Unconditional Basic Meaning as Digital Public Good

Soenke Ziesche
Independent researcher
Brooklyn, NY, USA
soenke.ziesche@gmail.com

Roman V. Yampolskiy
Speed School of Engineering
University of Louisville, KY, USA
roman.yampolskiy@louisville.edu

Abstract

This paper introduces the concept of "unconditional basic meaning" as a digital public good, proposing that governments provide citizens with access to AI-powered virtual worlds that foster personal growth, creativity and fulfilment. As AI-supported automation increasingly displace human jobs and other daily chores, many citizens risk losing their sense of purpose or ikigai, referred to as i-risks, while having much more spare time at hand. To address this challenge, the paper argues that governments should invest in digital public goods that prioritize citizens' well-being and purpose. By providing unconditional basic meaning, governments could also help create a more just and equitable society where everyone would have access to a sense of purpose and fulfilment, regardless of their background or socioeconomic status. This would not be the case if the corporate sector was to provide digital meaning. The paper also addresses a number of potential objections to this approach and concludes with specific recommendations for governments to implement AI-powered virtual worlds as a digital public good.

Introduction

Initially, four concepts (i-risks, increased spare time due to AI systems, digital public goods and unconditional basic income) are introduced, which then leads to the main topic of the paper: Unconditional basic meaning as digital public good.

i-risks

It has been argued that AI systems may pose unique challenges and risks that could impact the ability of humans to pursue their *ikigai*, which is a Japanese concept that means "a reason for being" or "a life purpose" [1]. The term "i-risk" describes scenarios where humans may lose or be unable to find their ikigai due to disruptive changes brought about by new technologies, even if these changes are seemingly beneficial and make the lives of people easier. Therefore, traditional forms of ikigai, particularly, but not only in professional contexts, may diminish as AI systems advance. While similar concepts have been explored in various cultures and philosophical traditions, such as the French notion of "raison d'être" or the Greek concept of "eudaimonia", here the term "ikigai" is used for the sake of consistency.

Without a sense of ikigai people may struggle to find meaningful ways to spend the additional spare time freed up by technological advancements. As a result, they might fill their days with mindless activities, such as endless Internet scrolling, social media browsing or excessive online entertainment. This could lead to a sense of emptiness, disconnection, and potentially even more mental health issues, as individuals fail to find fulfilment and purpose in their lives [e.g. 2].

Increased spare time

Time-use research is a multidisciplinary field that investigates how individuals allocate their time across various activities, with applications in areas such as health and wellbeing [3]. To facilitate comparisons across different studies, standardized classification systems like the International Classification of Activities for Time-Use Statistics (ICATUS) have been developed. ICATUS, introduced in 2016, provides a framework for categorizing time use into the following nine primary categories, each with further sub-classifications, enabling researchers to systematically analyse and understand patterns of time allocation [4, p.11]:

- Employment and related activities
- Production of goods for own final use
- Unpaid domestic services for household and family members
- Unpaid caregiving services for household and family members
- Unpaid volunteer, trainee and other unpaid work
- Learning
- Socializing and communication, community participation and religious practice
- Culture, leisure, mass media and sports practices
- Self-care and maintenance

The increasing presence and rapid advancements of AI systems is leading to job displacement [e.g. 5] and a reduction in the time required for both paid [e.g. 6] and unpaid tasks [e.g. 7]. This means that much less time is spent on the first three ICATUS

categories, while traditionally people globally had no choice, but to dedicate significant time to these activities [e.g. 8].

Another factor is that people not only have more spare time each day, but also tend to live longer globally,[1] resulting in a longer lifetime.

As a result, many individuals are finding themselves with a significant amount of extra time on their hands. Yet, this shift poses a substantial challenge, as people may struggle to find meaningful ways to occupy this newfound time [1, 9], an issue that tends to be underestimated. Individuals may face the dual challenge of finding ways to occupy their time with activities and experiences, and more importantly, discovering pursuits that fill their lives with a sense of purpose and bliss. This issue is especially concerning when the obsolete activities in question were once a person's ikigai, as is often the case with professional occupations.

