INSIGHTS

Tech with Heart AI for Good

Data Pulse with AI

AI Ripples

By GONG Qian, ZHONG Jianli, LONG Yun, FANG Linlin, HE Yi & WANG Junming

Data is a significant driving force for AI development. How can we fully unleash data's potential and make AI utilize it?

In a panel discussion, "Tech with Heart, AI for Good," organized by *Science and Technology Daily*, He Guangxi, director at the Institute of International Science and Technology Relations, Chinese Academy of Science and Technology for Development, and Professor Gao Shaolin from Peking University Law and AI Research Center, shared their insights on AI and its association with new quality productive forces, big data and data regulation.

AI drives new quality productive forces

The conversation, hosted by Wu Baojun from the University of Chinese Academy of Sciences, kicked off with the exploration of the buzzword — new quality productive forces. He said that it is a driving force rooted in sci-tech innovation, playing a crucial role in promoting higher-level and higher-quality development of the social economy.

Gao explained the buzzword from the perspective of the three elements of productivity: the workers, the tools of labor, and the object of labor. Taking new quality productive forces into consideration, the workers are not the traditional ones engaged in hard manual labor but those who have mastered the latest science and technology. The labor tools are empowered by new generation information technology and AI technology, and the object of labor is also empowered with science and technology.

In this way, new quality productive forces are transforming traditional productive forces with new technologies, and AI is a key factor in this transformation, Gao said.

He added that AI is a significant part of sci-tech innovation and a likely area for breakthroughs. Meanwhile, other elements like new materials and new energy may also drive the development of new quality productive forces.

Data as cornerstone of AI development

The development of AI is driven by a so-called troika of computing power, algorithms and data.

He made a comparison to explain their importance. Computing power is the fuel, like oil or coal that provides energy, while algorithm is the production technology or method. "Then data is the raw material in the manufacturing industry," He said. "Without raw materials, you can't create new things."

Gao said the concept of data has evolved from simple numbers to the underlying carrier of information in the digital age thanks to the advancement of technology. Since humans entered the digital age, all information is recorded and predicted in the form of zero and one by electronic computers.

"So now, when we talk about data, we must make an appropriate distinction between data and information," Gao said.

Gao referred to the assisted driving system (ADS) to explain the significance of big data. The ADS requires a vast amount of data, including vehicle operation data, road traffic safety law data, meteorological data and environmental data. "Without data, no matter how good the algorithm is, there won't be an ADS," Gao said.

Proactive data policies to drive AI

However, the development of AI and the use of data face many challenges. AI's huge appetite for data may lead to a shortage of real-world data by 2028, and the exploration of synthetic data raises concerns about data quality, He said. Synthetic data might eventually lead to a self-reinforcing loop or self-pollution of data.

Additionally, there are other pressing issues such as the unavailability of industry data, and data from government departments and public sectors, as well as data security and data sovereignty.

Gao described how China has been proactive in formulating policies to address these issues. For example, the National People's Congress enacted the *Data Security Law*, which emphasizes the hierarchical and classified management of data. The law states that data should be classified into different categories, including governmental data, business data and personal data. From a security perspective, data is divided into risk-free, low-risk and high-risk categories. The law stipulates different protection requirements for each category.

The State Council of China issued the *Twenty Data Measures* to promote the development of data elements, clarifying three rights related to data ownership: the ownership of data resources, the right to process and use data and the right to operate data products.

The Ministry of Finance also issued a regulation, allowing data to be recognized as an asset and to be recorded in companies' balance sheets. "This has greatly stimulated the enthusiasm of businesses to process and use data to create data products," Gao said. Moreover, two new documents have been released to promote cross-border data flow. They are the *Regulations on Promoting and Regulating the Cross-border Data Flow*, and *Regulation on Promoting Data Trading*.

Seeking balance between data privacy and AI development

The right to privacy and privacy concepts differ not only between different countries but also across different cultures. He said in recent years, the development of AI and digital technologies has led to a massive increase in collecting data. Therefore, more people are concerned about this issue.

China has made significant progress in striking a balance between personal privacy protection and AI innovation. Besides the Civil Code, the *Personal Information Protection Law* was enacted to define the scope of personal information.

To better protect personal privacy, Gao proposed establishing a trust system. This means entrusting personal information to a professional institution that has the capability to process it. Any access to the personal data must be approved by this institution, and the institution, trusted by many people, can negotiate contracts with App developers.

