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REVIEW ARTICLE

Life, death, and AI: Exploring digital necromancy in popular culture—Ethical considerations, technological limitations, and the pet cemetery conundrum

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ABSTRACT

This article explores the rise of generative AI, particularly ChatGPT, and the combination of large language models (LLM) with robotics, exemplified by Ameca the Robot. It addresses the need to study the ethical considerations and potential implications of digital necromancy, which involves using AI to reanimate deceased individuals for various purposes. Reasons for desiring to engage with a disembodied or bodied replica of a person include the preservation of memories, emotional closure, cultural heritage and historical preservation, interacting with idols or influential figures, educational and research purposes, and creative expression and artistic endeavors. As such, this article examines historical examples of the practice in hologram concerts, CGI characters, and others in order to analyze the ethical concerns related to privacy, consent, and commercial gain. It delves into the challenges of accurately representing individual personalities, misrepresenting cultural context, and the limitations of available data. Furthermore, it explores the Pet Cemetery conundrum and its impact on the grieving process, mental health, and the moral implications of using AI to generate interactions with the deceased. By contemplating future use cases like interactive virtual assistants and realistic historical reenactments, the article highlights the importance of addressing ethical implications as these technologies continue to advance and contributes to the discourse on the responsible and ethical use of generative AI, LLM, and robotics in the context of digital resurrection, calling for ongoing discussions and considerations of AI rights, social dynamics, and the grieving process.

Keywords: digital necromancy; generative AI; large language models (LLM); ethical considerations; grieving process

1. Introduction

The boundaries between life and death are being challenged in unprecedented ways as advancements in technology enable the creation of digital twins and AI clones of living or deceased individuals[1]. The emerging field of "digital necromancy" has captured the imagination of both researchers and the general public, offering possibilities that were once relegated to the realm of science fiction[2]. The researchers use the term here to refer to the practice of using advanced technologies, such as artificial intelligence (AI) and robotics, to recreate or simulate

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the presence of deceased individuals or to interact with digital representations of their personalities[3]. It involves harnessing data from various sources, including online profiles, voice recordings, images, and other digital artifacts, to construct virtual versions of individuals, enabling their continued existence in digital form[4]. This convergence of technology and commemoration has profound implications for how we interact with the departed, raising ethical considerations, probing technological limitations, and introducing intriguing dilemmas.

Recent advances have showcased the remarkable potential of technology to recreate and interact with deceased individuals[5]. One notable example is the development of Ameca, an AI-powered avatar that embodies the persona of a specific individual[6]. Through the integration of large language models (LLM), such as GPT-3 and GPT-4, Ameca is capable of engaging in conversational interactions, expressing a wide range of emotions, and even reacting to real-time events. Ameca's ability to replicate facial expressions and provide nuanced responses creates an uncanny sense of presence, blurring the line between the living and the deceased. The novel development exemplifies how AI and robotics are enabling a new era of commemoration and interaction with those who have passed away, raising intriguing questions about the nature of identity, consciousness, and the ethics of resurrecting the dead[7].

The desire to commemorate and interact with the deceased is deeply rooted in human history, dating back to at least the Neolithic era[8]. However, recent technological advancements have brought us closer than ever to realizing this age-old aspiration. Beyond the realm of fictional narratives, there have been notable developments in the realm of digital twins and AI clones that enable conversations with videos of celebrities and historical figures[9]. For instance, companies like StoryFile[10] have pioneered conversational video AI, allowing users to engage with recorded interviews of iconic personalities like William Shatner. These interactive experiences offer a glimpse into the past, where individuals can ask questions and receive tailored responses, blurring the boundaries between the living and the departed. Such advancements demonstrate the increasing convergence of AI, virtual reality, and human-machine interaction, providing a glimpse into the possibilities and ethical considerations of virtual afterlives.