Digital public goods

The concept of public goods has long been integral to societal well-being, encompassing non-rivalrous and non-excludable goods that benefit everyone. Traditional public goods include national defence, infrastructure and education. These goods are fundamental to the functioning of a society, providing essential services and infrastructure that individuals cannot afford or access otherwise [e.g. 10].

Governments also recognize the importance of leisure and entertainment in citizens' lives. Public goods for entertainment, such as public libraries, public baths, playgrounds, sports fields and parks, demonstrate an understanding that enjoyment and relaxation are vital components of human experience. These spaces foster community, creativity and personal growth, highlighting the role of governments in enhancing citizens' quality of life.

The advent of digital technology has led to the emergence of digital public goods, which are digital in nature and offer benefits similar to traditional public goods. Digital public goods include open-source software, digital literacy programs and online educational resources. These goods have the potential to reach a wider audience, bridge knowledge gaps and drive economic growth [e.g. 11].

A concept, which has not been considered much, are for digital public goods to provide access to purpose, bliss and fulfilment and not just to information. For instance, online platforms that offer digital art classes, community-driven coding projects or virtual volunteering opportunities could empower individuals to discover new passions and contribute to society in meaningful ways.

Unconditional basic income

Universal basic income is a social welfare concept where every citizen in a given population receives a regular, unconditional sum of money from the government. This idea has sparked intense debate [e.g. 12]. Proponents argue that universal basic income could provide a safety net, ensuring everyone's basic needs are met, regardless of

[1] https://www.who.int/news-room/fact-sheets/detail/ageing-and-health

employment status. This could alleviate poverty, reduce inequality and give people the financial security to pursue meaningful work or entrepreneurship. Some see universal basic income as a potential solution to job displacement caused by automation and AI.

Critics, however, raise concerns about the feasibility and effectiveness of universal basic income. They argue that implementing universal basic income would require significant funding, potentially through increased taxes, and might not be an efficient way to address poverty. Others worry that universal basic income could reduce the incentive to work, leading to decreased productivity. The discussion around universal basic income is complex, with various pilot programs and experiments underway to test its viability and potential impact on society [13].

While the topic of universal basic income is still debated, in this paper the notion of "unconditional basic meaning" is introduced and the provision of it by governments is proposed regardless of the economic circumstances of the beneficiaries.

Unconditional basic meaning

In this section the outlined challenges, i-risks and increased spare time, are combined with the concepts of digital public goods and the unconditional provision of goods or services. The innovative notion of "unconditional basic meaning" comprises digital public goods to promote citizens' well-being. While universal basic income focuses on financial security, unconditional basic meaning could focus on providing a sense of purpose, fulfilment and happiness through digital means.

This concept could be explored through online supplies, such as:

- Digital platforms for civic engagement and participation
- Online resources for mental health and wellness
- Virtual volunteering opportunities
- Digital skills training and education programs
- Community-building initiatives through social media and online forums

This concept could be particularly relevant in the context of AI-driven automation and increased spare time, where people may need to redefine their sense of purpose and meaning.

Potential objections

Meaning is elusive and not generalisable

This paper does not aim to resolve the perennial philosophical conundrum of the meaning of life [e.g. 14]. Rather, it investigates the potential of AI-enabled interventions to provide individuals with engaging and substantive experiences, thereby mitigating the challenges associated with increased leisure time resulting from technological advancements. It is acknowledged that this proposal is in its infancy, and further research is needed to determine which meaningful activities would be most beneficial and suitable for citizens to engage in.

Government-provided meaning resembles an authoritarian ideology

The concern that government-provided "meaning" resembles propagating ideologies in an authoritarian style overlooks the distinction between imposing a specific worldview and offering resources for personal growth. Rather than dictating what citizens should find meaningful, it is proposed that governments create inclusive platforms that allow individuals to explore their interests, connect with others and contribute to society in ways that resonate with them. This approach acknowledges the diversity of human experience and values individual autonomy, providing tools and opportunities rather than prescribing specific beliefs or values. By doing so, governments could support citizens in finding their own paths to purpose and fulfilment, much like public libraries (with a diverse range of books) support literacy and education without imposing what people should read or learn.

