Rose Dixon | 05/14/2025

Someone Experimented With A 1997 Processor And Showed That Just 128 MB Of RAM Is Enough To Harness The Power Of AI.

HOME IMPROVEMENT

While artificial intelligence seems to be the preserve of ultra-powerful machines, a recent demonstration proves otherwise. Researchers have managed to run a modern AI model on a 1997 computer with a simple Pentium II processor and 128 MB of RAM. This experiment calls into question our certainties about the hardware requirements of AI and paves the way for unprecedented technological democratisation.

A Technical Feat: Running Modern AI On Obsolete Hardware

The feat was achieved by EXO Labs, a company founded by Andrej Karpathy, a well-known figure in the field of artificial intelligence, together with researchers from Oxford University. Using a cutting-edge technical approach, they managed to run a language model based on Llama 2 on an Intel Pentium II processor running at just 350 MHz, backed up by 128 MB of RAM. A hardware environment that, at first glance, seems quite inadequate for the demands of contemporary AI.

And yet the model managed to run at a respectable rate of 39.31 tokens per second, using just 260,000 parameters. This remarkable result is due to the use of BitNet, a revolutionary new neural network architecture. Unlike traditional float32 models, BitNet uses ternary weights, where each weight has only three possible values (-1, 0, 1). This simplification allows extreme compression of the model without any significant loss of performance.

Thanks to BitNet, a model that is usually 7 billion parameters in size can be reduced to just 1.38 GB. This makes it possible to run it on modest processors, without the assistance of high-end graphics cards. According to EXO Labs, this technology could even make it possible to run models with 100 billion parameters on a single CPU, achieving processing speeds close to those of human reading. This experiment not only proves the viability of AI models on limited platforms, it also underlines the crucial importance of algorithmic optimisation over and above the sheer raw power of hardware.

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Towards A Sustainable And Inclusive Democratisation Of Artificial Intelligence

Beyond the technical prowess, this demonstration has major societal implications. One of the main obstacles to the mass adoption of AI is often its cost, both in terms of equipment and energy consumption. If solutions like BitNet make it possible to run advanced models on existing or older generation hardware, then access to AI could extend far beyond research labs and technology companies. In developing countries,

where modern computing resources are sometimes scarce and expensive, this approach could open up new opportunities. Schools, health centres or small businesses could use AI for education, diagnosis or economic optimisation, without needing to invest heavily in state-of-the-art infrastructure.

What's more, from an ecological point of view, reusing old equipment for advanced tasks would limit the production of electronic waste and reduce the carbon footprint associated with the manufacture of new equipment. This is in line with the principles of sustainability that are increasingly being sought in current technology policies. Finally, this breakthrough illustrates a paradigm shift: the future of artificial intelligence does not depend solely on the continuous increase in hardware performance. It also relies on software ingenuity and on innovations that enable us to do "more with less". This paves the way for AI that is more responsible, more inclusive and less elitist.

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