

Artificial Intelligence (AI) Technology: World Changing or Ending?

AI, what is it and what's changed?

AI has been a conversation in the academic community since the 1950s when Alan Turing published a paper in which he proposed the 'Turing Test'. This test was designed to determine if a machine could exhibit intelligent behaviour indistinguishable from human behaviour. This concept has been slowly developing for decades, but progress made in the last 12 months in the guise of AI has consumed the market and global news feeds. In general terms, what has changed is the ability to connect the underlying technology with human language, creating an interface that is widely accessible to consumers. This has allowed Chat GPT to demonstrate to the world the power of AI even though it has been in our lives for years in the form of Tesla Autopilot and packaging distribution centre software! The leaps and bounds made in hardware matched with the software developments has revolutionised the amount of data that can be processed, this combined with the public accessibility has created an explosion of innovation and public awareness.

Chat GPT is the core development at the forefront of media attention, known as an Open Language model, which is trained on extensive datasets of text and code. Open Language models are a specific type of narrow AI, that excels in tech generation and question answering. They can generate text, translating languages, creating various forms of creative content, and providing informative answers to questions.

However, they do come with drawbacks as they are predictive models, which are great with text and code but aren't designed to handle more in-depth understanding of topics or maths beyond simple addition or subtraction. In contrast, General AI products do encompass abilities such as reasoning, understanding, and learning across different domains. Although still in the early stages of development, General-purpose AI would possess the capacity to learn and adapt to new situations, solving problems that are currently beyond the capabilities of narrow Open Language AI.

In broad terms, there has been significant advancement in the emergence of deep learning, a form of machine learning utilising artificial neural networks, to gain insights from extensive datasets. Deep learning has played a pivotal role in various recent AI breakthroughs, including the development of self-driving vehicles and speech recognition software. At the same time, hardware development from companies creating GPUs are delivering processing data speeds that were considered to be unthinkable a decade ago. This has led the market movements of those companies, such as Nvidia, that are the gold standard setters and have dominant market share.

Another development benefiting AI technology is the growing quantity of processable data. Every day, a huge amount of data is created, around 94 zettabytes globally in 2022. To give you an idea, a regular computer's hard drive stores about 0.5 to 1 terabyte of data. This means that in just a year, we generated enough data to fill about 94 billion computer hard drives. This plentiful data is super important for teaching AI models and making them stronger
and more capable than ever.

Regrettably, AI can now craft highly realistic deep fake videos, making fictional content almost indistinguishable to the untrained eye. A recent instance involved Martin Lewis, a famous financial expert, who, in a manipulated video, seemingly endorsed a bogus Elon Musk-backed investment. Thus, fraudulent videos, even when detected promptly, could profoundly affect people's actions and even their finances. These apparently genuine interviews are a growing concern.

How can AI change the world in 2023?

It is all well and good hearing the term AI being thrown around and constantly hearing the justification 'AI will change the world'. But the real question people want answered is "how it will change the world?" What tangible changes and real-life impacts should everyday people expect to see from this development? Below are some areas that could see and benefit from AI integration:

Healthcare: Development of new treatments for diseases, diagnosis of conditions more accurately, and providing personalised care to patients. For example, AI-powered chatbots are being used to answer patient questions and provide support, with AI-powered medical imaging systems being used to detect cancer and other diseases earlier.

Education: AI could be used to personalise learning, provide feedback, and assess student progress. For example, the development of AI-powered tutors could provide one-on-one instruction, along with AI-powered grading systems that provide feedback on student work.

Customer Service: AI is being used to automate customer service tasks, such as answering questions and resolving issues. For example, there are companies out there using AI-powered chatbots to answer customer questions 24/7 and more effectively triage customer issues to see if a real person would be better placed to deal with the problem.

Retail: AI is being used to personalise shopping experiences, recommend products, and optimise inventory. For example, AI-powered recommender systems can suggest products that customers are likely to be interested in, and AI-powered inventory management systems can track inventory levels and optimise orders.

Drawbacks and opportunities

Investing in AI tech offers numerous benefits, yet limitations exist. A major one is data demands; AI models need substantial datasets for training. While global data production grows, it's not solely public data. Smaller companies might face challenges due to limited data access, unlike giants like Google. Additionally, hardware accessibility poses a major hurdle for AI adoption in all sectors. While AI's potential is vast, hardware, like Nvidia GPUs, is essential.
Nvidia dominates GPU production, but chip shortages limit supply, risking a supply-demand imbalance.

This disruption could slow tech progress. If Nvidia loses its hardware edge, competitors gain, potentially leading to broad software accessibility and compatibility efforts in the battle to keep customers.

Regulating a new and unknown technology is difficult, as policymakers fail to understand even the most basic technologies. This is something we saw when the US Congress questioned Mark Zuckerberg about Facebook and Shou Zi Chew about TikTok. AI models can be perplexing to comprehend, which can make it challenging to understand how they make decisions. This can be a problem for regulators and policymakers, as they need to be able to understand how AI systems work to ensure that they are fair and safe… nobody wants a real-life Ex Machina situation. Challenges can arise from human created bias or skewed samples of data, as AI can learn socioeconomic, political, and racial biases from the dataset it is trained on. AI models can then exhibit unfair or
incorrect decisions due to biases, a critical concern fields like customer service, and healthcare.

The risks of investing in AI technology are the same risks seen historically when investing in a new technology or concept. There is no debate that AI will change the world, for good or bad, the world we live in will forever be different thanks to new technologies. The debate however comes in the form of when, where and who. When will it proliferate through the sectors that lend themselves naturally to AI, where will it happen first and finally who will be leading? The core focus of this tech rally has been the producers of the technology, but some thought must be given to the sectors and companies that will be adopting it into their everyday business processes.

Amidst risks like potential bubbles and overhype, underdelivering companies, AI investment also holds out the promise of rewards. High returns and a vast market potential exist. Investors embracing risk could gain if AI progresses as anticipated. Yet, unpredictability from sources like regulations or sudden tech shifts poses uncertainties. Weighing pros and cons, AI appears a solid investment, demanding careful company research. At TAM, we're integrating this opportunity into portfolios while minimizing risks for investor returns and downside protection.

AI even helped check this investment note!