Finding meaning online is dystopian and unrealistic

First, in addition to online services, governments may still provide (material) public goods to their citizens for well-being and purpose, such as the mentioned sports fields and parks. Moreover, throughout history humans have often been wary of new technologies, only to later adopt and incorporate them into daily life. It is likely that our forebears would have felt similar doubts about inventions that are now taken for granted [e.g. 15]. A possible worry is that humans might view activities in virtual worlds as meaningless. Yet, Chalmers argues that "there's no good reason to think that life in virtual reality will lack meaning and value. Nor is there reason to think its values will be limited to entertainment." [16, p.312] This indicates that virtual worlds could hold intrinsic value and significance. Therefore as further outlined below, it is argued here that digital public goods in the shape of an AI-driven virtual hyper-personalised ikigai universe are much more efficient to achieve unconditional basic meaning, while (material) public goods for well-being and purpose remain relevant.

AI-driven virtual hyper-personalised ikigai worlds

Introduction

There have been attempts to harness virtual worlds for mental health [17-19]. For example, the metaverse offers new opportunities for mental healthcare through immersive digital therapies, showing promise in addressing conditions like post-traumatic stress disorder, anxiety and attention-deficit/hyperactivity disorder. While concerns around user privacy, accessibility and long-term efficacy remain and further research is needed, the metaverse's potential lies in its ability to create tailored virtual experiences that benefit patients with various conditions.

However, the approach suggested here is much more comprehensive and has not been addressed much yet.

For example, Bostrom outlined a framework for creating meaningful human experiences in a world where automation and AI are increasingly prevalent. The framework consists of the following five components that work together to provide a rich and fulfilling life. Hedonic valence refers to the pursuit of pleasure and enjoyment. Experience texture

involves creating experiences that are aesthetically and cognitively rich. Autotelic activity engages individuals in pursuits that are valuable for their own sake. Artificial purpose involves creating meaning through intentional activities and goals. Sociocultural entanglement acknowledges the importance of external constraints and social norms in shaping human experiences and providing meaning.
Together, these five components offer a defence against the potential meaninglessness and boredom that could arise in a world where machines perform most tasks, by providing a multifaceted approach to creating fulfilling human experiences [20].

While Bostrom's approach is rather long-term-utopian, Faggella envisions for the near-term future how future AI technology will revolutionize human satisfaction by creating hyper-personalized experiences that reliably fulfil our emotional needs. Currently, our attempts to satisfy desires through offline entertainment, relaxation or companionship are unreliable and often disappointing. Faggella predicts that generative AI combined with AR and VR will create "closed reward circuits" where technology responds in real-time to our emotional states, providing more consistent satisfaction than real-world experiences. For instance, a walk in nature can be calming, but its effectiveness can be limited by unpredictable factors. In contrast, AI-generated environments and stimuli could be entirely tailored to an individual's preferences based on our feedback, creating a more consistently relaxing experience [21].

Faggella also argues that humans do not actually want the specific things they claim to desire, but rather seek the fulfilment of underlying psychological needs and drives. As AI and VR technologies advance, they will create increasingly personalized and efficient ways to satisfy human needs, eventually pulling people into individualized virtual experiences that are more compelling than real-world alternatives. Three phases across different human needs like novelty, romantic love and achievement can be distinguished. Phase 1 involves improved algorithms and AI-augmented experiences, Phase 2 includes fully immersive VR worlds with AI personalities calibrated to individual preferences, and Phase 3 features direct brain-computer interfaces that provide sustained satisfaction without the emotional ups and downs of normal human experience [22].

