

White Paper Report

The Evolution of Artificial Intelligence



What would an AI white paper be without an AI-generated masthead? The image above was created in Midjourney, using the prompt: ***“/imagine Synthesis of Minds: Unraveling the Cognitive Threads in ChatGPT AI, man thinking with mountains and data in background, abstract machinery, steampunk style --ar 16:5”***.

Technology has been disrupting our society for centuries. Innovation and free capitalism inspire the evolution of technological advancements in this country. These advancements have changed the way we transport ourselves, the way we listen to music, watch television, the way we shop, the way we communicate, store information and at every turn it has often been accompanied by some level of fear and hesitancy.

The recent frenzy around artificial intelligence (AI) is bringing forth similar emotions. It has been called the biggest “risk to extinction” and an “existential threat to humanity.” It is being blamed for job cuts and even being used by criminals. However, it is also estimated to drastically improve the efficiency of humans and machines and can be a revolutionary advancement in healthcare. How will AI evolve and change our lives? It is still too early to tell. However, in this white paper we want to explain the origins of AI, explain why AI is in the spotlight now, how it is impacting financial markets and how it can change society in a positive way.

What is AI?

Artificial intelligence is not new. It has been around for decades with the idea that computer systems can simulate human intellectual processes.¹ The history of AI can be drawn back to the early 1940s when mathematicians, philosophers and neuroscientists developed the idea that computers can mimic the process of formal reasoning and create an electronic

brain.² Over the following decades AI experienced several booms and busts. Scientists overcame many failures and AI has evolved into what we use today. The world was first able to comprehend the capabilities of AI in the late 1950s when IBM aired, on television, a computer program that played checkers (i.e., Samuel's Checkers Playing Program).

Why is AI in the Spotlight Now?

To answer this question, I went right to the source:

ChatGPT is a large language model developed by OpenAI, based on the GPT-3.5 architecture. Trained on a wide range of text sources, it can understand and generate human-like responses in natural language. ChatGPT utilizes a combination of machine learning techniques and vast amounts of data to provide conversational assistance, answer questions, and engage in dialogue on various topics. Its responses are generated based on patterns and information learned during training. However, please note that while ChatGPT strives to provide accurate and helpful information, it may not always have access to the most up-to-date news or developments.

That paragraph is an example of what the ChatGPT language-based model delivered when I asked it to summarize ChatGPT. ChatGPT was founded in December

2015, but it took until November 2022 for an early demo to be released.³ Quickly the founding company, OpenAI, catapulted to an estimated net worth of ~\$30 billion.⁴ ChatGPT, a language based "chatbot", is expected to make things like writing essays, resumes, solving math problems (step by step), writing music, preparing for job interviews and even writing jokes easier and more efficient.⁵

As with most technological advancements, the race is on for other tech companies to develop their own language-based model. Google is working to advance their version called Google Bard. Microsoft has invested \$10 billion into OpenAI and even created their own AI feature for word, PowerPoint and excel called Copilot.⁶ No company wants to be left behind in the face of such a powerful disrupter to their business.

How Has the AI Craze Impacted Financial Markets?

What we have seen this year is the dangerous pattern when investors let the fear of missing out (aka FOMO) override disciplined due diligence. Since AI is associated with technology, the tech heavy NASDAQ has outperformed the Dow Jones Industrial Average by over 25% year to date (Chart 1). In the S&P 500, the companies that are perceived to be advancing AI or directly involved with AI are making up ~80% of the S&P 500 total return this year (Chart 2 – next page). Valuations (i.e., P/E next 12 months) of these companies are well above the price to earnings multiple of the S&P 500. In some instances, over 200% higher than the S&P 500 PE (Chart 3 – next page). This seems eerily like the dotcom bubble. While

the bursting of the dotcom bubble was due to companies that saw valuations skyrocket while earnings were nonexistent, that does not mean even the best of the best companies did not see their market cap deteriorate. For example, Oracle (which happens to also be associated with AI today) saw its stock price drop ~85% in 2001 and did not make a new record high for 16 years. Microsoft fell 65% in 2001 and did not recover until 2016. This reminds us that even the best of the best can drop sharply once investors realize that the market is not following fundamentals and valuations and instead is artificially propping up companies with the fear of missing out on a new technological advancement.

Chart 1

Technology Surging on AI Optimism

Data is as of June 21, 2023. Source: Bloomberg Finance LP, Verdense Capital Advisors.