The advent of digital necromancy, with its ability to recreate individuals based on their digital footprints, raises significant ethical considerations. One prominent concern is the potential for identity theft and the unauthorized recreation of someone without their explicit permission[11,12]. As technology advances, it becomes increasingly feasible to generate replicas of individuals using their online presence, voicemails, or even selfies, blurring the line between consent and exploitation[13]. The ability poses a fundamental question regarding ownership and control over one's digital identity and the right to determine how one is represented in the virtual realm.

Furthermore, the impact of these advancements on interpersonal relationships can not be overlooked. With the ability to create any desired version of a person and have them act and react as desired, there is a risk of manipulating or distorting the authenticity of human interactions[14]. The boundaries between real and artificial relationships may become blurred, leading to challenges in trust, emotional intimacy, and genuine connection[15]. There is potential for the very fabric of human relationships being altered when anyone can fabricate a version of a person according to their own desires and expectations.

The implications for the grieving process are equally profound. The confluence of these technological innovations offers the possibility of keeping a loved one alive in perpetuity, ranging from preserving their voice to creating a fully interactive replica[16]. While this may provide a sense of comfort and solace for some individuals, it also raises complex questions about the nature of grieving and acceptance of loss[17]. Continuously interacting with a digital representation of the deceased may hinder the natural progression of grief, inhibiting the necessary

emotional healing and adjustment to life without the physical presence of the loved one. Lindemann[18] noted as such in her study on these so-called "Deathbots". The prolonged connection to the deceased through technological means may delay the necessary process of letting go and moving forward.

In examining the ethical considerations of digital resurrection, it is crucial to navigate the delicate balance between honoring the memories of the deceased and respecting the boundaries of personal autonomy, consent, and the grieving process[9]. The potential benefits and pitfalls of these technological advancements must be carefully weighed against the profound impact they may have on our relationships, identities, and emotional well-being. As we delve deeper into the realm of cybernetic reanimation, it becomes imperative to establish robust ethical frameworks that safeguard personal agency, privacy, and the authentic human experience, while simultaneously harnessing the positive potential of these technologies to enhance our understanding of the past and the present[19].

The emergence of new generative technologies, AI clones, digital twins, and the ability to recreate deceased individuals or simulate living personalities has opened up new frontiers in the realms of AI and robotics. These advancements offer intriguing possibilities for commemorating the departed, engaging with historical figures, and even shaping interpersonal relationships. However, they also raise profound ethical considerations surrounding consent, identity theft, and the potential distortion of personal narratives. Furthermore, the impact on the grieving process and the perpetuity of a loved one's presence in various digital forms evoke deep emotional and psychological implications. By delving into these complex themes, this study aims to shed light on the intersection of technology, humanity, and the social fabric of our society, providing valuable insights into the future implications of digital necromancy, AI clones, and their impact on our lives.

2. Past use of digital necromancy

Necromancy is a supernatural or occult practice that involves communicating with and summoning the spirits of the dead[20]. It is a form of divination or magic that seeks to gain knowledge or influence from the deceased. Historically, necromancy has been associated with various ancient civilizations and cultures, including ancient Egypt, Greece, and Mesopotamia[21]. An example of necromancy from history is the practice of necromancy in ancient Greece. The ancient Greeks believed in the existence of the spirit world and sought to communicate with the dead through rituals and ceremonies. One notable example is the Necromanteion of Ephyra (4th century BCE)**,** a sacred site in ancient Greece where visitors would consult the spirits of the dead for prophetic guidance and advice[22].

During the renaissance era, the practice of necromancy continued to intrigue and captivate the minds of individuals. One notable figure associated with necromantic beliefs and practices was the renowned Italian artist and sculptor, Benvenuto Cellini (1500–1571). Cellini, known for his artistic mastery, also dabbled in the occult and claimed to have knowledge of necromancy. In his autobiography, *The Life of Benvenuto Cellini* (written 1558–1562), he recounts an experience where he attempted to summon a spirit through necromancy. According to Cellini, he performed a ritual in a cemetery, using various incantations and invocations to call forth the spirit of a deceased individual[23]. While the veracity of Cellini's account is debatable, his involvement in necromantic practices during the renaissance era demonstrates the enduring fascination with communicating with the spirit realm[24].

