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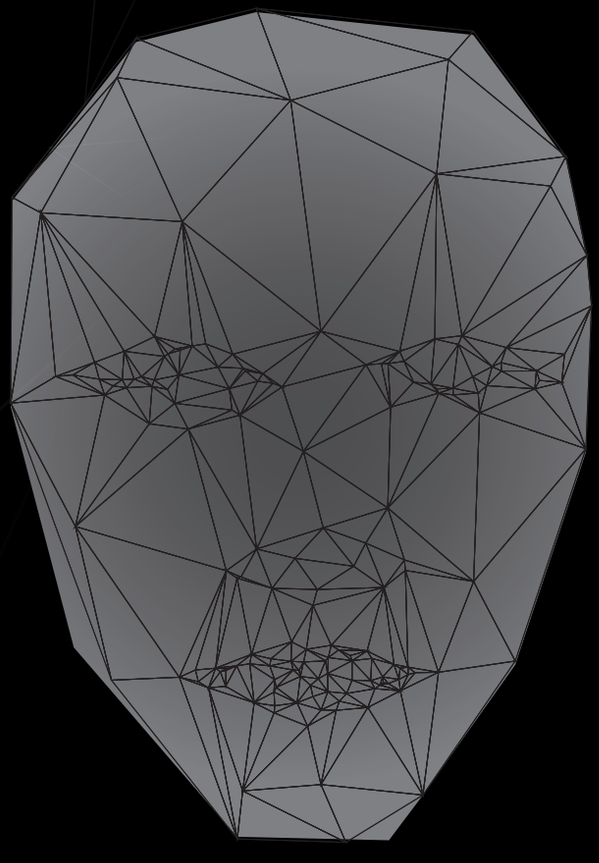

Food for thought

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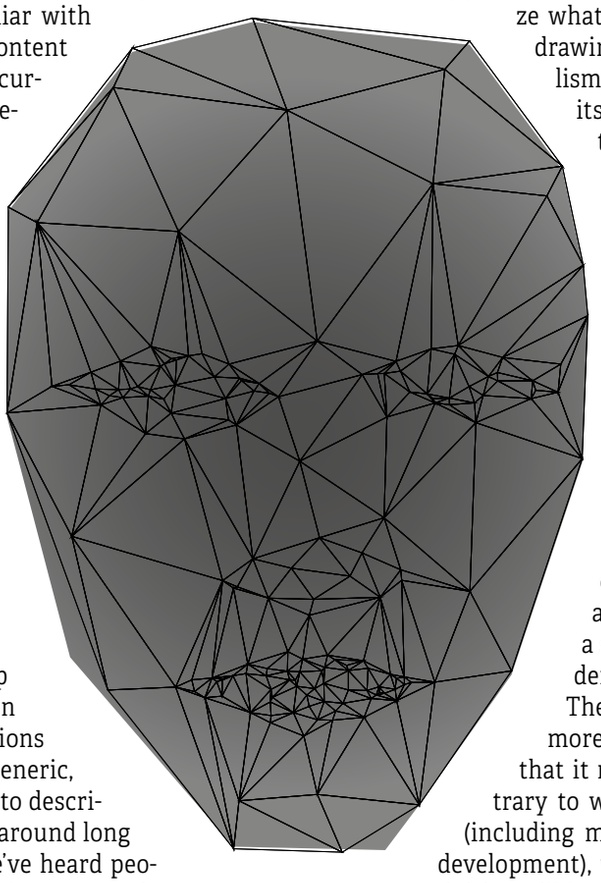
Food for thought

by Giuseppe Salemme

"How do we communicate things that require years and years of technical understanding and compress them into seconds of speech?" This was the question Edward Snowden asked himself in a 2015 interview. A few years earlier Snowden, probably the most famous whistleblower of our time, had decided to release thousands of top-secret documents revealing the formidable telecommunications surveillance powers exercised by American security agencies. He had always said he did it to allow U.S. voters to express an informed opinion on such privacy-invasive practices; but the great risk was that the average citizen, unfamiliar with concepts such as metadata, botnets, and content providers, would face too steep a learning curve to truly understand the scope of his revelations.



A similar dynamic is already contaminating today's debate on artificial intelligence. Some commentators are already talking about "AI fatigue" to define the sense of exhaustion mixed with disillusionment caused by the uninterrupted flow of news about algorithms, neural networks, and chatbots. It's rare for something to monopolize the debate on the future of practically every field of knowledge worldwide in such a short time; but the technical complexity of the subject plays a decisive role in contributing to this AI-induced stress: it's also well known how not even those who develop it could perfectly describe how it works.

The risk, in cases like this, is ending up talking not so much about the phenomenon itself, but about its ghost. In many discussions taking place today, AI seems to become a generic, impalpable, even incoherent entity: we try to describe it by recycling concepts that have been around long before the arrival of ChatGpt. After all, we've heard people talk about AI for years, in reference to the most various matters.

We didn't have to build new categories to fit the new technology; we used the ones we already had, even though the adaptation process turned out to be troublesome. Words themselves are the first exhibit. "Intelligence"? Really? We can barely define it, and now all of the sudden we seem to be able to create it? And why "intelligence", in the singular?

