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WHERE IS ARTIFICIAL INTELLIGENCE GOING?

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Abstract: Artificial intelligence (AI) is the ability of a machine to mimic human functions such as reasoning, learning, planning and creativity. AI enables technical systems to perceive the environment in which they operate, process this perception and solve problems, acting to achieve a particular goal. The computer receives data (either already prepared or collected via its own sensors, such as a camera), processes it and reacts. AI systems are able to adapt their behaviour to some extent, analysing the effects of previous actions and operating autonomously.

Keywords: *The limits of artificial intelligence, powerful computers, how can artificial intelligence be dangerous, employment and artificial intelligence, potential future applications.*

Rezumat: Inteligența artificială (IA) este capacitatea unei mașini de a imita funcțiile umane, cum ar fi raționamentul, învățarea, planificarea și creativitatea. AI permite sistemelor tehnice să perceapă mediul în care operează, să proceseze această percepție și să rezolve probleme, acționând pentru a atinge un anumit scop. Calculatorul primește date (fie deja pregătite, fie colectate prin intermediul propriilor senzori, cum ar fi o cameră), le prelucrează și reacționează. Sistemele AI sunt capabile să își adapteze comportamentul într-o oarecare măsură, analizând efectele acțiunilor anterioare și funcționând autonom.

Cuvinte cheie: *limitele inteligenței artificiale, computere puternice, cum poate fi periculoasă inteligența artificială, angajare și inteligență artificială, potențiale aplicații viitoare.*

1. Introduction

In recent quarters, fears of a slowdown in the economy have somewhat dampened business growth rates, forcing the company to cut jobs. In the short term, customers are indeed optimising their costs. Many of them are tightening their belts and we are working with them to help them optimise their environment. But we are not seeing a slowdown in the commitments companies are making to migrate the next wave of workflows from their servers to the cloud [1].

Setting up an international body to oversee the non-proliferation of the most dangerous AI systems promises to take a long time. However, more prosaic work is already

needed to provide a framework for this technology as it exists today, with a number of burning issues to be resolved.

The success of ChatGPT itself puts the human back at the centre. Its rise is not just due to advances in deep learning, the size of its training corpus or the dizzying number of parameters: this tool was forged by learning and reinforcement with human feedback. Months of human annotation were required to ensure the consistency of the results. The human reinforcement built into ChatGPT's architecture takes several forms, including training stages on a database of annotated human queries collected since 2020, and reward system loops that penalise text generations judged to be more or less inappropriate by the annotators [2].

Finally, the fightback is being organised to detect texts generated by an AI. The GPTZero online service, for example, is preparing a dedicated offer for education professionals, and OpenAI is working on a "statistical watermark" applied when text is generated. Cheaters be warned.

Regulating artificial intelligence (AI) is no longer an option. It is a necessity. The spectacular success of the chatbot ChatGPT, launched at the end of 2022 by the company OpenAI, has given the general public a taste of the range of possibilities offered by this technology.... for better or for worse. One of the main merits of the initiative has been to accelerate awareness of the imperative need to establish a framework for the development of AI. The question now is what form this regulation should take and how it can be applied at global level [1-3].

2. ChatGPT

ChatGPT is attracting a lot of attention in the professional world, from businesses to the self-employed, all of whom see it as a way of boosting their productivity. And yet, AI is still in its infancy and has come a long way in just a few months! The possibilities seem to be multiplying, particularly with the release of GPT-4, a more reliable and accurate version of the language model that powers the chatbot, and the integration of plug-ins into ChatGPT. Productivity tools are already undergoing changes: Microsoft has announced the arrival of the Copilot assistant for its Microsoft 365 suite, Google is preparing to add an intelligent assistant to its Workplace suite, and even Canva is continuing to integrate more and more AI into its tools via the Canva Visual Suite [4].

AI is gradually creeping into the world of work and seems destined to eliminate many of today's jobs. According to a survey by *ResumeBuilder, reported by Fortune*, 25% of companies have already replaced employees with ChatGPT - as in the case of the media company CNet, for example. It's a real revolution for service sector jobs, just as industrialisation was for manual professions, and one that will particularly affect Europe and the United States. So what changes can we expect?

3. Employment and AI: a revolution for the service sector

In a blog post, Bill Gates calls it the most revolutionary technological advance since the *graphical user interface* (GUI) was introduced in 1980. "The development of artificial intelligence is as fundamental as the creation of the microprocessor, the personal computer, the Internet and the mobile phone. It will change the way people work, learn, travel, treat themselves and communicate with each other," he says. For the first time in the history of technological innovation, it is the so-called "intellectual" professions that will be most

affected. This change has been studied by a number of specialists, who are trying to predict the impact that this technology could have on the employment sector in the years to come [5].