During the Victorian era (1837–1901), a period characterized by fascination with the supernatural and spiritualism, the practice of necromancy found its place in various forms[25]. One notable example is the infamous case of the Fox sisters, Margaret (1833–1893) and Catherine (Kate) (c. 1839–1892)**,** who gained prominence as mediums and spiritualists. In 1848, the sisters claimed to have made contact with the spirit of a deceased person in their family home in Hydesville, New York. Their alleged ability

to communicate with the dead sparked a widespread interest in spiritualism, leading to the formation of spiritualist societies and the emergence of séances as a popular form of entertainment. The Fox sisters' supposed interactions with the spirit realm and their role in popularizing spiritualism during the Victorian era exemplify the enduring allure of necromantic practices in different historical periods[26].

With the rapid advancement of technology, we have witnessed the rise of emerging tools and techniques that have facilitated the practice of talking to the dead. In popular culture, there are several notable examples of digital necromancy through the use of hologram concerts and CGI characters. One prominent instance is the hologram performance of Tupac Shakur at the Coachella Valley Music and Arts Festival in 2012. Through the clever integration of computer-generated imagery and projection technology, a lifelike holographic representation of the late rapper was brought to the stage, captivating the audience and creating a surreal experience[27]. Similarly, in the realm of cinema, CGI has been employed to resurrect deceased actors and recreate their performances. For instance, in the film *Rogue One: A Star Wars Story*[26], the character Grand Moff Tarkin, originally portrayed by Peter Cushing, was digitally recreated to appear in the movie, despite the actor's passing in 1994[28]. These examples demonstrate how posthumous interaction has permeated popular culture, blurring the boundaries between reality and fiction, and raising intriguing questions about the ethical implications and future possibilities of recreating and interacting with deceased individuals through technological means.

3. Ethics and privacy concerns

The rise of digital necromancy and the ability to recreate and interact with deceased individuals through emerging technologies brings forth a host of ethical and privacy concerns. This intersection of AI, robotics, and the recreation of individuals' digital presence poses significant challenges in safeguarding privacy and respecting the autonomy and dignity of the deceased. Profound ethical questions arise regarding consent, privacy rights, and the potential misuse of personal data. In this section, the multifaceted ethical considerations surrounding the new ability will be explored, shedding light on the implications for individual rights, interpersonal relationships, and the grieving process.

3.1. Ethical issues in digital necromancy

With the emergence of posthumous AI emulation, privacy concerns have become a significant ethical consideration. The use of personal data, such as social media posts, emails, voicemails, and even biometric information, raises questions about the extent to which individuals' privacy is being respected[29]. The process of recreating someone's likeness and personality require access to their digital footprint, which may include sensitive and private information[30]. The ability raises concerns about consent, data security, and the potential for unauthorized access or misuse of personal data. Additionally, the use of personal data without explicit consent from the deceased or their families can infringe upon their privacy rights and raise ethical questions about the boundaries of posthumous consent[31].

Another ethical consideration with digital revival is the ethics of commercializing the personas and identities of deceased individuals. The use of AI-powered replicas or avatars for commercial gain raises questions about exploitation, dignity, and respect for the deceased. When deceased individuals are brought back to life in digital form for entertainment, marketing, or other commercial purposes, it raises concerns about commodification and the potential exploitation of their likeness without their consent. The passing of Kobe Bryant in 2020 highlighted the importance of estate planning and posthumous branding for athletes, raising questions about ownership, protection, and the legacy athletes can establish, emphasizing the need for further research on athletes' brand building and estate planning practices[32]. The commercialization of deceased individuals also raises questions about the ethical responsibilities of companies and individuals

involved in creating and utilizing these digital replicas, as well as the potential impact on the legacy and reputation of the deceased[33].

In the realm of posthumous digital replication, privacy concerns and the ethics of commercialization are critical areas that demand careful examination. Respecting the privacy rights of the deceased, obtaining consent from their families, and ensuring responsible use of personal data are essential for upholding ethical standards. Likewise, considering the ethical implications of using digital replicas of deceased individuals for commercial purposes is crucial to avoid exploitation and uphold the dignity and memory of the deceased. By addressing these ethical concerns, the use of these technologies can strive for responsible and ethical practices that navigate the complex intersection of technology, privacy, and commercialization.

