Lipke's Bunker* VR experience was developed in several stages by Latvian VR designers, but before the last iteration and launching it to the public, several focus groups with young people were conducted to test the new VR experience with the target audience.

Approaching research methodology with young people's perspectives in mind

In autumn 2021, the author of this article together with her fellow researchers Elizabete Grinblate and Raivis Sīmansons from the Institute of Philosophy and Sociology of the University of Latvia conducted four semi-structured focus groups at the Memorial. The focus groups were aimed at getting young people's perspectives on the new VR experience, its suitability for conveying the historical narrative, the improvements needed, as well as youth's general attitudes and experiences of visiting places of dark heritage.

To form the focus groups, a nonprobability sampling method was chosen, combining convenience, purposive and snowball methods to recruit young people in their late teen or early adulthood years. It is suggested that choosing sampling units for convenience or coincidence can be applied during the initial stages of a study or during a pilot study [Given 2008: 520]. This VR testing was approached as a pilot study since VR experience as an interpretative tool had not been in use at the Memorial before and these were the first audience studies in this context.

In total there were 18 participants recruited, in the age range of 16–26 years. In small groups of 4–6 people they were first introduced to the story of Žanis Lipke and the permanent exhibition at the Memorial in a short guided tour, then they were instructed about the use of VR and one by one went through the VR experience. Finally, they participated in a group conversation with the researchers.

One of the research approaches in the focus groups was empathy mapping [Campese et al. 2018], where each participant before trying the VR experience would write down their feelings and thoughts on sticky notes and place them on a large poster divided into four quadrants stating – "What do I see?", "What do I hear?", "What do I feel?", "What do I think?". After the VR experience, the group was invited to repeat the process by writing down their feelings and thoughts again to see if they felt differently or if anything had changed. This exercise helped the

researchers to steer the conversation towards topics emerging from the participants themselves, thus adapting the pre-designed semi-structured interview script to the thoughts and feelings important to the young people, allowing them more agency in the research process.

This turned out to be a beneficial approach when working with young informants, given that any research is a hierarchical situation where the researchers possess the authority to instruct and guide the data collection process. There, however, is a risk that young people may feel inferior to the researchers and only follow their instructions or questions, withholding some of their thoughts or opinions. Kerr et al. [2023] suggest that combining multiple research methods could benefit researchers to understand youth's experiences at dark sites. The empathy mapping activity allowed for more diversification of the data collection methods, enabling to build a more meaningful conversation around themes initiated by the participants before engaging them in the pre-written interview questions.

Benefits of VR assisted experience at a dark heritage site

Virtual reality is currently understood as a technology whose main feature is the ability to provide the user with a sense of "presence" in a digitally generated world, with research also showing the effectiveness of VR as an affective medium. For example, Riva et al. [2007] suggest that there is a circular interplay between VR's ability to create a presence effect and elicit an emotional response, where on the one hand a greater sense of presence is observed in an emotional virtual environment, and vice versa when the emotional response is enhanced by the effect of presence being experienced through VR.

Several participants expressed similar feelings about their experience in the virtual *Lipke's Bunker*, saying that the physical immersion in this environment increased the effect of realism of the story and that the visual quality of the VR experience allowed them to imagine the situation at the time relatively well, for example, the real narrowness of the 3×3 m bunker. At the same time the current technological solutions for VR, which require the user to navigate the virtual environment with the help of special hand-held controllers, required some physical adaptation, as explained by this participant:

> *I was surprised that it seemed so realistic, that I was actually in the actual space, and... and... Well, yeah, it took me a minute to realise that... I overcame those instincts that I wanted to go somewhere, and I shouldn't go, but... move with... remote controls.* (Ēriks)[1]

[1] All participants have been anonymised and given pseudonyms.

This immersion in the realistic VR environment was described by some young people as a particularly exciting sensory experience, given that the VR design included interactive options. "Touching" specific objects in the virtual bunker allowed for a closer inspection or interaction with them, as they were accompanied by a narrative, photo or audio recording, illustrating the historical circumstances. For some participants the feeling of the historical VR presence was especially strongly felt:

> *This was my first [VR] experience. Seeing and touching things, like a suitcase, listening to the radio. It was... WOW...* (Anastasia)

The virtual reality allowed the user to interact with the environment with their whole body, as the person could stand, turn around or bend down to navigate the bunker space and complete the built-in tasks to move forward in the VR experience. In addition to stimulating the cognitive aspects, this immersive virtual environment also activated embodied knowledge [Ellingson 2008]. This is evident in this young man's words, where he highlights the effect of bodily presence and kinetic memory in the overall VR experience:

> *I think about the senses, both seeing and hearing are there. Then I think it's the same with films, but with virtual reality, there's an extra sense, some kind of movement that helps you remember.* (Mārtiņš)

Mel Slater points out that virtual reality can contribute to implicit learning through embodied experience, or the way the VR establishes virtual body ownership – *a virtual body coincident in space with the real body and seen from first person perspective can generate the illusion that it is the person's body* [Slater 2017: 30]. In this way, a sense of presence can be generated as an illusion that the user is in a particular place and events are really happening there.