Description

AI-powered virtual worlds offer a unique platform for delivering unconditional basic meaning to citizens [23, 24]. These immersive environments could be designed to foster social connections, creativity and personal growth, allowing individuals to explore and discover new passions and interests. By leveraging AI-driven tools and analytics, these virtual worlds could adapt to each user's preferences and abilities, providing tailored experiences that promote a sense of purpose and fulfilment. Whether through virtual volunteering, creative expression or skill-building activities, AI-powered virtual worlds could help citizens find meaning and direction in a supportive and inclusive digital space.

Moreover, government-provided AI-powered virtual worlds would ensure equitable access to these opportunities for all citizens, regardless of their geographical location or socio-economic background. By offering a safe and welcoming environment, these virtual worlds could also help bridge social divides and promote a sense of community,

allowing citizens to connect with others who share similar interests and values. As a digital public good, AI-powered virtual worlds could become a powerful tool for governments to support citizens' well-being, creativity and personal growth.

A taxonomy of ikigai activities includes categories such as yarigai, which encompasses things worth doing, asobigai, which pertains to the value of playing, hatarakigai, which involves work worth doing, manabigai, which focuses on the value of learning, and oshiegai, which highlights the value of teaching. Each of these categories could have AI-driven virtual counterparts. For instance, virtual worlds could be designed where people can explore, learn, work or teach, thereby providing a platform for individuals to engage in activities that bring them fulfilment [23].

The potential for AI-driven hyper-personalization is a key aspect of these virtual ikigai worlds. By leveraging big data and machine learning algorithms, AI systems could identify suitable virtual ikigai activities for individuals based on their preferences and interests. Furthermore, these systems could provide accolades and social validation and adapt to user behaviour, optimizing the experience and fostering a sense of purpose and fulfilment. This hyper-personalization could lead to more effective and engaging ikigai experiences [23].

Neural interfaces

Neural interfaces are systems that enable interaction between humans and AI or IT systems by acquiring and decoding neural signals from the brain. These signals can be detected using various methods, including electroencephalography, electrocorticography, and functional near-infrared spectroscopy, which measure electrical activity or changes in blood oxygenation levels in the brain. Neural interfaces can be classified into invasive, partially invasive and non-invasive categories, depending on the level of physical contact with the brain. They can also transmit signals from the computer to the brain, enabling applications like neural stimulation or neurofeedback. By facilitating direct bi-directional communication between human brains and digital systems, neural interfaces have the potential to create more intimate and seamless interactions [e.g. 25, 26].

While it is acknowledged that neural interfaces require further development, their eventual integration with AI-powered virtual worlds could revolutionize the concept of unconditional basic meaning. Neural interfaces would allow individuals to access and engage with virtual worlds in a more intuitive and natural way, potentially unlocking new avenues for personal growth, creativity and fulfilment.

With neural interfaces, AI-powered virtual worlds could become even more tailored to individual needs and preferences. By decoding neural signals, AI systems could gain a deeper understanding of users' thoughts, emotions and intentions, allowing for more precise and effective support. This could enable virtual worlds to adapt and respond to users' needs in real-time, creating a more immersive and engaging experience.

Potential objections

Loss of privacy and autonomy

While it appears that neural interfaces could offer substantial opportunities towards human flourishing, the technology poses also significant challenges due to their ability to access knowledge and memories, raising concerns about privacy, mental freedom and autonomy. As these technologies provide direct access to brain activity, they risk compromising individuals' control over their thoughts and mental experiences. This could lead to potential misuse, including surveillance, manipulation and targeted marketing [e.g. 27] and would require regulation.

Risk of wireheading

Neural interfaces carry the risk of "wireheading," a phenomenon involving reward hacking to stimulate pleasure centres, potentially leading to addiction and manipulation [28]. This could be particularly concerning in the context of AI-powered virtual worlds, where users may become so enthralled by the seamless interaction and pleasurable experiences that they neglect their physical and social lives.

