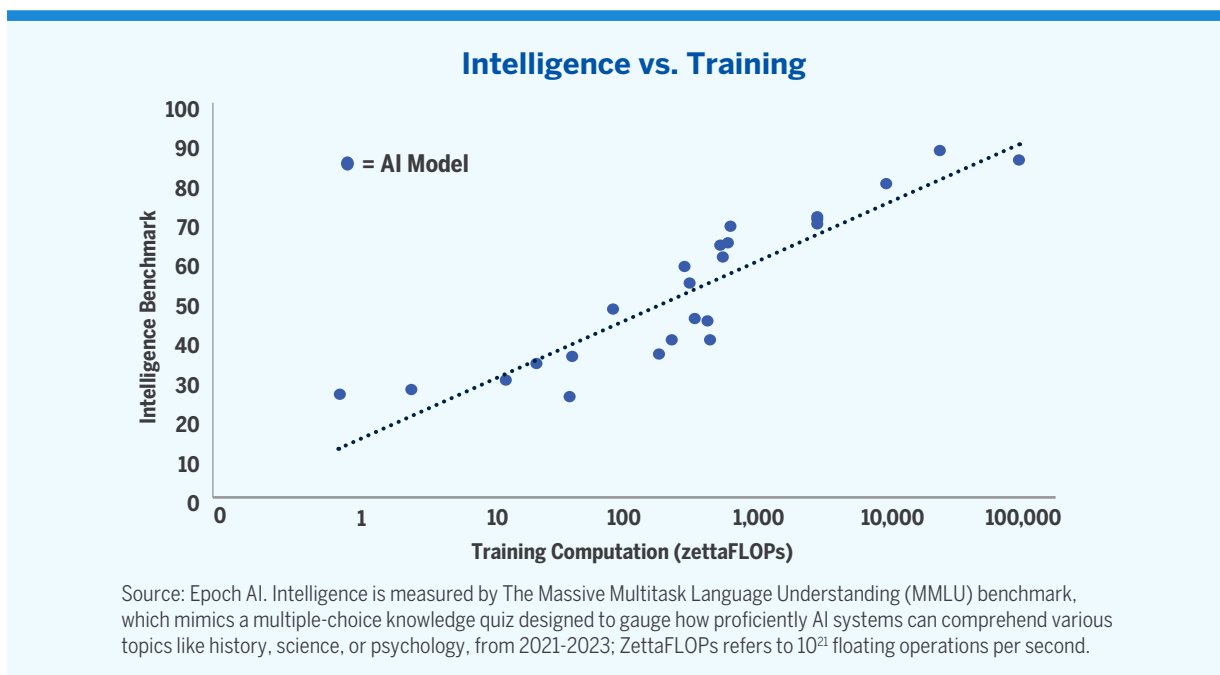




## Scaling Up Intelligence

Artificial intelligence (AI) models are progressing at an unprecedented pace (see [Beyond Moore's Law](#)), fueled by advancements in training techniques, as well as massive datasets and computational scaling. Yet what exactly does AI training involve, and will it continue to elevate their capabilities?



- Much like a runner preparing for a marathon, AI models undergo intensive training involving supervised and unsupervised learning. Unsupervised learning enables models to independently discover patterns and relationships in unlabeled data, while supervised learning aids models with labeled data to achieve specific outcomes (e.g., email spam filters). For this training to occur, an enormous amount of data is processed using networked GPUs to generate trillions of parameters that help models interpret and generate content.
- Historically, there has been a positive correlation between AI intelligence and training computation, as shown in the chart above. This empirical relationship is sometimes referred to as AI “scaling laws.” Given that AI models are likely to be trained on larger datasets with more computational power over the next couple of years, we believe that if these scaling “laws” hold, these models will become much smarter. In fact, Nvidia CEO Jensen Huang recently said that “foundation model pre-training scaling is intact and it’s continuing” and went on to mention that AI post-training scaling is also helping AI models become smarter.<sup>1</sup>
- As AI models become more capable, we believe their usefulness to companies and individuals will grow, providing a better return on investment for those adopting AI solutions. In our view, this could benefit not only the [AI adopters](#) but also the providers of the necessary infrastructure –the [AI enablers](#).

<sup>1</sup> Nvidia, Corp. 3Q 2024 Earnings Call.

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Epoch AI is a research-focused organization that investigates the trajectory, impact, and governance of artificial intelligence (AI). It analyzes trends in machine learning, AI automation, and related economic factors, providing data-driven insights and tools to inform policymakers and stakeholders about the future of AI development. The company also publishes research and offers interactive models to foster informed discussions about AI's societal implications.

The following positions represent firm wide assets under management as of September 30, 2024: Nvidia Corp., 8.5%.

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