Implicit learning, in turn, is a process in which people unconsciously learn new information or acquire abstract knowledge [Reber 1989, cited in Slater 2017: 24] where subjects are not self-aware of what they have learned and cannot articulate it concretely because the information learned is complex, incidental, and realised through different cognitive processes than those used for purposeful learning, for example, correlations, counts or patterns [Seger 1994, cited in Slater 2017: 25].

In the focus groups, it was demonstrated that in terms of VR as a complimentary source for learning about the Holocaust and Jewish rescue, young people acknowledged that this experience extended their ability to get information about the subject in a different way than in traditional learning environments. That implicit learning was amplified by the sensory and embodied aspects of presence in the virtually recreated historical space:

> *It's hard to imagine something like that [the Holocaust]... I was just thinking about that as well, that when you read all that stuff in history books, for example, you go through it but you don't quite dwell on it. But if you really go inside it in virtual reality, you can then picture it and understand it much better.* (Ričards)

Alongside cognitive stimuli, the effect of presence and embodiment can also help to create an emotional and empathetic response when learning about the dark heritage. Slater [2017] provides an example of an increased possibility of reducing people's bias against other races by embodying a person in another race through virtual reality. Several focus group participants acknowledged that the virtual experience of being transported into a narrow bunker where the Jews were hidden from the Nazis and hearing the story of terror, hardship and danger from a first-person perspective, created a more emotional attachment to the particular place and circumstances:

> *All the stuff that doesn't connect with you at school, all the dates* (..) *but it's the emotional stuff that would connect.* (..) *You don't remember how many died in the Holocaust, but you remember [that] the man who lived in* Ķīpsala *made a bunker under the shed. That, I think, is what you remember more and you go deeper into it because of the empathy, the human empathy.* (Ēriks)

Perhaps the fact that VR experiences offer not only observation but also action [Slater 2017: 23] helps making history learning more interactive on topics where the school curriculum alone cannot create such a deep connection to the past. Thus, with participatory VR experience and activation of different senses, the desired educational goal could be achieved through new, innovative heritage interpretation approaches.

Moreover, given that the specific VR experience of the *Lipke's Bunker* was relatively short (it took on average 12 minutes to complete it), the participants were able to stay focused on what was happening in the virtually recreated environment, which, together with the built-in interactive options, helped to picture the historical event in more detail. Hence, the immersive 3D audiovisual experience comprised a lot of simultaneous, implicitly perceivable information, including the real size of the space, historic artifacts, light, colours, sounds etc., condensing the story to a "lived" experience. Of course, this technology could not reproduce the sense of smell, taste, temperature or touch, which limited the realism, however, that sense of being present in a virtually recreated historic space seemed to provide more impact than traditional ways of learning about the past, as demonstrated by this informant:

> *The game taught me such concentrated information, and I'll walk out of here and I'll be able to retell the event, whereas in other museums, for example, there's so*

much detail and so many posters. Yes, I read something, but in the end I'm... I can't really recount it. (Mārtiņš)

To sum up, it can be considered that, with the proliferation and increasing accessibility of modern technology, museums and memorials of dark heritage have the potential to use virtual reality tools in a meaningful way to tell young audiences about the tragic events of the past, offering an innovative museum educational experience that enables a co-witnessing of the historic circumstances without separating cognitive, emotional and embodied experiences, thus providing a more holistic encounter with the heritage site.

Downsides of VR assisted experience at a dark heritage site

While the VR technology could provide innovative ways to help museum educators to interpret difficult heritage, focus groups revealed also some shortcomings of VR as a new medium in museum space.

There were conditions that young people found distracting or not that well designed during the VR testing. While the VR requires intense focusing on the actions occurring within it, the physical space where the experience takes place plays an important role too. As people can physically move within a certain range allowed by the VR headset, some users became concerned about the chance of accidentally running into a nearby object, such as a display cabinet or wall beam which were in a close proximity.

Another factor that seemed to be disturbing for some, was the sound interference from the external environment, caused by other people talking loudly or moving around the exhibition space. These sounds were intruding the VR user's experience and created a distraction from the virtual presence. A situation where you are fully immersed in a virtual environment, but are affected by obstacles or distractions from the physical environment, creates a noticeable distortion and interruption in the VR experience.

