

Thriving AI entails deeper human-machine collaboration

PHILOSOPHY

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The launch of ChatGPT has drawn global attention, with interest erupting in several fields. Related discussions start from diverse perspectives and have given rise to different opinions. Representing a significant advancement in the development of artificial intelligence and natural language processing technology, ChatGPT has inspired deep reflection.

Just as human society began to rapidly develop upon the emergence of language, groundbreaking improvements in machines' abilities to perceive and cognitively interpret language, and resultant substantively lowered costs of content production, will also bring dramatic changes and disruptive developments to society.

These trends have prompted us to transition from a society with information explosion and surplus to knowledge explosion and surplus, and forced us to once more question a series of fundamental issues concerning human nature: What is human? What is inherent in humanness? And what is human happiness? We have to revisit ourselves, others, society, and even matters of principle to humanity. Thorough reflections on these issues will steer our social environment from a "technological society," termed by French philosopher and sociologist Jacques Ellul, to a more self-conscious humanistic environment.

Dual automation and challenges

Among arguments and commentary about ChatGPT, there are two diametrically opposite views. Some analysts regard ChatGPT as a traditional tool and overlook the humanoid nature of its functions, holding a blindly optimistic or technology-centric attitude. At the opposite end of the spectrum, some envision ChatGPT as an android with superhuman power, as described in many sci-fi movies, and ignore its original instrumentality, with excessive pessimism or fear.

The two extreme views in fact exhibit a long-standing inherited belief that humanity is completely different from instruments or that humans and machines are antagonists. The dichotomous mindset neglects the complementarity of many human and artificial intelligence strengths, and even their potential cooperative and symbiotic relationship. This false binary is a harmful narrative, lacking foresight in the intelligence era marked by thriving artificial intelligence.

Artificial intelligence, repre-

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sented by ChatGPT, has its usefulness and instrumentality, which are connected to its functions. Its growing autonomous learning and decision-making abilities embody a humanoid nature. Due to this duality, artificial intelligence breaks the traditional human-machine dichotomy and becomes a new thing, somewhere between humans and instruments. In the meantime, it poses serious challenges to ethical codes and laws and regulations formulated based on the human-machine dichotomy.

Artificial intelligence enhances the impact of the technological revolution from altering humanity's past material production formations to making a difference on humanity's intellectual production, penetrating and widening the reach from material to thought, from the hands to the brain, from the body to the mind, from physical strength to mental power, and from the visible to the invisible. Therefore, it advances the dual automation of humanity's material and intellectual production.

However, the problem is that the process of dual automation will bring many unprecedented challenges. The replacement of human labor by smart machines will extend to a broader range than physical work. Consequently, humans will be forced prematurely into a leisure society before we stop needing to work for survival, before we reassess labor education, and before we obtain personal life guarantees by investing labor time. In other words, we have not been emancipated from traditional labor forms and made full preparations yet, whether in terms of existing educational philosophy or institutional arrangements.

In addition, intellectual production's automation will invite huge challenges to traditional intellectual property, education theory, scientific research, and other fields.

Two-way intelligence enhancement

One of the effective ways to overcome challenges from the



dual automation is to create more interesting, diverse, and creative new jobs with human elements by deepening human-machine collaboration. Unlike the past, the disappearance of traditional jobs as a result of the dual automation doesn't mean that humans are reduced to auxiliary machine parts as in traditional assembly lines. Nor does it imply that humans should act as caretakers or guardians of machines like in an automated production line, still less that intelligent machines will rise to rule and suppress humanity, as imagined in science-fiction works.

It means we need to reinforce human-machine collaboration and build a new development pattern to leverage the benefits of human-machine collaboration, where the two sides jointly fulfill a range of tasks. In so doing, humans can be more creative and imaginative, and foster superior skills that they would never develop before. Meanwhile, artificial intelligence can become smarter or cleverer through interaction with humanity. As such, a new development landscape in which humans and machines continuously increase each other's intelligence will be outlined.