3.2. Ethical implications of AI reanimating deceased individuals

One of the significant ethical considerations in AI reanimating deceased individuals is the issue of consent. Resurrecting the likeness, voice, and personality of a deceased person using AI raises questions about whether they have given their explicit consent for such recreation during their lifetime[34]. Similarly, the consent of their family members or legal representatives becomes crucial in determining the appropriateness of recreating the deceased individual[35]. Respecting the wishes of the deceased and their family members is essential to ensure that their autonomy and personal choices are upheld in the digital realm.

Another ethical concern stems from the potential misrepresentation of the beliefs and viewpoints of the deceased. AI algorithms may not accurately capture the complexities and nuances of an individual's thoughts and opinions. Consequently, the recreated digital persona may inadvertently express views or take actions that the deceased would not have endorsed or approved of in their lifetime. This misrepresentation can lead to the distortion of a person's legacy, misinforming others about their true character, and infringing upon their right to be accurately represented[36].

Moreover, the use of AI to reanimate deceased individuals can have profound implications for the grieving process. Keeping a loved one artificially "alive" or recreating them in a digital form may hinder the natural process of mourning and acceptance. It can potentially disrupt the emotional healing and closure that comes with letting go of a departed person. Furthermore, interacting with a digital replica of a deceased loved one may create a false sense of companionship or attachment, preventing individuals from fully engaging in new relationships and moving forward in their grief journey[37].

Understanding and addressing the ethical implications of AI reanimating deceased individuals is crucial for responsible and respectful practices. Upholding the principles of consent, ensuring accurate representation, and considering the impact on the grieving process are paramount. By navigating these ethical considerations, the field of AI reanimation can strive to balance technological advancements with compassion and ethical responsibility, ultimately contributing to the well-being and dignity of both the living and the departed.

3.3. Importance of privacy concerns in digital necromancy

Privacy concerns play a significant role in digital necromancy, particularly regarding the use of personal data. To recreate a deceased individual's likeness, voice, and personality, substantial amounts of personal information and data are required. This includes archived digital footprints, social media posts, emails, voicemails, photographs, and more. The gathering and utilization of such personal data raise important questions about consent, ownership, and the potential for misuse. Safeguarding the privacy of individuals, even after their passing, is crucial to maintain trust, respect their personal boundaries, and uphold ethical standards[38].

The digital reanimation of deceased individuals

also raises concerns about the potential for identity theft. Given the extensive collection of personal data required for accurate recreation, there is a risk that this information could fall into the wrong hands and be exploited for malicious purposes. From impersonation to fraud, the misuse of a deceased person's identity can have severe consequences for their family, friends, and the broader society[39]. Protecting the privacy and identity of the deceased becomes essential in preventing unauthorized access and mitigating the potential risks associated with identity theft.

Addressing privacy concerns in digital reincarnation is imperative to maintain the trust of individuals and respect their right to privacy, even after death. Strict privacy policies, secure data storage, and informed consent protocols should be established to safeguard personal information. By prioritizing privacy and implementing robust security measures, the field of digital necromancy can ensure responsible and ethical practices that protect the integrity and dignity of both the deceased and their loved ones.

4. Current technological limitations

Despite significant advancements in AI and related technologies, there are several inherent limitations that affect the accuracy and ethical considerations of digital necromancy. Understanding these technological constraints is crucial for assessing the current capabilities and potential risks associated with recreating deceased individuals through AI. One of the primary challenges in virtual afterlife is the accurate representation of individual personalities and experiences. While AI models can learn from vast amounts of data, capturing the nuanced aspects of a person's character, emotions, and subjective experiences remains a complex task. AI systems will for the foreseeable future struggle to fully comprehend the intricacies of human behavior, motivations, and personal growth, resulting in potential inaccuracies and misrepresentations in the recreated digital personas[40].

