

Intergenerational Aspects of Artificial Intelligence (AI)

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ABSTRACT: Artificial intelligence (AI) is transforming human societies. In the many attempts to capture the novel trend of AI entering in all aspects of human life these days, hardly any research covers intergenerational aspects of AI encroaching society. Intergenerational aspects concern all features of the interaction and interrelatedness of overlapping generations. In the long-term evolution of AI, intergenerational transfers that resemble human family compounds should be considered. When analyzing the relation of AI with intergenerational human features, benefits as well as costs and risks are highlighted. As for the benefits in the interaction of AI with human beings, information storage opportunities of AI allow for more intergenerational transfers and richer communication opportunities between generations than ever before in the history of humankind. Intergenerational potentials of AI must also be evaluated with caution for AI aspects that may impose negative externalities for society. The eternally living character of AI raises questions of sustainability and the fear of crowding out humanness in the artificial age exist. Overall, AI development must be staged with a logic of cost and benefits weighting in order to ensure to harvest the upsides of AI with attention for potential downfalls and risks. All these efforts will help fostering richer and more efficient collaboration among generations but also ensure equitable, sustainable and inclusive AI development.

KEYWORDS: artificial intelligence, cultural transmission, ethics, intergenerational equity, sustainable development, workforce evolution

Introduction

The development of Artificial Intelligence (AI) represents one of the most transformative technological advancements of the 21st century. While AI's immediate impacts are currently widely monitored and studied on a broad base, its implications for the intergenerational compound in society remain underexplored. Today, AI becomes embedded in economic systems, governance, and cultural practices, which shape all intergenerational aspects of human life. Intergenerational considerations are all matters pertaining the interaction and interrelatedness of different overlapping generations. AI offers enormous potentials to improve our lives in dimensions unimaginable. This article covers the use of AI for intergenerational transfers. Positive potentials but also potential downfalls of AI in society in regard to the intergenerational compound will be discussed.

Artificial Intelligence (AI)

Artificial Intelligence (AI) is a rapidly advancing field of computer science that focuses on creating systems capable of performing tasks that typically require human intelligence. These tasks include learning, reasoning, problem-solving, perception, and language understanding. AI technologies power various applications, from virtual assistants and recommendation systems to autonomous vehicles and advanced healthcare diagnostics. By leveraging techniques like machine learning, neural networks, and natural language processing, AI continues to transform industries and enhance efficiency. While it holds immense potential to drive innovation and improve lives, AI also raises ethical concerns about bias, privacy, and the impact on employment, prompting ongoing discussions about responsible development and use. An area uncovered in contemporary academic research about AI are intergenerational aspects.

Intergenerational aspects

Intergenerational aspects are part of every society. Intergenerational considerations stem from social responsibility and future orientation. Intergenerational concerns are as old as humankind. When humans started reaching ages that allowed them to have 3 generations of one family living next to each other, solidarity and responsibility to care for each other improved more whole-roundedly. Intergenerational considerations in the academic literature are mainly concerned about the fair allocation of resources and responsibilities across generations (Puaschunder, 2017, 2018). Puaschunder (2017, 2018) highlights the importance of balancing the needs of present and future generations to ensure sustainable development and long-term societal welfare. Economic modeling underscores how economic policies, environmental conservation, and technological advancements must consider their impacts on future generations to avoid imposing undue burdens (Puaschunder, 2017, 2018). By integrating ethical considerations into decision-making, Puaschunder (2017, 2018) advocates for frameworks that promote equity in areas such as climate change mitigation, public debt management, and resource preservation, fostering a more just and sustainable world for all generations. The costs and benefits of AI for intergenerational aspects reveal the gain potential but also alert for burden and risk prevention of AI for humankind on generational aspects.

Intergenerational benefits of AI

From a simple practical point, previous human-led intergenerational care transfers could be outsourced to AI if becoming too burdensome for human beings. With an aging Western world population, often referred to as a tipping age pyramid, employing AI could help bridge the gap between a growing body of elder needing assistance. Especially in cases where help becomes necessary and burdensome, AI in combination with robotics may provide a vital 24/7 available hand in taking care of elder.

One of the peculiar revolutionary features of AI is that the technology enables the preservation of personal communication styles, thoughts, and memories by analyzing and storing vast amounts of information about an individual's conversations, writing, and digital interactions. Advanced AI systems can also be trained to mimic a person's voice, language patterns, and even their unique perspectives by processing a massive amount of data that is collected real-time on a constant basis. Big data storage capabilities have outpaced any previous information ages. This capability opens up the possibility of creating virtual avatars or "digital legacies" that allow future generations—such as great-great-great-grandchildren—to engage in lifelike conversations with ancestors who have passed away. Combined with robotics or digital holograms designed after social media footage, AI and digitalization thereby enable an interaction across many generations as never before possible.

