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**The Future Of AI: 5 Things To Expect In The Next 10 Years**

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**There has been no better time to be in the world of artificial intelligence than now. AI has achieved an inflection point and is poised to transform every industry. Much has already been written about specific applications of AI. In this article, I take a step back to consider how artificial intelligence is poised to fundamentally restructure broader swaths of our economy and society over the next decade with five bold predictions that are informed by my expertise and immersion in the field.**

**1. AI and ML will transform the scientific method.**

**Important science—think large-scale clinical trials or building particle colliders—is expensive and time-consuming. In recent decades there has been considerable, well-deserved concern about**[**scientific progress slowing down**](https://deliverypdf.ssrn.com/delivery.php?ID=860065085009089110088100099010107073058016039023044067109085005111072006078006080025025031037030005038045121019004086105016000114023070069004118124119021073025107120067028060027080099007086117069077069096022088106075030119078101064088070021074081065127&EXT=pdf&INDEX=TRUE)**. Scientists may no longer be experiencing the golden age of discovery.**

**With AI and machine learning (ML), we can expect to see orders of magnitude of improvement in what can be accomplished. There's a certain set of ideas that humans can computationally explore. There’s a broader set of ideas that humans with computerscan address. And there’s a much bigger set of ideas that humans with computers, plus AI, can successfully tackle. AI enables an unprecedented ability to analyze enormous data sets and computationally discover complex relationships and patterns. AI, augmenting human intelligence, is primed to transform the scientific research process, unleashing a new golden age of scientific discovery in the coming years.**

**2. AI will become a pillar of foreign policy.**

**We are likely to see serious government investment in AI. U.S. Secretary of Defense Lloyd J. Austin III has**[**publicly embraced**](https://www.defense.gov/News/Transcripts/Transcript/Article/2692943/secretary-of-defense-austin-remarks-at-the-global-emerging-technology-summit-of/)**the importance of partnering with innovative AI technology companies to maintain and strengthen global U.S. competitiveness.**

**The National Security Commission on Artificial Intelligence has created**[**detailed recommendations**](https://www.nscai.gov/wp-content/uploads/2021/03/Full-Report-Digital-1.pdf)**, concluding that the U.S. government needs to greatly accelerate AI innovation. There’s little doubt that AI will be imperative to the continuing economic resilience and geopolitical leadership of the United States.**

**3. AI will enable next-gen consumer experiences.**

**Next-generation consumer experiences like the metaverse and cryptocurrencies have garnered much buzz. These experiences and others like them will be critically enabled by AI. The metaverse is inherently an AI problem because humans lack the sort of perception needed to overlay digital objects on physical contexts or to understand the range of human actions and their corresponding effects in a metaverse setting.**

**More and more of our life takes place at the intersection of the world of bits and the world of atoms. AI algorithms have the potential to learn much more quickly in a digital world (e.g.,**[**virtual driving**](https://news.mit.edu/2020/system-trains-driverless-cars-simulations-0323#:~:text=A%20simulation%20system%20invented%20at,before%20cruising%20down%20real%20streets.)**to train autonomous vehicles). These are natural catalysts for AI to bridge the feedback loops between the digital and physical realms. For instance, blockchain, cryptocurrency and distributed finance, at their core, are all about integrating frictionless capitalism into the economy. But to make this vision real, distributed applications and smart contracts will require a deeper understanding of how capital activities interact with the real world, which is an AI and ML problem.**

**4. Addressing the climate crisis will require AI.**

**As a society we have much to do in mitigating the socioeconomic threats posed by climate change. Carbon pricing policies, still in their infancy, are of**[**questionable effectiveness**](https://iopscience.iop.org/article/10.1088/1748-9326/abdae9/meta)**.**

**Many promising emerging ideas require AI to be feasible. One potential new approach involves prediction markets powered by AI that can tie policy to impact, taking a holistic view of environmental information and interdependence. This would likely be powered by digital "twin Earth" simulations that would require staggering amounts of real-time data and computation to detect nuanced trends imperceptible to human senses. Other new technologies such as carbon dioxide sequestration cannot succeed without AI-powered risk modeling, downstream effect prediction and the ability to anticipate unintended consequences.**

**5. AI will enable truly personalized medicine.**

**Personalized medicine has been an aspiration since the decoding of the human genome. But tragically it remains an aspiration. One compelling emerging application of AI involves synthesizing individualized therapies for patients. Moreover, AI has the potential to one day synthesize and predict personalized treatment modalities in near real-time—no clinical trials required.**

**Simply put, AI is uniquely suited to construct and analyze "digital twin" rubrics of individual biology and is able to do so in the context of the communities an individual lives in. The human body is mind-boggling in its complexity, and it is shocking how little we know about**[**how drugs work**](https://www.washingtonpost.com/news/wonk/wp/2015/07/23/one-big-myth-about-medicine-we-know-how-drugs-work/)**(paywall). Without AI, it is impossible to make sense of the massive datasets from an individual’s physiology, let alone the effects on individual health outcomes from environment, lifestyle and diet. AI solutions have the potential not only to improve the state of the art in healthcare, but also to play a major role in reducing persistent health inequities.**

**Final Thoughts**

**The applications of artificial intelligence are likely to impact critical facets of our economy and society over the coming decade. We are in the early innings of what many credible experts view as the most promising era in technology innovation and value creation for the foreseeable future.**

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