Another limitation lies in the potential misrepresentation of cultural context. Cultural norms, values, and beliefs shape an individual's identity and actions, and accurately capturing and replicating these aspects is a challenging endeavor. AI models trained on diverse datasets might struggle to fully grasp the cultural nuances and contextual references that influence a person's behavior, leading to potential misunderstandings or misinterpretations in the recreated digital representations[41]. While yet another limitation can be found in the quality and availability of data. The accuracy and fidelity of the recreated personas heavily rely on the data used during training. In cases where limited data is available or the data sources are incomplete, the resulting digital avatars may lack the depth and authenticity necessary for a faithful representation[42]. Additionally, historical figures or individuals from earlier periods may have limited data available, making it even more challenging to accurately recreate their personas.

Understanding these current technological limitations is essential in shaping responsible practices and managing expectations in the field. Recognizing the challenges in accurately representing individual personalities, cultural context, and the availability of data can inform ethical decision-making, guide the development of more advanced AI models, and help establish realistic boundaries for the application of these technologies. Continued research and development in AI and related fields are necessary to address these limitations and ensure responsible and ethically sound practices.

5. The pet cemetery conundrum: Problematic nature of the grieving process

Popular culture has long been fascinated with the idea of regenerating the dead, exploring the complex dynamics and ethical dilemmas surrounding the grieving process. Films like *Pet Sematary* (1989), *Flatliners* (1990), and *The Lazarus Effect* (2015) delve into the repercussions of bringing de-

ceased loved ones back to life, raising thought-provoking questions about the emotional toll and moral implications of tampering with death. There is a simultaneous attraction and revulsion towards reanimating a deceased loved one, akin to the uncanny valley effect[43]. In Stephen King's novel[43] and subsequent film adaptation of *Pet Sematary*, the story revolves around a mystical burial ground that has the power to resurrect the deceased. The narrative explores the consequences when the protagonist, driven by grief, decides to bring back a loved one, only to witness their dark transformation and the devastating effects it has on their family. Similarly, *Flatliners* and *The Lazarus Effect* presents a scientific approach to resurrection. In the case of the latter, a group of researchers discover a way to revive the dead using an experimental serum. However, the revived individuals come back with sinister changes and uncontrollable powers, highlighting the inherent dangers of playing with the boundaries of life and death.

These representations in popular culture shed light on the problematic nature of the grieving process when it comes to posthumous digital replication. Grief is a deeply personal and complex experience, and the desire to reconnect with deceased loved ones is a natural response. However, the ethical implications arise when technology offers the means to recreate their presence artificially. The act of resurrecting the dead raises questions about the moral responsibility of individuals and the potential impact on their own emotional well-being. Does digital resurrection provide genuine closure or merely prolong the grieving process? Can the recreated versions truly capture the essence of the departed, or do they become mere simulations that may hinder the ability to let go and move forward?

Therefore, digital necromancy presents a conundrum, as it offers the possibility of maintaining a connection to deceased loved ones but also raises concerns about the healthy progression of the grieving process. While the technology may provide comfort and solace, it is essential to consider the long-term consequences and the potential for emotional stagnation or detachment from the natural healing process. Striking a balance between honoring the memories of the departed and allowing individuals to navigate the grieving process is paramount. Ethical discussions and guidelines should address the boundaries and responsible use of these experiences, ensuring that the emotional well-being of individuals is not compromised, and that the technology does not hinder healthy coping mechanisms.

Navigating the Pet Cemetery conundrum requires careful consideration of the emotional, psychological, and ethical aspects of the grieving process. Recognizing the limitations and potential pitfalls of recreating the deceased through AI and robotics is crucial to promoting healthy grief management and supporting individuals in their journey towards acceptance and healing. By fostering responsible practices and engaging in open dialogues, society can navigate this complex territory and ensure that technology remains a tool that respects the sanctity of the grieving process.