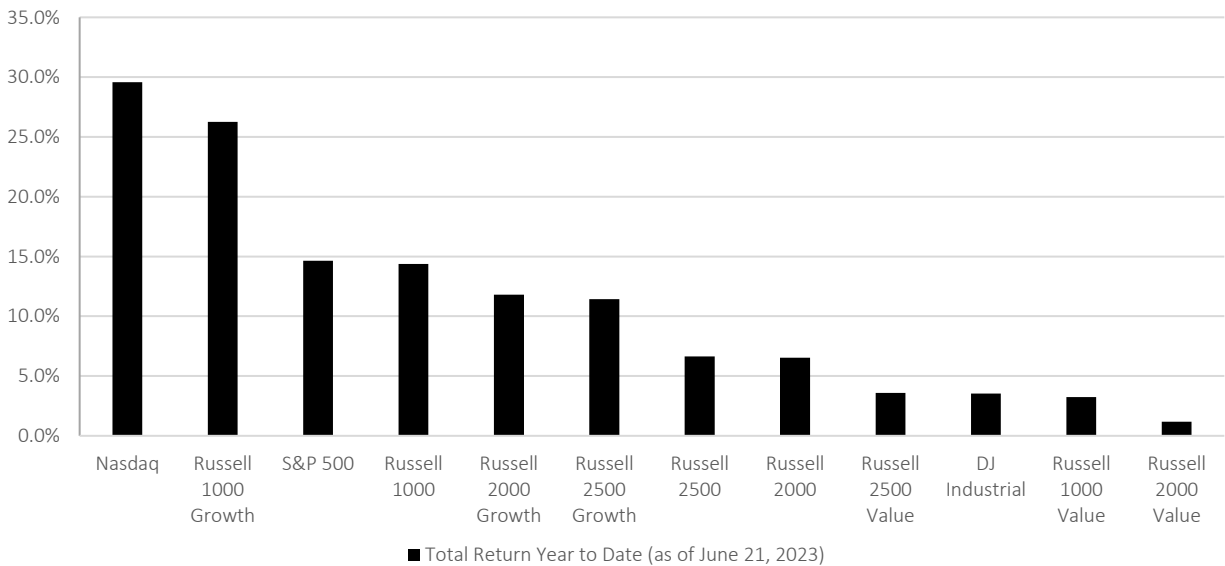


Chart 2

AI Making Up Nearly All of the Equity Rally

Data is as of June 20, 2023. Source: Bloomberg Finance LP, Verdense Capital Advisors.

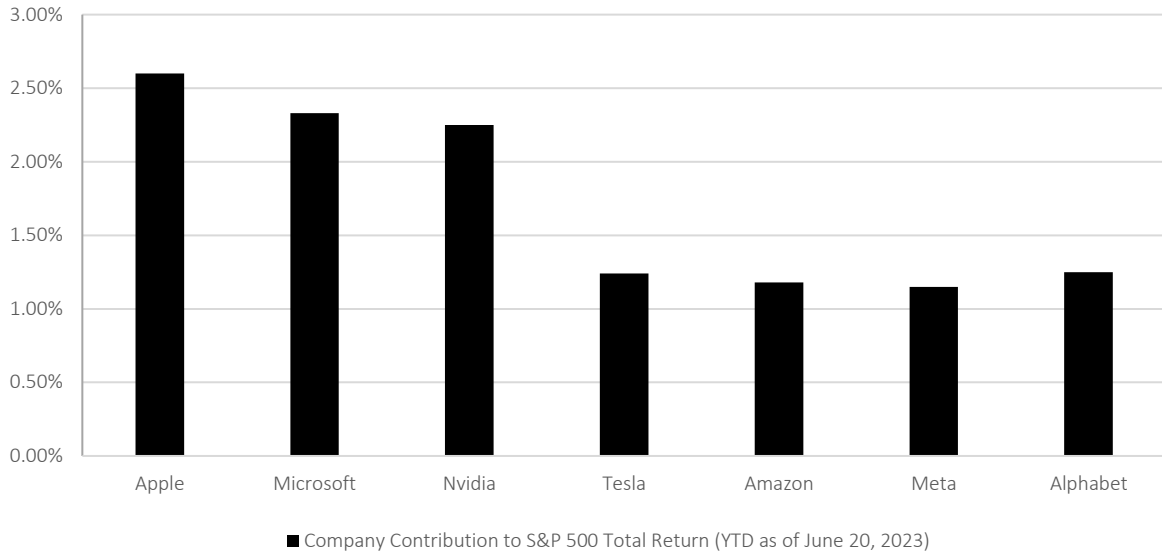
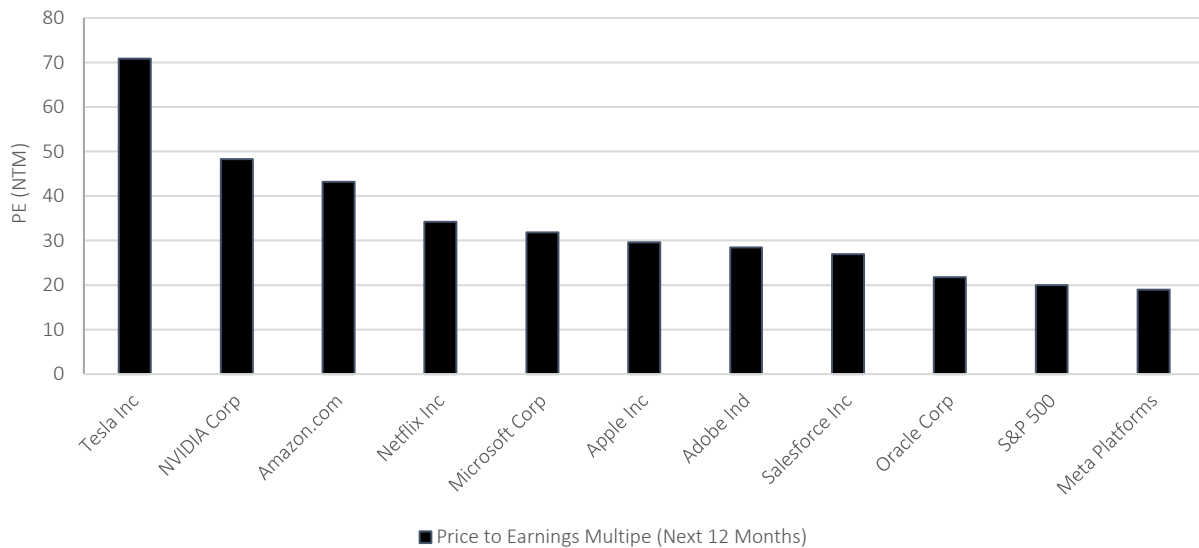


