



China takes top spot in tech race

LineShine has surpassed its US counterparts in the Top500 supercomputer rankings.
Mathures Paul reports

The Chinese supercomputer is around 22 per cent faster than the one in second place — El Capitan, based at the Lawrence Livermore National Laboratory in California, US. China's LineShine differs from other high-performance computers in that it runs entirely on conventional computer chips (CPUs), instead of the graphics processors (GPUs) commonly used for AI.

"LineShine is the first system to cross two exaflops using a CPU-only design. That is a real achievement. But it proves a workaround for classical scientific computing, not for training frontier AI," says Srinivas L., joint MD and joint CEO, 63SATS Cybertech. The company, headquartered in Mumbai, offers advanced cybersecurity solutions.

Design may point to a better way to blend artificial intelligence with traditional scientific tasks, said Jack Dongarra, who has been involved with the Top500 list since its founding in 1993.

Scientists involved in the Top500 project said LineShine managed 2.198 exaflop/s, meaning it can perform more than 2 quintillion calculations per second. El Capitan drops to number two but is otherwise unchanged at 1.809 Exaflop/s.

The news comes at a time when the technological race between China and the US is heating up. US tech giants such as OpenAI, Anthropic and Google now have some of the world's most developed AI models, while Nvidia remains the world's dominant supplier of AI chips. China too is innovating — DeepSeek, for example, released a cutting-edge AI model last year using fewer specialised AI chips.

The question is, if state-linked actors gain access to supercomputer-class compute, will that meaningfully change the threat model for cracking encryption, running brute-force attacks or training offensive AI models at scale?

"On encryption, modern symmetric standards like AES 256 are simply not threatened by faster classical machines. The genuine cryp-

tographic threat is quantum, which is a separate race entirely," said Srinivas.

To slow the momentum of the Chinese tech industry, US President Donald Trump has imposed tariffs as well as limits on AI chip exports. Yet China's use of standard microprocessors or CPUs rather than GPUs to build an ultrafast supercomputer shows a potential way around such speed bumps.

A Chinese machine first topped the rankings in 2010 but China stopped participating in 2023, until Line-

Shine's entry brought it back this year.

On the Top500 list, second to fourth place are dominated by US systems, while Germany's JUPITER Booster

(1.000 Exaflop/s) takes fifth. China's National Supercomputing Centre said in a statement that LineShine is "the result of breakthroughs across a series of core technological bottlenecks".

LineShine has been used for applications related to climate modelling and engineering simulations for drug discovery and neuroscience.

Does a story like LineShine change anything in the day-to-day work of a cybersecurity expert when it comes to threat modelling, or is this still mostly a nation-state and policy-level story that has yet to trickle down to enterprise risk?

Says Srinivas, "A supercomputer in Shenzhen is not your Monday problem. Your real adversaries — ransomware crews, business email compromise operators, credential thieves — are not bottlenecked on exaflops; they live off unpatched systems, weak identity and human error. This story belongs on the strategic horizon, and there are two takeaways. First, start the post quantum migration clock now, because crypto migrations take years and the harvest now, decrypt later risk is genuinely worth preempting. Second, assume the cost of AI-enabled attacks keeps falling, which means phishing resistant MFA, ruthless patch discipline and detection that does not depend on a human reading every alert. LineShine is a flag on the geopolitical map, not a fire alarm in the enterprise SOC."