To prevent the risks associated with wireheading, it is essential to design neural interfaces and AI-powered virtual worlds with safeguards and guidelines for responsible use. This could include implementing features that monitor and limit usage, providing users with clear information about the potential risks and benefits, and incorporating mechanisms that encourage users to engage with the physical world and maintain social connections. Additionally, developers and policymakers could prioritize transparency, accountability and user-centred design to ensure that these technologies are developed and used in ways that promote human well-being.

Health

Prolonged periods spent in virtual worlds can lead to a sedentary lifestyle, potentially displacing time that would otherwise be devoted to physical exercise, healthy eating, and adequate sleep – all essential components of maintaining overall health and well-being. Striking a balance between online and offline life is crucial to mitigate these risks and ensure that individuals prioritize habits that support their physical and mental health. By finding this balance, individuals can harness the benefits of virtual worlds while also nurturing their overall physical well-being.

Sustainability

The provision and maintenance of unconditional basic meaning in the form of AI-powered virtual worlds require significant computational resources, which in turn consume substantial amounts of energy. To ensure the sustainability of these virtual worlds, it is crucial that they are powered by renewable energy sources, such as solar or wind power, rather than relying on fossil fuels. This approach would not only support the well-being of citizens but also contribute to a more environmentally sustainable future.

While it is critical to address these issues, it is advocated here for AI-driven virtual hyper-personalised ikigai worlds as a foundation for unconditional basic meaning as a digital public good.

Unconditional basic meaning as digital public good

Societies have long recognized the importance of providing basic necessities to their citizens. However, as technology advances and i-risks increase, it is time to consider a new paradigm: governments providing unconditional basic meaning in the form of AI-powered virtual worlds as a digital public good. This concept may seem futuristic, but it is worth exploring, given the timeliness and relevance of the topic as outlined above.

The idea of unconditional basic meaning builds on the concept of unconditional basic income, but instead of financial support, it focuses on providing citizens with access to immersive digital environments that foster personal growth, creativity and fulfilment. AI-powered virtual worlds could offer a wide range of experiences, from educational and therapeutic applications to social and creative pursuits. By making these worlds available as a digital public good, governments could help ensure that all citizens have the opportunity to lead meaningful and fulfilling lives.

The urgency of providing unconditional basic meaning in the form of AI-powered virtual worlds cannot be overstated. As automation and AI increasingly displace human jobs as well as other chores, many citizens are at risk of losing their sense of purpose and ikigai. Without the structure and meaning provided by traditional employment or other activities, individuals may struggle to find new ways to occupy their time, leading to a void that can be difficult to fill.

In the absence of meaningful activities, people may turn to unfulfilling and potentially detrimental pursuits, such as excessive screen time or other forms of brain rot. The risk of brain rot activities, characterized by mindless consumption and a lack of cognitive stimulation, is a pressing concern in the AI age. As citizens face an unprecedented amount of free time, they may be tempted to fill it with activities that do not challenge or engage their minds.

One of the main incentives for governments to prioritize the provision of unconditional basic meaning should be the opportunity to address inequality, a pressing issue of our time. By doing so, they can help create a more just and equitable society where everyone has access to a sense of purpose and fulfilment, regardless of their background or socioeconomic status. This could be particularly beneficial for marginalized communities, who may face significant barriers to accessing mental health services, education and other resources. This approach could be a powerful tool in reducing disparities and promoting social cohesion, ultimately leading to a more harmonious and prosperous community for all.

Governments may also consider the alternative that the corporate sector was to provide digital meaning to people through AI-powered virtual worlds. Cooperations would likely prioritize profit over individual well-being, leading to exploitation and manipulation. Corporate interests might focus on advertising, data collection and targeted marketing, undermining the potential benefits of unconditional basic meaning, including the aspect of equality.

It is essential to note that this digital public good would be optional, and nobody would be forced to use it. Everyone would be free to pursue their ikigai, or sense of purpose, in whatever way they choose, whether that is through online or offline activities. The goal is to provide a supportive environment that allows citizens to thrive, not to dictate how they should live their lives.

Quantification

As indicated, meaning is hard to capture, let alone to quantify. Yet, it should be endeavoured to evaluate attempts to provide unconditional basic meaning as digital public good. Certain dimensions for quantification are conceivable and could be further elaborated in the future.