Will photography generated by artificial intelligence algorithms, with its hybridisation and recombination of millions of pixels from source images, be a creative tool in a future virtual pact? Or will it open the door to the worst plagiarism and unfair competition on a massive scale?

4. Breaking a lance for humans

Artificial intelligence producing artists is the latest spectacular development in the field of AI. This raises fears and expectations. But what are the limits of what artificial intelligence is capable of?

Artificial intelligence is becoming more and more important in everyday life. AI was also widely used at the last World Cup in Qatar. More than 15,000 cameras were deployed around the eight football stadiums to predict and prevent dangerous crowds and possible mass panic. Likewise, video surveillance helped referees make tricky decisions. The footballs themselves were equipped with sensors that input the position of the balls five hundred times a second [6].

After artificial intelligence was not yet a topic after the turn of the millennium, its development picked up considerably in the 2010s. Great progress was made in autonomous driving, in the diagnosis of illnesses, in the coordination of processes, in logistics and finally AI was also able to beat the reigning world champion in the game of Go, a task that had been considered impossible only a short time before.

5. Powerful computers as a prerequisite

However, all these successes are based on the fact that modern computers can process a huge amount of data - and not least because of this, a huge amount of new data is constantly being generated that is reused by the computers using algorithms. That's what's behind Big Data. In fact, however, a learning and analysing AI is completely "stupid". In order to understand what a cat is, the AI has to be fed with millions of cat pictures, whereas a small child very quickly understands what a cat is [7].

6. In the sense of a learning process

Good examples of how large amounts of data can be optimally used and maintained thanks to AI are provided by the B2B platforms "who delivers what" and euro-pages. The platforms offer a large amount of information to bring commercial buyers together with the right products and services. As the carrier of the two platforms, the company *Visable* uses AI programmes to maintain the data (for example to provide keywords for the data search or to eliminate data duplicates. This requires the availability of high-quality data. After all, data quantity is not the same as data quality. For data collection, *Visable* has started to use artificial intelligence to identify relevant data as such - in the sense of a learning process via intelligent algorithms [5-7].

Artificial intelligence thus works comparatively inefficiently. It does not succeed in distinguishing between relevant and irrelevant data on the basis of a so-called low level of prior knowledge. Artificial intelligence has no knowledge in this sense and does not know what knowledge is. It only operates with data. *AlphaGo*, which beats the Go world champion, does not know what Go is, nor that it is a game, and does not know any emotions

and mental states associated with a game such as adaptation, fascination or the joy of victory [8,9].

7. The fightback is getting organised

ChatGPT can help with the first draft when you're faced with a blank sheet of paper, but after that you still have to write and give it a style. ChatGPT partly reverses the teaching philosophy. This time, the students themselves have to question the machine. It's an opportunity for us to see how the students carry out the tasks we give them, to get them to work on fact-checking, and to check that the bibliographical references generated are correct. Banning the tool is "counter-productive" in any case, as it reinforces students' desire to use it. As with the arrival of Wikipedia and search engines, the challenge for teachers is to "experiment with the limits" of these tools [10-11].

8. Great Britain initiative

British Prime Minister Rishi Sunak's initiative on Thursday 8 June 2023 to organise the first global summit on AI in the UK within the next few months shows that this is no longer just a technological issue, but a highly political one. Taking advantage of a meeting with US President Joe Biden, Mr Sunak is making a date to avoid finding himself isolated at a time when, each in their own way, the *European Union* (EU) and the United States are expressing their desire to regulate AI.

A regulation is due to be adopted by the European Parliament, before being the subject of negotiations with the *Council of the EU* and the *European Commission* with a view to reaching a consensus in a few months' time. At this stage, the American approach is more limited, focusing on corporate responsibility [9-12].

9. Current uses of artificial intelligence

We tried to have a philosophical discussion with a chatbot; we talked about how human beings can preserve their autonomy, their independence, at a time when artificial intelligence is becoming ever more powerful. ChatGPT used relevant concepts such as human dignity, transparency and fairness. However this is far from a deep philosophical dialogue. ChatGPT hasn't really positioned itself, but we're using it in the AI [13-15].

The most recent AI models are causing upheavals on a mythological scale. We cannot be content with small adaptations; we must change the way we create, compete, collaborate, learn, govern and deceive, commit crimes and wage war.

10. Jobs at risk?

Tech companies are investing heavily in AI development, and Google alone has 20 AI-powered projects in the pipeline for 2023 alone. This comes on the cusp of recent mass layoffs from Amazon (27,000), Meta (21,000), and Google's parent company, Alphabet (12,000) [16].