Chart 3

AI Stocks are Expensive

Data is as of June 22, 2023. To 10 stocks in Global X Funds Global X Artificial Intelligence & Technology ETF. Source: Bloomberg Finance LP, Verdense Capital Advisors.



How Much Can AI Disrupt Society?

We find the comments that this is an “existential threat to humanity” excessively pessimistic. Instead, we will focus on what we know now. Regarding ChatGPT, while it has many appealing characteristics, it also has its fair share of flaws. It requires human input. Not only a human to ask questions but data to be on the internet, that has also been created by humans. It has been referred to as Google on steroids.⁷ It has been proven to deliver information that is not factual. In addition, ChatGPT has limited history if you seek historical data.

However, AI is not just ChatGPT, AI is much bigger than just language-based models. AI is increasing the efficiency of writing emails and research papers through auto fill sentences, advancing the way we use facial recognition, it is used in the production of self-driving cars, it can transform the security and surveillance industry, it can assist with making appointments with human like phone calls. The healthcare industry may be the biggest

beneficiary of AI. A computer can sift through multiple different labs and test results and diagnose diseases and come up with treatment options much faster than a human can. The same thing goes for medical advancements. Currently, a potential new drug can take years to develop and be very costly, whereas AI may be able to reduce that time. The result could be more effective drugs and at cheaper prices.⁸

The fear that is emerging is around the elimination of jobs due to AI. Yes, some jobs will disappear. We have already seen fewer checkout employees as retailers adopt self-checkout. I recently had a robot deliver my food at a restaurant. We can even have Alexa make grocery lists for us for things we didn't even know we needed. However, remember that in the instance of ChatGPT, it is only as good as the command that a human gives it. In addition, throughout most advances in AI, there is a human judgment component to avoid false deliverables.

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Our View

AI is already here. Whether you know it or not, AI is a part of our daily lives. AI makes accessing your phone easier, makes recommendations about shows you may like on Netflix, adds personal safety features to our smart watches. Even speech recognition can help send ads about items we just discussed with a friend. With AI, it is important to be aware of what is evolving. Yes, there will be job disruption, but it may also provide unique opportunities. At Verdense, we are monitoring how we

can increase the efficiency of some menial tasks so that we can free up more time to enhance personal relationships with our clients. When it comes to investing in AI, at this point everyone is chasing technology companies. However, we will be looking at companies and sectors that are investing in AI to make their businesses more efficient and ultimately improve their earnings. As always, we will monitor this evolving trend in technology and look for ways that our clients may benefit.



Write a 50-word poem for our summer finance intern. Tell him how much we appreciate him and his haircut.



To our summer intern, we raise our voice,
Your finance skills, we highly rejoice.
But not just that, we must declare,
Your stylish haircut, it's beyond compare.
We appreciate your hard work, both numbers and style,
You've made our team shine with a cheerful smile.



If you have any questions or comments, please feel free to reach out to your financial advisor.

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1. <https://sdsclub.com/21st-century-ai-biggest-achievements/#:~:text=Some%20of%20the%20Artificial%20Intelligence,aspects%20of%20their%20daily%20lives>
2. https://en.wikipedia.org/wiki/Symbolic_artificial_intelligence
3. <https://www.forbes.com/sites/bernardmarr/2023/05/19/a-short-history-of-chatgpt-how-we-got-to-where-we-are-today/?sh=909d4ff674f1>
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5. <https://www.makeuseof.com/things-you-can-do-with-chatgpt/>
6. <https://www.cnbc.com/2023/03/16/microsoft-to-improve-office-365-with-chatgpt-like-generative-ai-tech-.html>
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8. <https://sdsclub.com/21st-century-ai-biggest-achievements/#:~:text=Some%20of%20the%20Artificial%20Intelligence,aspects%20of%20their%20daily%20lives>

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