A first dimension could be engagement quality, which can be gauged by tracking how deeply users immerse themselves in the environment—measured not merely by the number of minutes spent online but by the richness of their interactions, such as the complexity of tasks undertaken, the variety of tools they employ and the flow-state indicators derived from gaze and gesture data. A second dimension could focus on how the subjective well-being develops. Before and after a pilot, participants could, for example, complete the WHO-5 questionnaire[2], or other parameters to measure wellbeing could be explored [e.g. 29]. A third dimension may look beyond the screen, asking whether virtual experiences spill over into real life. Follow-up questionnaires would probe whether users have begun a new hobby, taken up a sport, or pursued any offline activity that originated in the digital realm. Finally, equity of access could be measured by comparing participation rates across income brackets, age groups and ability levels, striving to keep any gap between the highest and lowest quintiles below ten percent.

Quantitative results could be complemented by in-depth interviews that capture the personal narratives of meaning-making, allowing researchers to triangulate statistical findings with qualitative insights and to potentially amend the online offering.

Safeguards

Various technical, legal and institutional safeguards are conceivable. For example, on the technical side, data protection and minimization need to be considered. A legal framework could cover the rights of access as well as erasure. A pertinent act may also contain a wire-heading prevention clause that bans any system delivering direct reward stimulation without explicit, informed opt-in. Moreover, transparency should be mandated by law so that every algorithmic decision point must be auditable, and a public model ledger could record the provenance of training data. Liability for harm caused by systemic flaws would rest with the government, while private contractors would be liable only for negligence. Institutionally, the proposal could include a multi-stakeholder governance board composed of citizens, ethicists, technologists and independent regulators.

To guard against excessive immersion, the system could impose default daily time caps. These limits could be adjustable through a transparent consent interface, giving users

[2] https://www.who.int/publications/m/item/WHO-UCN-MSD-MHE-2024.01

agency over their own usage patterns. Finally, the platform could undergo continuous red-team simulations, where ethical hackers probe for vulnerabilities such as wire-heading, manipulation or data leakage, feeding any discoveries back into the safeguard pipeline.

By weaving together concrete metrics for effectiveness, an evaluation design and a comprehensive set of technical, legal and institutional safeguards, a roadmap arises for turning the philosophical idea of unconditional basic meaning into a tangible digital public good. The narrative underscores that while the concept of "meaning" remains philosophically nuanced, it may nevertheless be operationalised in ways that are observable, measurable and protectable, paving the way for governments to offer citizens a new source of purpose in an age of abundant automation.

Potential objection

Meaning in a post-labour world is very different

The described AI-driven virtual hyper-personalised ikigai worlds are not fundamentally different from traditional ikigai approaches, apart from the AI support and the virtual environment. Yet, it could be argued that a new philosophy of meaning is required to avoid a dystopia of idle minds. This philosophy must reckon with the reality that suffering and effort have historically been prerequisites for value. In a world without struggle, perhaps the ultimate task for post-labour humanity is not merely to occupy time, but to engage in meta-work—the construction of purpose itself.

However, while the notion that humanity may need to construct new forms of purpose and meaning in a post-labour world is a compelling one, it does not necessarily follow that unconditional basic meaning as a digital public good would be rendered obsolete. Not everyone is equipped to craft their own purpose from scratch. Many people benefit from structure, guidance and community, which digital public goods could provide. Additionally, the sheer amount of free time available in a post-labour world means that people may still need support covering their days with meaningful activities. By providing unconditional basic meaning, governments could help ensure that all citizens have access to resources that promote well-being, purpose and fulfilment, supplementing individual activities of philosophical introspection or self-directed purpose-building.

Governments may have several further objections to providing unconditional basic meaning as digital public good. Another concern could be the cost of developing and maintaining such virtual worlds. Others might worry about the potential for addiction or social isolation. To address these concerns, advocates could emphasize the long-term benefits of investing in citizens' well-being, such as improved mental health, as well as the potential for AI-powered virtual worlds to create a more inclusive society.