Only through a combination of technology and human effort can personal information be effectively protected. If this method works, it would create an effective path for protecting personal information, Gao said.

Both experts emphasized the importance of AI's role in the development of new quality productive forces and the need to balance data utilization and privacy protection. They also expressed confidence in China's ability to navigate the challenges and lead in the new wave of technological revolution.

◄ For further information about the program, please scan the QR code.

AI an Inclusive Tool for Global Development

By GONG Qian

Around 60 countries, including China, signed the *Statement on Inclusive and Sustainable Artificial Intelligence for People and the Planet* at the AI Action Summit in Paris, which concluded on February 11. The declaration outlined six main priorities, including "Ensuring AI is open, inclusive, transparent, ethical, safe, secure and trustworthy" and "Reinforcing international cooperation to promote coordination in international governance."

Notably, the U.S. and the UK refused to sign the international declaration. In his speech at the Summit, the U.S. Vice President JD Vance emphasized his administration's concerns about excessive regulation stifling innovation in the AI sector, warning that stringent regulations could "kill a transformative industry." The UK government cited concerns about national security and "global governance" as reasons not to sign.

Predictably, the two countries' decision triggered criticism. According to *The Guardian*, Andrew Dudfield, the head of AI at Full Fact, said the UK risked "undercutting its hard-won credibility as a world leader for safe, ethical and trustworthy AI innovation."

The refusals signal that if countries pursue their own AI agendas, the fragmentation of the international community is likely to intensify. The summit, to some extent, seemed to be a competition, with some countries vying for AI leadership.

Vance's speech makes it clear that the U.S. intends to strengthen its dominant position in the global AI race, after he said that his country "will ensure that American AI technology continues to be the gold standard worldwide," and confirming the U.S. plans to retain its leadership profile position.

In her speech, European Commission President Ursula von der Leyen stated, "We want Europe to be one of the leading AI continents." Adding to her assertion, she said that, "Too often I hear that Europe is late to the race where the U.S. or China have already gotten ahead...I disagree, because the AI race is far from being over ... Global leadership is still up for grabs."

France viewed the summit as a key opportunity to spur AI investment in Europe, and establish Europe as a major player — not only as a leading regulator — in the global race, *The New York Times (NYT)* reported. French President Emmanuel Macron's priority is "ensuring that Europe does not fall behind the United States and China by overregulating its development," according to *NYT*.

However, AI should not be treated as a tool of unilateralism, but rather a new engine for global development. Every nation and its people should become not just users, but active participants in the AI revolution.

As major powers shed light on their ambitious goals in the global AI race, China sees benefiting humanity as its standpoint. Chinese Vice Premier Zhang Guoqing emphasized that the international community should work together to advocate the principle of AI for good, deepen cooperation on innovation, strengthen the inclusive development of AI for the benefit of all, improve global governance and jointly build a community with a shared future for mankind.

China contributed to solutions of challenges facing AI, by putting forward the *Global Initiative for AI Governance in 2023*, and proposing a resolution entitled "Enhancing International Cooperation on Capacity-building of AI" which was adopted at the UN General Assembly in 2024.

At the Paris AI Action summit, Chinese AI start-up DeepSeek was on everyone's lips. "DeepSeek has shown that all countries can be part of AI, which wasn't obvious before," Clément Delangue, the French-born chief executive of AI development company Hugging Face, told *NYT*.

UN Secretary-General Antonio Guterres called for greater collaboration to ensure that AI furthers sustainable development and does not widen inequalities. "We must all work together so that AI can bridge the gap between developed and developing countries — not widen it," he said.
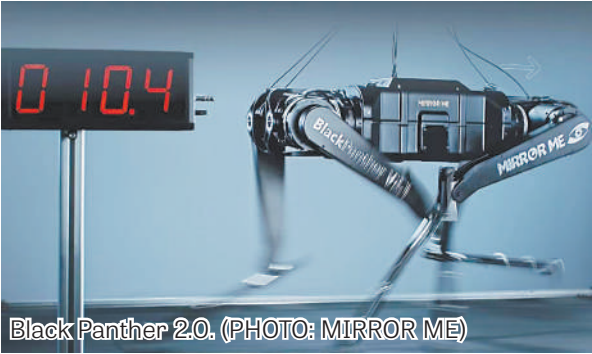

Robot Dog Runs at Rapid 10m/s

Hi-Tech

By GONG Qian

Black Panther 2.0. (PHOTO: MIRROR ME)

A Chinese research team has recently unveiled a quadruped robot named Black Panther 2.0 that can run at a stable speed of 10 meters per second, equivalent to the speed of a top 100-meter sprinter. This makes it one of the world's fastest quadruped robots.