6. Summary of key ethical issues

The review of research to this point has shed light on the key ethical issues surrounding digital necromancy, particularly in the context of AI-powered avatars and replicas of real people. The discussion highlights several important considerations, including privacy concerns, the ethics of commercialization, consent of the deceased and their family, misrepresentation of beliefs and viewpoints, the impact on the grieving process, and the importance of privacy in handling personal data. These ethical issues are crucial in shaping our understanding of digital necromancy and require further examination to refine and supplement our views. By exploring these key concerns, researchers can deepen their understanding of the implications of this technology and work towards developing ethical frameworks and guidelines to ensure responsible and respectful use of AI in replicating and interacting with deceased individuals.

There are several key ethical issues surrounding digital necromancy, including privacy considerations, as the use of personal data and the potential for identity theft raise significant privacy risks. Additionally, the ethics of commercialization are raised, as the exploitation of deceased individuals for financial gain can be seen as morally problematic. Consent of the deceased and their family is another important ethical consideration. The use of AI to reanimate deceased individuals raises questions about whether explicit consent was given or if the individual would have approved of such replication and interaction. Misrepresentation of beliefs and viewpoints is also a concern, as AI may not accurately capture the nuances of an individual's thoughts and may potentially misrepresent their legacy.

Furthermore, the impact on the grieving process of loved ones is a significant ethical consideration. The ability to keep a deceased loved one "alive" in digital form may have both positive and negative effects on the bereaved. It raises questions about the authenticity of the grieving process and the potential for prolonging or distorting the healing journey.

Overall, these ethical issues underscore the need for careful consideration and responsible implementation of digital necromancy technologies. Further research and discussions are necessary to refine our understanding of these ethical challenges and to develop guidelines and frameworks that ensure respectful and ethically sound practices in this emerging field.

7. Future potential use cases

7.1. Creation of interactive virtual assistants

The development of these new types of experiences opens up intriguing possibilities for the creation of interactive virtual assistants using the personalities of deceased individuals. Imagine having a virtual assistant that embodies the knowledge, wisdom, and unique characteristics of historical figures, renowned scholars, or even beloved family members. These interactive virtual assistants could provide guidance, share insights, and engage in conversations, offering a personalized and immersive experience[44].

While the idea of interacting with virtual versions of deceased individuals may be enticing, it raises significant ethical considerations. The consent of the deceased and their families must be carefully addressed, ensuring that the use of their likeness and personality aligns with their wishes and respects their rights. As well, safeguards should be implemented to prevent the misuse or exploitation of these virtual assistants, emphasizing the importance of responsible and ethical implementation.

7.2. Realistic historical reenactments

Another potential future use case lies in the realm of realistic historical reenactments. By utilizing AI algorithms and available historical data, it becomes possible to recreate significant moments, events, or even entire eras with lifelike accuracy. These reenactments could provide invaluable educational opportunities, allowing individuals to experience history in an immersive and interactive manner[45]. However, ethical considerations must be at the forefront when utilizing this technology for historical reenactments. The accuracy and authenticity of the recreated personas and events must be carefully verified to ensure that they align with historical facts and do not distort or misrepresent the past. Additionally, maintaining transparency and avoiding the perpetuation of historical biases or misconceptions becomes crucial to fostering a responsible and inclusive portrayal of history.

7.3. Bridging the gap between generations

Digital immortality also holds the potential to bridge the gap between generations by enabling conversations and connections across time. Imagine being able to have heartfelt conversations with ancestors or past generations, learning from their experiences, and gaining valuable insights into the shared history of humanity. This can foster a deeper

sense of connection, cultural preservation, and intergenerational understanding[46]. However, as with any application, it is essential to approach these interactions with respect and caution. Balancing the desire for connection and knowledge with ethical considerations, such as consent and accurate representation, is paramount. Additionally, ensuring that these interactions do not replace genuine human connections or hinder the development of interpersonal relationships is crucial for maintaining healthy social dynamics.

The future potential use cases are vast and hold both promise and ethical challenges. As technology continues to advance, it is vital to approach these possibilities with a thoughtful and responsible mindset, ensuring that the benefits are maximized while mitigating potential risks. By navigating the ethical considerations and engaging in ongoing dialogue, we can harness the power to create meaningful and respectful interactions that enrich our lives and deepen our understanding of the past.