On a large scale, these AI-driven systems could provide insights into family history, values, and advice, creating a never-before possible virtual bridge across time. Cultural transmissions would thereby preserve heritage across many generations. AI technologies – such as natural language processing and machine learning – could thereby aid in the digitization and analysis of historical texts, artifacts, and oral histories. AI-powered platforms shape contemporary culture through media personalization and algorithm-driven content curation. AI could therefore be trained to engage in a dynamic evolution of culture and a broad-based intergenerational heritage conversion tool. In combination, all these features of the digital age can ensure that cultural knowledge remains accessible to future generations and in a more tangible and interactive form than previous language would have been.

Intergenerational costs and risks of AI

While all the mentioned innovations of AI transferring information to many future generations, this practice may at the same time crowd out cultural diversity. Conveying information accurately down the generational lines may also raise concerns about filter bubbles and the erosion of shared cultural

narratives within one generation. Problematic appears that maybe time would not advance more fresher ideas, when being influenced by past knowledge creation more sophisticatedly with AI. History may repeat itself more accurately if vividly shared information educates the future. For instance, languages usually evolve over time but if AI-enhanced robotics inform with 'old' language, the capability to advance and forget vanishing cultural heritage may be limited.

In addition, there could be a bias in cultural representation. AI systems can perpetuate historical biases, influencing how cultures are portrayed to future generations. Direct influences and susceptibility of AI tools are another area of concern, e.g., when thinking about the influence social media already has on general elections, world perceptions etc. Responsible AI design must address such risks and biases to ensure accurate and equitable representation. Overall concerns also raise ethical questions about consent, data privacy, and the authenticity of posthumous interactions.

AI also raises critical intergenerational questions of resource allocations and environmental sustainability. The energy demands of AI infrastructure, such as data centers, may contribute to environmental degradation unless sustainable practices are prioritized. Especially data storage centers are rising exponentially and therefore require more and more energy. The sustainable viability of data hoarding has already been questioned and the call for finding ways to filter information for usefulness has been made.

Another risk embodied in AI concerns the autonomy of the governance of new technologies. Critical questions arise regarding who should govern AI to serve long-term global human values and interest. The conduct around AI should be regulated and practiced to be that of mutual respect in order to breed positive pro-social norms with digital worlds and artificial creatures. The cultivation of a high-road culture towards AI blending into society must also be stressed from the standpoint that AI is becoming more and more used in critical areas, such as healthcare and justice, which have enormous implications for the well-being of today's and tomorrow's world inhabitants. Uncultivated AI or robotics that are detached from human conduct norms may disproportionately affect future generations and erode general trust in democratic endeavors. Accountability mechanisms employed and models of AI learning but also curbing itself up to the point of stopping to exist by itself in case of misconduct, may help avert negative externalities of the AI revolution from early on (Puaschunder, 2019). In the environmental domain, intergenerationally-attentive governance frameworks are needed to prioritize sustainable and ethical AI development.

Discussion

Overall, AI offers advanced technology to create intergenerational transfers in a depth and breadth that is unprecedented to humankind. At the same time, AI blending into society and conserving the status-quo beyond normal human capacity may create novel and unforeseen disparities for future generations. Policies that promote controlled access to AI technology for intergenerational endeavors are critical to benefit from these innovations whilst anticipating the potential downfalls in order to be curbed and addressed foresightedly. The intergenerational impact of AI necessitates proactive collaboration among governments, industries, and civil societies.

Key recommendations include equal and controlled access to AI for intergenerational transfers that thrives an AI-driven world. Conscientious revision of AI evolutions and the right to forget history in order to design a world that is fully adaptive to the given status quo are additional AI enhancements to ensure a fruitful and intergenerationally-harmonious use of technology. Sustainable AI development may pay attention to the energy-efficiency of AI technologies. Policies to mitigate environmental harm and innovations to help curb energy-consumption of data storage are additional beneficial recommendations for future AI conduct. Imbuing inclusiveness through an international framework on open AI that incorporates the voices of diverse generations and cultures in AI development are additional recommendations to create a successful AI-experience for all. Continuous ethical review could help develop

mechanisms for an ongoing assessment of AI's societal role on intergenerational impacts. By addressing these challenges, societies can harness AI's transformative potential while safeguarding the well-being of current and future generations.

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