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Chinese university unveils new AI model for agriculture

15 October 2025 | News

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China Agricultural University (CAU) launched Shennong Large Model 3.0 on at the 2025 World Agrifood Innovation Conference (WAFI 2025) in Beijing, signaling a major step toward making AI more accessible and practical for use in agriculture.

According to Wang Yaojun, lead researcher at CAU, a key achievement is that this new model not only reduces computational demands substantially but also boosts performance by 5 % compared to the original version. He added that the model's architecture had been comprehensively redesigned to strike an optimal balance between being lightweight and delivering high performance.

This latest release builds upon critical groundwork laid by earlier versions. Shennong 1.0 established core agricultural knowledge and question-answering capabilities, while Shennong 2.0 introduced multimodal functions and expanded the model's applications across the agricultural sector. The model is named in honor of Shennong, a revered figure in Chinese mythology known as the "Divine Farmer," who is credited with teaching ancient Chinese people agricultural practices and the use of medicinal herbs.

Alongside the large model, the team also released an agent platform. This platform fosters a lightweight, deployable and collaborative AI ecosystem that covers the entire agricultural chain, offering 36 specialized agents organized into six categories including smart breeding, planting and farming.

"These agents are designed for 36 distinct agricultural scenarios and can be integrated with agricultural machinery and sensors to enhance intelligent agricultural production," Wang said.

He noted that pilot programs have already been deployed in several areas surrounding Beijing, as well as in north China's Inner Mongolia Autonomous Region and northeast China's Heilongjiang Province, providing localized services such as plant protection and customized guidance throughout the cultivation process.

The launch of Shennong Large Model 3.0 signals the arrival of a new phase in agricultural AI -- one characterized by high efficiency, user-friendliness and technological self-reliance, thereby laying a solid foundation for the future of smart agriculture, Wang added.

Since its inception in 2023, the Shennong Large Model has been trained on an extensive and specialized agricultural dataset, integrating over 10 million agricultural knowledge graphs, 50 million records of modern agricultural production data and 20,000 agricultural monographs.

WAFI 2025, being held from Oct. 12 to 14, has gathered about 780 experts from home and abroad -- serving as a world-class platform dedicated to advancing global agrifood innovation.