The Black Panther 2.0 weighs 38 kg and stands 0.63 meters tall. By integrating high-precision sensors, advanced control algorithms, and lightweight materials, the robot has not only achieved a major leap in speed but also excelled in stability and adaptability.

The research team drew inspiration from animals such as black panthers and jerboas to enhance the robot's high-speed movement in terms of strength, power, precision, flexibility and fluidity. These efforts enabled Black Panther 2.0 to achieve incredible speed and power while maintaining a compact size.

The Black Panther has been under development since 2018 and in early experiments, when the robot was tested, its maximum speed was limited to six meters per second. Exceeding this speed would cause its lower legs to break.

To address the challenge, the team developed carbon-fiber shins inspired by the limbs of the jerboa desert rodent, which increased stiffness by 135 percent with only a 16 percent increase in weight.

A significant innovation in the Black Panther 2.0 is the addition of springs between its knee joints. This allows it to move in a way similar to humans, with each step providing a cushioning effect. This cushioning not only reduces the impact on the robot's structure but also improves energy transmission.

A side event hosted by Chinese institutions during the 2025 Paris AI Action Summit, on February 11. (COURTESY PHOTO)

Sci-tech Resolves Dam Crack Dilemma

This kind of structure makes the dam subject to many constraints, so that the temperature change is easy to cause cracks to Appear.

"Traditional concrete crack prevention methods are almost ineffective. The low temperature causes the concrete to freeze quickly, seriously affecting the overall quality of the dam," said Zhong Fulin, one of Du's assistants.

After numerous tests and discussions, they produced an imaginative solution to build a controlled temperature area in the dam.

Zhong explained that in order to control temperature, they introduced Inflated Membrane Structure technology, which sprayed polyurethane, a coating material, on the upstream and downstream dam surfaces, and laid plastic films on the deck and cross peak surfaces to effectively maintain a wet environment. They also set up three layers of "insulation blankets" and added heating facilities such as hot heaters to ensure that the concrete can maintain a suitable temperature after pouring.

Self-monitoring operation

Other technologies are also needed to ensure that cracks don't appear in the dam.

"In the past, we relied on our experience to control the temperature, which is time-consuming and not accurate," said Liu Qiang, executive director of the Yebatan Branch.

Now, they rely on the intelligent temperature-control system to set up a "monitor" for the dam, which improves the efficiency of temperature control. The system can monitor the temperature change inside the dam in real-time. Once an anomaly is detected, it responds quickly and adjusts the state of the facility to ensure that the concrete that has been poured is always at the optimal temperature.

Besides, monitoring is also applied to the intelligent management of engineering construction. Through real-time integration of data, it realizes intelligent monitoring of the whole process from concrete production to vibration operation. In addition, it has set up a one-click operation and unmanned control of the grouting operation.

"These technologies allow the dam to remain crack free in extreme weather conditions," said Liu.

China Promotes Digital Cooperation Among SCO Peers

By sharing technology and experience, China is helping other SCO members to improve their digital infrastructure, narrow the digital divide, and ensure that all of them can enjoy the opportunities brought by digital economy.

China has invested in the China-Kyrgyzstan-Uzbekistan cross-border optical fiber cable and China-Russia data channel as well as helped construct them, which has reduced regional network latency by 40 percent and significantly improved data transmission efficiency.

In terms of digital technologies and innovation, the cooperation involves AI, the Internet of Things and blockchain, which has enhanced the digital innovation capabilities of member countries and promoted the wide application of digital technologies in industry, transportation, agriculture, health, education and energy.

In terms of digital trade and e-commerce, the China-SCO Local Economic and Trade Cooperation Demonstration Area has built a cross-border e-commerce ecosystem, and launched a "Silk Road E-commerce" comprehensive service base to facilitate cross-border settlements and customs clearance.

In cybersecurity, the bloc has strengthened cooperation on digital security to ensure regional security and development, and deal with new security threats such as cross-border data leakage and cyber terrorism.