Overall, the paper aimed to provide prolegomena towards the fundamental questions whether meaning could be engineered and whether AI-driven virtual ikigai worlds would be a suitable platform due the potential of hyper-personalisation. If so, who should steward it and how this could be done with benefitting as many as possible in a fair and equal manner without eroding the very autonomy humans treasure. We believe that

unconditional basic meaning as digital public good is a promising option to consider in this regard.

Recommendations

This paper concludes with some recommendations for governments to provide unconditional basic meaning in the shape of AI-powered virtual worlds as a digital public good, taking into account that this is a novel approach:

First steps:

- **Establish a task force**: Assemble a multidisciplinary team to explore the concept of unconditional basic meaning and AI-powered virtual worlds, and to develop a plan for a pilot.
- **Engage with stakeholders**: Consult with citizens, experts and industry leaders to gather feedback and insights on the potential benefits and challenges of providing AI-powered virtual worlds as a digital public good.
- **Develop a framework for accessibility**: Identify ways to ensure that AI-powered virtual worlds are accessible to all citizens, regardless of their socio-economic background, age or ability.

Design and development:

- **Design for inclusivity and diversity**: Develop AI-powered virtual worlds that cater to diverse interests, needs and abilities, and that promote social inclusion and community building.
- **Prioritize user-centred design**: Involve citizens in the design process to ensure that the AI-powered virtual worlds meet their needs and expectations.
- **Develop AI-powered features**: Integrate AI-powered features that enable personalized and adaptive experiences, and real-time feedback.

Implementation and evaluation:

- **Pilot programs**: Launch pilot programs to test AI-powered virtual worlds and gather feedback from citizens.
- **Monitor and evaluate**: Continuously monitor and evaluate the effectiveness of AI-powered virtual worlds in promoting citizen well-being and providing unconditional basic meaning.
- **Scale up and refine**: Refine and scale up AI-powered virtual worlds based on feedback and evaluation results.

Governance and funding:

- **Establish a governance model**: Develop safeguards that ensures accountability, transparency and citizen participation in the development and management of AI-powered virtual worlds.
- **Secure funding**: Allocate funding for the development and maintenance of AI-powered virtual worlds as well as for awareness raising and training.

- **Ensure long-term sustainability**: Develop strategies to ensure the long-term sustainability of AI-powered virtual worlds, including plans for updates, maintenance, and future development.

These recommendations provide a starting point for governments to explore the potential of AI-powered virtual worlds as a digital public good and to provide unconditional basic meaning to their citizens.

References

[1] Ziesche, S., & Yampolskiy, R. (2020). Introducing the concept of ikigai to the ethics of AI and of human enhancements. In *2020 IEEE International Conference on Artificial Intelligence and Virtual Reality (AIVR)* (pp. 138-145). IEEE.

[2] Yousef, A. M. F., Alshamy, A., Tlili, A., & Metwally, A. H. S. (2025). Demystifying the new dilemma of brain rot in the digital era: A review. *Brain Sciences*, *15*(3), 283.

[3] Bauman, A., Bittman, M., & Gershuny, J. (2019). A short history of time use research; implications for public health. *BMC public health*, *19*, 1-7.

[4] United Nations Department of Economic and Social Affairs (2021). International Classification of Activities for Time-Use Statistics 2016. ST/ESA/STAT/SER.M/98

[5] Gmyrek, P., Berg, J., Kamiński, K., Konopczyński, F., Ładna, A., Nafradi, B., ... & Troszyński, M. (2025). Generative AI and jobs: A refined global index of occupational exposure (No. 140). ILO Working Paper.

[6] Thomson Reuters (2025). Future of Professionals Report 2025.

[7] Lehdonvirta V, Shi LP, Hertog E, Nagase N, Ohta Y (2023) The future(s) of unpaid work: How susceptible do experts from different backgrounds think the domestic sphere is to automation? PLoS ONE 18(2): e0281282.