When an array of activities characterized by two-way enhancement of human and machine intelligence become the main force driving the development of all sectors, and even a new model of social development, the cost of human labor will be accumulated in smart products. In this light, smart products will carry common knowledge and the collective wisdom of humans and machines, while humans' dominant role in various links of smart products, such as function design, task training, and real-time interaction and learning, will be ensured. Thus, more jobs that require both humans and machines to perform their respective functions and complement each other's strengths will be created.

In these jobs, humans' status as the subject will be increasingly prominent, while human creativity and capital will be constantly unleashed, tapping into the great

benefit of artificial intelligence making humans more intelligent on a higher level.

In fact, human-machine collaboration has been successfully implemented in such fields as medical treatment (particularly surgeries), social governance, urban planning, and navigation systems, reshaping the models for medical care, governance, urban development, and smart life. The social development model featuring human-machine collaboration doesn't indicate that plants or enterprises will not need employees. It will not completely deprive humanity of jobs, nor allow machines to take over the human world.

Instead, it calls for re-expanding the scope of human skills to make smart machines a better "helping hand" to humanity. This will provide new opportunities for humans to develop superior skill-sets or productive forces that were previously impossible to attain, and open up new possibilities for humanity to divorce from traditional division of labor and create more flexible jobs. It will forge a new atmosphere for reflecting on our educational philosophy and cultivation goals to facilitate the educated group's success and carve out new paths for each of us to realize self-worth and improve our spiritual conditions.

Human-machine collaboration

To exploit advantages of human-machine collaboration, it is first necessary to actively construct a social model in line with intelligence-oriented development. In this model, we will no longer busy ourselves with catching up with industrial leaders, and learning from their advanced experience, but explore individualized development spaces through human-machine collaboration and by enhancing the degree of intelligence, to retain human control of smart products.

Second, we should consciously hold the ethical baseline for humanness, and place the research, development, and application of artificial intelligence technologies under close ethical and humanistic regulation, so that artificial intelligence will evolve for the public good and be equipped with a sense of social responsibility to serve as a cultural guide for actors along a variety of links in the process, such as developers, manufacturers, and users.

Third, attention should be paid to setting human-centered strategic goals, tailoring the education approach to each individual to establish a social system that will be conducive to humans' well-rounded development, strengthen advantages of human-machine

collaboration, and attach importance to developing skills for the collaboration, in order to create more flexible and diverse human-machine collaboration models.

In these models, material and intellectual production will be increasingly goal- and plan-oriented, scientific, and innovative. Social services will be leaner, individualized, and more professional. Our work will not be subject to temporal and geographical restrictions anymore. We will be less affected or compelled by external factors and dissidents, but enjoy more flexibility, fun, and a greater sense of achievement.

At the same time, the concept of labor will continue to extend from production and materials to creativity and spiritual enjoyment. Labor will be not merely a means of making a living, but gradually turn into what Karl Marx called the "primary need" of life. It will essentially embody humans' liberal nature and become a meaningful form for self-expression.

It is worth noting that automated knowledge production and decision-making are based on massive data. Although artificial intelligence might be more swift and reliable than human decision-making in terms of data occupation, and can provide decision-making suggestions beyond human imagination, we must guard against this perception because it neglects possible decision-making mistakes arising from technological defects unique to artificial intelligence systems, such as inherent biases and uncertainties.

Therefore, advancing the development model for human-machine collaboration also raises higher requirements for human judgment, taste, and discernment, calling on all related actors to enhance their ethical awareness, improve their humanistic qualities, and pursue development while safeguarding security.

Ethicists should broaden their considerations from constructing an ethical framework which traces the people in charge to building one that encompasses intelligence-based material systems, turning from passive, accountable technological ethics to responsible, active ethics. Legal experts need to systematically examine whether intelligent algorithmic systems or smart machines have the capacity to be a subject of law. Also, regulators should seek a whole-process ethical review mechanism to ensure the healthy operation of a society featuring human-machine collaboration.

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