Do these numbers signal increased job losses in favor of developing advanced AI in the near future? Possibly—the idea of automated systems to handle monotonous workloads or entire projects isn't out of the question. We've done it time and time again for centuries. Where would we be without the industrial revolution, the development of vaccines, and the technological advances that place computers in our pockets?

So, is it possible for engineers to be replaced by AI-driven systems? Yes, but it's not likely to happen any time soon. According to a 2016 report from *Stanford University*, there's

no imminent threat of workers being replaced, but rather AI will be developed to provide useful apps to help those workers. Although routine work and simple tasks may be automated, there's enormous potential to benefit engineers in every field [17].

Those with a STEM [(*Sciences, Technology, Engineering, and Mathematics*), is centred on education in these disciplines] background will still be in high demand, and many jobs will require human/computer collaboration. Software engineers will be needed to create and test AI systems, and advanced AI will allow engineers to become more efficient and solve a wide range of issues. That said, only time will tell if AI will replace the engineering job pools or be used as an invaluable tool to assist in project creation [15-17].

11. Artificial intelligence: low-intensity threats

Exploiting bias: taking advantage of existing biases in algorithms, for example YouTube recommendations to channel viewers or Google rankings, to improve product profiles or denigrate competitors.

Robot burglars: using small autonomous robots that slip into letterboxes or windows to retrieve keys or open doors. The damage is potentially low, as it is very localized on a small scale [17-19].

Blocking detection by AI: thwarting the sorting and collection of data by AI in order to erase evidence or conceal criminal information (e.g. pornography).

Fake reviews written by AI: generate fake reviews on sites such as *Amazon* or *TripAdvisor* to harm or favor a product.

AI-assisted tracking: using machine learning systems to track an individual's location and activity. Counterfeiting: making fake content, such as paintings or music, that can be sold under false authorship. The potential for harm is relatively low, as there are few known paintings or music.

12. Conclusions

AI means many things to different people. Currently, AI is used for information and automation and has minimal learning capabilities. We are many years away from a fully self-aware AI program. All levels of AI carry risk. The primary AI programs are mainly a risk to skilled labor. Higher-level AI could post real dangers to humanity. The benefits of AI continue to grow, which will ensure that the technology is here to stay. Businesses and society as a whole will need to learn to use the new technology and make adjustments. Companies will need to incorporate AI to remain competitive, and workers may need to change their skill set to retain employment. As AI technology continues to evolve, questions concerning issues such as legal liabilities will continue to surface. Private investment in AI has soared while investment concentration has intensified:

Private investment in AI in 2021 was approximately $93.5 billion, more than double total private investment. investment in 2020, while the number of newly funded AI companies continues to decline, from 1051 companies in 2019 and 762 companies in 2020 to 746 companies in 2021. In 2020, there were 4 funding rounds worth $500 million or more; in 2021, there were 15. The US and China dominated transnational AI collaborations: Despite rising geopolitical tensions, the US and China recorded the highest number of collaborations in AI publications from 2010 to 2021, up five-fold since 2010. Collaboration between the two countries produced 2.7 times more publications than between the UK and China - the second highest on the list. In other areas it is hard to measure performance when there has not been significant progress, like in commonsense reasoning.

In 2021, China continued to lead the world in the number of AI journals, conferences and repositories published (63.2% more than the US). The US held a dominant lead in terms of number of conferences and references on AI citations. Chinese tech giant Alibaba has launched an artificial intelligence tool that can generate images from text, CNBC reports.

Tongyi Wanxiang allows users to enter requests in Chinese and English, and the AI tool will generate an image in different styles, such as a sketch or a 3D cartoon. Alibaba's cloud division, which launched the product, said it is available to enterprise customers in China for beta testing. Tongyi Wanxiang is Alibaba's latest generative artificial intelligence offering, as tech giants in China and the US look to advance the technology.

Generative AI refers to a type of artificial intelligence that is able to generate content based on requests. It is trained on huge amounts of data to be able to do this. The most famous example is OpenAI's ChatGPT, which has sparked a race from the biggest players in tech to develop their own chatbots.

In the US, Google launched its AI chatbot called Bard. And in China, Baidu launched Ernie Bot and Alibaba launched Tongyi Qianwen. There are already AI text-to-picture services available at the moment. From 2010 to 2021, collaboration between educational and non-profit organisations produced the largest number of publications on AI, followed by collaboration between private companies and educational institutions and between educational and government institutions. The number of AI patents filed in 2021 is more than 30 times higher than in 2015 (annual growth rate of 76.9%).

For most machine learning specialists, the problem today is not the lack of research, tools or new techniques, but the fact that they can't keep up with all these advances!

Conflicts of Interest: The author declares no conflict of interest.

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