

China's shoestring AI humiliates US and could undermine Trump

DeepSeek is a cheaply built artificial intelligence language model which outperforms American versions in some measures

A Chinese AI model built on a shoestring budget has shocked Silicon Valley and presented a major challenge to Donald Trump.

DeepSeek, a language model that can generate human-like conversation, was released on the same day as Mr Trump's inauguration.

It has since been tested against some of America's most powerful AI (artificial intelligence) models, such as chatGPT, and in some cases has come out on top.

Experts warned that the breakthrough was a "wake-up call to America", which has been battling to prevent China competing at the top level of an AI arms race.

Concerns have also been raised that DeepSeek has built-in censorship and refuses to answer sensitive political questions about China and Xi Jinping, the country's leader.

Shortly after his inauguration, Mr Trump announced a \$500 billion (£400 billion) AI investment project, dubbed "Stargate", in co-operation with US firms including OpenAI, which created ChatGPT.

DeepSeek's new model comes despite a plan by Joe Biden's administration to hamper China's AI capabilities, in hopes of denying it the political influence and military supremacy which could come from being the first to achieve what is known as superintelligence.

DeepSeek said it had taken just two months and less than \$6 million (£4.8 million) to build a model more advanced than many of its Western competitors.

It was developed as a side project by a maverick hedge fund manager who invested heavily in Nvidia, one America's most sophisticated makers of the computer chips that are crucial for AI models.

Liang Wenfeng reportedly has close links to the Chinese Communist Party.

Mr Trump placed America's ambition to become the "world capital of artificial intelligence" at the centre of his inauguration last week, reserving the front row at the Capitol Rotunda for tech billionaires developing AI.

On the same day, DeepSeek released its breakthrough R1 open source language model to little fanfare. Wenfeng's start-up appeared to have immediately and unexpectedly closed the gap with the US and publicly thwarted the US government's attempts to stifle Chinese innovation.

"Deepseek R1 is one of the most amazing and impressive breakthroughs I've ever seen," warned Marc Andreessen, the Silicon Valley venture capitalist who has been advising Mr Trump.

DeepSeek claimed to have used 2,048 second-rate Nvidia H800 chips and \$5.6 million (£4.5 million) to build what is known as a reasoning-focused model.

For comparison, Mark Zuckerberg's Meta used 16,000 first-class Nvidia H100 chips to build its Llama 3.1 model.

In an interview with Time magazine earlier this year, Dario Amodei, chief executive of the Amazon-backed AI developer Anthropic, estimated the cost of building a frontier model in 2024 as \$1 billion (£800 million), with the next generation costing closer to \$10 billion (£8 billion).

Yet DeepSeek outperformed Meta and Anthropic's model, as well as OpenAI's ChatGPT-4o, in some benchmarks such as accuracy, coding and complex problem-solving.

"DeepSeek is a wake-up call for America," Alexandr Wang, chief executive of San Francisco-based Scale AI, said, calling for the US to innovate faster and tighten export controls on chips.

Mr Wang, who attended Mr Trump's inauguration and previously secured a \$250 million (£200 million) defence contract, took out a whole page advertisement in The Washington Post last week imploring the president to "win the AI war".

"DeepSeek ... is the top-performing, or roughly on a par with the best American models," he warned in an interview with CNBC, adding his belief that China had obtained thousands of first-class chips despite export bans.

Mr Biden curtailed exports of the best chips for training AI models to block China from competing with the US. Yet Mr Wang believes thousands of first-class chips still found their way to China.

(609 words)

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