Why Nvidia plays a big role in the AI/ML industry

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Since the launch of ChatGPT in the year 2022, there has been a massive wave in the tech industry. Countless chatbots have been released which not only pertains to simple question and answer model but also in machines generating images, videos, audios and more. Day by day venture capitals are investing in companies dealing with AI and ML to ride the trend. I visited the Samsung Developers conference in 2024, and every stall had AI attached to it. But what is truly powering the AI and ML advancements we see today? How are billions of prompts being answered every day? In this op-ed I aim to explain to you how a mere GPU company called Nvidia is playing a pivotal role in the AI market.

Nvidia was founded way back in 1993 and their initial focus was on GPUs for video games. Years went by and they slowly started shifting towards professional GPUs which could be used in visual computing and not only gaming. ChatGPT might have been released in 2022, but the rise of ML and AI had started way back in 2010. This is when Nvidia saw the opportunity to shift its focus since ML and Deep Learning rely on 2 things, data and computational power which luckily happens to be one of the things that GPUs are good at with their ability to do parallel processing. Which means that the growing demand for all AI models fuels the surge in the need for more and more GPUs.

As the demand increased, we could see a sharp increase in Nvidia market share. Their GPU became essential in training machine learning models and AI algorithms. This not only lead to the stock price of Nvidia going up by a staggering 1700% in the last 5 years but also lead to 8 out of 10 Nvidia employees being millionaires. Their GPUs power some of the most advanced AI systems in the world right now. Nvidia's success is a reflection of growing dependence between AI and the hardware that is enabling it.

While Nvidia dominated the hardware market for the good part of the last decade, recently a breakthrough seemed to have taken place in China. A small lesser-known startup developed an AI model that didn't need massive hardware, and it outperformed all the current AI models by a landslide. They are also open source, which means the upcoming AI models will no longer need power-hungry GPUs to train large scale models as they will now focus more on optimized software and efficient algorithms. This raised a big question in the AI market regarding the long-held belief that the key to a better AI was more hardware. This could be considered a big win for smaller companies which can't invest tens of thousands of dollars on expensive GPUs for their AI needs, instead they will now focus on efficient software and algorithms.

As for Nvidia's future, they seemed to take a hit in their stock prices since the release of deep seeks model, nonetheless they will remain to be top dogs in the AI hardware market and are being placed in the trillion-dollar market evaluation according to some estimates. As Sam Altman quoted Napoleon "A revolution can be neither made nor stopped. The only thing that can be done is for one of several of its children to give it a direction by dint of victories". One thing I can say with confidence is that the future of AI is more diversified ecosystem than people thought as the

software and hardware are coupled and the underdogs will offer new and disruptive models, and the only step forward will be innovation. The future of AI will most likely be defined by efficient software, cutting edge hardware that will inevitably enable great breakthroughs.

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