[8] Charmes, J. (2015). Time use across the world: Findings of a world compilation of time use surveys. UNDP Human Development Report Office, background Paper, New York.

[9] Engeler, I., Stan, A., Trupia, M., Quoidbach, J., & Bernardino, A. (2025). What Do You Do With the Time Saved By Generative AI Tools? Many waste it, Managers Included. SSRN.

[10] Oakland, W. H. (1987). Theory of public goods. In *Handbook of public economics* (Vol. 2, pp. 485-535). Elsevier.

[11] UNDP (2023). Digital Public Goods for the SDGs.

[12] Ghatak, M., & Maniquet, F. (2019). Universal basic income: some theoretical aspects. *Annual Review of Economics*, *11*(1), 895-928.

[13] Standing, G. (2021). Basic income pilots: Uses, limitations and design principles. *Basic Income Studies*, *16*(1), 75-99.

[14] Wittgenstein, L. (1922). Tractatus logico-philosophicus.

[15] Faggella, D. (2022). Your “Dystopia” is Myopia. https://danfaggella.com/dystopia/

[16] Chalmers, D. J. (2022). Reality+: Virtual worlds and the problems of philosophy. Penguin UK.

[17] Cerasa, A., Gaggioli, A., Marino, F., Riva, G., & Pioggia, G. (2022). The promise of the metaverse in mental health: the new era of MEDverse. *Heliyon*, *8*(11).

[18] Usmani, S. S., Sharath, M., & Mehendale, M. (2022). Future of mental health in the metaverse. *General psychiatry*, *35*(4), e100825.

[19] Buragohain, D., Khichar, S., Deng, C., Meng, Y., & Chaudhary, S. (2025). Analyzing metaverse-based digital therapies, their effectiveness, and potential risks in mental healthcare. *Scientific reports*, *15*(1), 1-21.

[20] Bostrom, N. (2024). Deep utopia: Life and meaning in a solved world.

[21] Faggella, D. (2022a). Closing the Human Reward Circuit. https://danfaggella.com/reward/

[22] Faggella, D. (2022b). You Don’t Want What You Think You Want – AI and Procedurally Generated Worlds. https://emerj.com/you-dont-want-what-you-think-you-want/

[23] Ziesche, S., & Yampolskiy, R. (2025). Mapping the potential AI-driven virtual hyper-personalised ikigai universe. In Ziesche & Yampolskiy: *Considerations on the AI endgame: ethics, risks and computational frameworks* (pp. 57-70). Taylor & Francis Group, Boca Raton, New York, London.

[24] Yampolskiy, R.V. (2022). Metaverse: A Solution to the Multi-Agent Value Alignment Problem. Journal of Artificial Intelligence and Consciousness. Vol. 9, No. 3, pp. 1-11.

[25] Kawala-Sterniuk, A., Browarska, N., Al-Bakri, A., Pelc, M., Zygarlicki, J., Sidikova, M., ... & Gorzelanczyk, E. J. (2021). Summary of over fifty years with brain-computer interfaces—a review. *Brain sciences*, *11*(1), 43.

[26] Siebner, H. R., Funke, K., Aberra, A. S., Antal, A., Bestmann, S., Chen, R., ... & Ugawa, Y. (2022). Transcranial magnetic stimulation of the brain: What is stimulated?–A consensus and critical position paper. *Clinical Neurophysiology*, *140*, 59-97.

[27] Farahany, N. A. (2023). The battle for your brain: defending the right to think freely in the age of neurotechnology. St. Martin's Press.

[28] Yampolskiy, R. V. (2014). Utility function security in artificially intelligent agents. *Journal of Experimental & Theoretical Artificial Intelligence*, *26*(3), 373-389.

[29] Cooke, P. J., Melchert, T. P., & Connor, K. (2016). Measuring well-being: A review of instruments. *The Counseling Psychologist*, *44*(5), 730-757.

Acknowledgements

We thank Jeff Arle for reviewing an earlier version and for providing very useful feedback.