It was also suggested that there was a need for clearer instructions and easier technical solutions, especially for visitors less familiar with the VR technology. For example, the initial complexity of using the navigation controllers seemed to be unclear for some users, as well as other in-experience settings like adjusting the level of sound. Some participants pointed out that if a VR headset was freely available in the museum exhibition for individual use, but it did not work intuitively, or it was not clear how to operate the controllers, they would not try to understand it, but rather skip it and move on. This suggests that integrating such technology into a museum requires an easy VR viewing experience and a clear visual, recorded or personal instruction of its use.

The Memorial solved these issues before launching the VR experience to the public by setting up a special VR room with soft, round seats rotating around their axis, which help the user to stay in the VR environment safely and allow some mobility but prevent from colliding with an object in the exhibition. Also, instead of having VR experience as a part of the exhibition, it is now offered to small groups of visitors under the guidance of museum staff in a form of a special museum education program, thus limiting intrusion from other museum visitors. That allows for more privacy for the participants and facilitates a space for post-experience discussion with the museum educator. The VR designers also solved the initial problem with the slightly cumbersome controllers by reducing the navigation options the user needs to complete the VR experience.

Nevertheless, besides technological and spatial imperfections, there are also certain conceptual limitations to the introduction of VR as an interpretative tool for dark heritage education. Some young people commented that the VR experience for them was not able to represent the full scale of historical events, yet it provided a certain insight into the concrete situation. It would therefore not be possible to master the complexity of historical circumstances with the VR experience alone, however, it could provide a good aid in the interpretation when combining different methods of museum education and history learning. Such a view is illustrated here:

> *VR left me slightly underwhelmed. I think [VR] could be a great example of how to replicate historical conditions, but it's impossible to replicate the full extent of it.* (Ieva)

Also, in terms of emotional attachment to the event, not everyone experienced and felt it equally intensely during the VR experience. For some the virtually mediated narrative could not evoke such strong feelings, rendering it an artificially created product. At least on one occasion, a greater connection with the historical events seemed to be experienced during the tour at the museum exhibition:

> *On the emotional level, I didn't feel any particular strong emotions, but I rarely feel that way about artificial environments, be it a film, a game, or a book. Maybe it was the exposition that evoked a bit more emotions. But otherwise, I think it's a very good idea.* (Miks)

Although this was not the focus of this study, future research could evaluate how the effect of presence, learning and emotional engagement differs between those users who are new to VR experiences and those who are already active VR users in other contexts, such as gaming. At least for some of those focus group participants who tried the VR for the first time at the memorial, the experience was described as

more engaging and entertaining than educational. Conversely, those who mentioned playing video games or using VR for entertainment purposes in other contexts found this dark heritage VR experience more educational than game-like.

Concluding remarks on making dark heritage, technology and young people connect

To conclude the discussion on the use of virtual reality as an educational tool at dark heritage sites such as memorial museums and engagement of the young generations in learning about important yet tragic historical events, some remarks made by the focus group participants are worth considering.

One of the concerns for heritage institutions already now but more so in the future could be their public image and communication with younger audiences. Perhaps, past experiences of visiting other museums may have led some participants not to associate these memory institutions with experiences that could capture their attention and motivate them to pay a visit. This is echoed in the relatively modest pre-visit expectations about going to this memorial museum:

> *I mean, nothing personal, but I thought it wouldn't be that innovative.* (Zane)

Furthermore, some research participants had relatively low expectations not only about visiting the memorial museum per se but also about the planned VR product testing. Although it is a very innovative technology, some were hesitant about whether a small, non-commercial, non-profit institution would be able to finance the production of high-quality VR content, compared to the high-tech VR solutions offered by the commercial gaming industry:

> *For me personally, I thought, coming here, the memorial is still... it's not a museum, you don't really have to pay for it. And I thought, well, it's not going to be very impressive, but when I was in the [virtual] environment, it was very impressive.* (Ēriks)

Even though before the visit several focus group participants had not heard of the Memorial and the historical events that took place there during the Nazi occupation, the experience of combining a guided tour at the exhibition and immersion into the virtual environment of *Lipke's Bunker* for most participants created an interesting, engaging, empathetic and even surprising encounter with this dark heritage site.

Thanks to its properties to spark cognitive, emotional and embodied responses during the immersive first-person presence in the virtual environment, the VR experience *Lipke's Bunker* can be considered to be a helpful resource to interpret the largest Jewish rescue mission during the Holocaust in Latvia. However, VR

experience alone would not be sufficient to convey the historical complexity of the events, therefore a combination of different heritage interpretation techniques and tools would be the most beneficial.

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