7.4. Addressing ethical concerns and limitations

Finally, when considering future potential use cases of digital necromancy, it is important to address the ethical concerns and limitations raised in the article. As such, this section provides an opportunity to delve into possible solutions and guidelines that can help navigate the complex ethical landscape surrounding this technology. For example, one possible solution is the establishment of robust ethical frameworks[47]. These frameworks would outline clear guidelines and principles for the responsible development and application of AI in the recreation of digital persons and would address issues such as consent, privacy, and the respectful representation of deceased individuals[48]. By providing a set of ethical standards, these frameworks would serve as a guide for developers, researchers, and policymakers in ensuring that the technology is used ethically and with sensitivity.

Exploring alternative data sources or AI techniques is another avenue to consider[49]. The accuracy of representations generated through these new generative technologies relies heavily on the available data and the AI models used. By expanding the data sources beyond the individual's digital footprint and incorporating diverse perspectives and experiences, a more comprehensive and nuanced representation can be achieved. Additionally, advancements in AI techniques, such as deep learning and NLP, can contribute to more accurate and contextually appropriate interactions with the recreated individuals[50].

Protecting privacy and ensuring consent are crucial aspects that need to be addressed. Measures can be implemented to safeguard personal data, ensuring that the use of such data complies with ethical and legal standards[51]. Additionally, obtaining explicit consent from individuals or their designated representatives can help ensure that their likeness and identity are used appropriately and with their informed approval[52]. Transparency in data usage and the implementation of privacy-enhancing technologies can further strengthen privacy protections in the context of the topic at hand while past examples from the health care sector can be referenced[53].

Examples of these solutions and guidelines can be drawn from existing frameworks and best practices in related fields. For instance, the field of medical ethics provides valuable insights into informed consent and the protection of patient data. Ethical considerations in AI development, such as fairness, transparency, and accountability, can also inform the establishment of ethical frameworks for digital necromancy.

By exploring these solutions and guidelines, researchers and practitioners can contribute to the responsible and ethical advancement of digital necromancy technologies. These measures can help address the ethical concerns and limitations raised, ensuring that the development and application of this technology align with ethical principles, respect privacy, and prioritize the well-being of individuals and their loved ones.

8. Conclusions

Digital necromancy presents a fascinating yet ethically complex landscape for popular culture purposes. Throughout this article, the ethical considerations, limitations, and potential use cases of this technology have been explored. It is clear that this new ability raises significant privacy concerns, particularly in relation to personal data and the potential for identity theft. The ethics of commercialization and the consent of the deceased and their families also come into question. Furthermore, the impact on the grieving process and the moral implications of using AI to generate interactions with the dead must be carefully examined. While technological advancements have enabled remarkable achievements in recreating personalities and interactions with deceased individuals, the technology should be used judiciously and regulated. The limitations of current technology should be recognized, including the difficulty in accurately representing individual personalities and experiences, misrepresenting cultural context, and the reliance on available data.

Moving forward, ongoing discussions and considerations of the ethical implications of these posthumous experiences are of utmost importance. As the technology continues to develop, engaging in a thoughtful and responsible approach will be essential. This includes prioritizing consent, safeguarding privacy, and ensuring accurate representation. By addressing these ethical concerns and fostering a collective understanding, we can navigate the complexities of digital ephemera of essences and harness its potential for positive and meaningful experiences. The confluence of new technologies opens up new possibilities for popular culture, historical reenactments, and bridging intergenerational gaps. However, it is imperative that we proceed with a cautious mindset, maintaining a balance between innovation and ethical considerations. By doing so, these new technological abilities can be used in a manner that addresses privacy, honors the wishes of the deceased, and enhances our cultural experiences. Ongoing discussions and ethical considerations will play a vital role in shaping the responsible and meaningful use of this technology in the future.

Conflict of interest

The authors declare no conflict of interest.

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