This is a lazy approach, to be kind. To be less kind, it's pure marketing: as rightly noted by journalist Stefano Epifani on Wired Italy, using the term "artificial intelligence" means starting the debate from the assumption that AI is, in fact, intelligent: a way too charged premise for those interested in understanding what this is really all about.

Let's be clear: this monograph is neither a computer science manual nor a semantics one. Here you will find stories, data, voices, facts, as in any journalistic work. Our intent is to describe and analyze what is happening in the era of the AI boom, drawing from the best of international journalism and literature on the subject; to explain its functioning and offer insights, interpretations, and useful ideas to better orient the reader in a world in full transition. All this, while trying not to perpetuate the AI rhetoric that has made it difficult to grasp the scope of the challenges we are facing as a society.

Long story short: our goal is to inform. For two fundamental reasons.

First: progress without awareness is not true progress. mRNA vaccines granted us an early escape from the pandemic emergency; yet, due to poor communication, people didn't understand how they worked, and didn't immediately recognize them as the incredible scientific achievement they were. AI risks following a similar fate if we don't really focus on understanding its functioning.

The second reason why it's worth to take a more in-depth look at this new technology is that it needs us way more than we need it. Contrary to what some would like to make us believe (including many of those directly responsible for its development), we are not facing a future where all our activities will be outsourced to amazingly powerful algorithms. It's quite the opposite: in the coming years, we'll have more and more choices to make, rights to defend, dangers to avert, and structures to rethink. Let's not delude ourselves that new softwares will be able to do everything for us; perhaps not even governments or markets could. We're going to need awareness and common sense, as well as our best ability to imagine, adapt, and put into practice. And these are still human-only tasks.

Let's chat

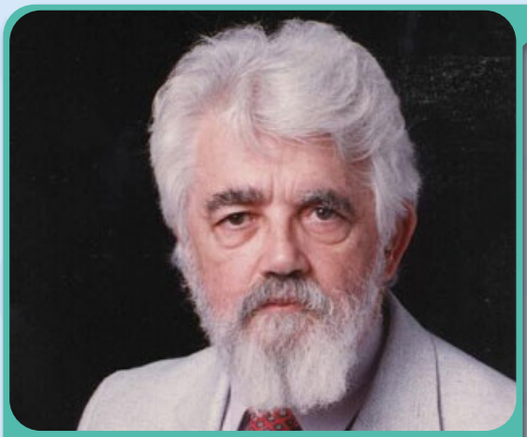
One of our journalist managed to "hack" one of the modern "intelligent" chatbots.
And he replaced it in giving some answers to a user looking for some clarity about the AI state of the art

8:30

User
Last seen today at 09:06

What do we mean by "artificial intelligence"?

The term "artificial intelligence" (AI) was first used by American computer scientist John McCarthy in the summer of 1956, during the Dartmouth conference. It was there that AI, as an attempt to simulate human intelligence, officially became a field of research.



Here he is

However, the AI McCarthy spoke of was very different from what we know today.

The first AI researchers thought that an intelligent computer should have operated according to a deductive logic: trained with a wide variety of basic principles of human knowledge, it would have had the basis to progressively grasp more complex concepts, through algorithms similar to Aristotelian syllogisms (this is the so-called "symbolic" AI).

The AI we use today is instead of the "connectionist" type and is based on the inverse idea: relating various data to each other to identify the patterns that generated them (inductive logic). The algorithms used for these tasks are generally referred to as deep learning (a subcategory of machine learning);

the model resulting from their interaction is a neural network (which, to some extent, simulates the functioning of human neurons).

What about "generative AI"?

Recently, we have started to define as generative AI all the software capable of generating text, images, videos, sounds, or other data, usually based on a user's prompt.

Generative AI algorithms identify structures and patterns within large datasets and then replicate them to create content with similar characteristics.

Between the late 2010s and early 2020s, these algorithms improved significantly thanks to the development of the transformer architecture based on the so-called attention mechanism, which allows them to analyze, break down, and contextualize individual “pieces” of data (e.g., each word in a sentence) to distinguish between the more and less important ones and then develop a response as consistent as possible with the user’s prompt.

What is an Llm?

Large language models (Llms) are large neural networks that use the transformer architecture to simulate the comprehension and production of texts in human language.

They are trained on vast amounts of texts of all kinds, from which they implicitly derive the syntactic rules of the language (but also its biases or mistakes!), and become capable of forming meaningful sentences based on statistical predictions of which word is most likely to follow the previous one, and so on.

Examples of Llms are OpenAi’s Gpt, Google’s Palm, and Meta’s Llama; these should be distinguished from ChatGpt, Gemini, and Meta Ai, which are merely interfaces created to facilitate user interaction with the Llms: they usually taking the form of chatbots or voice assistants.

Is this true intelligence? Comparable to ours?

No. The only area where AIs surpass humans (and by a lot) is computing power: this is why they can manage enormous datasets, taking into account all possible connections, and generate responses to our prompts very quickly.

But no matter how complex and advanced, at the core of AI still lie algorithms: series of instructions through which the user input is processed to produce an output.

Our mind is more skillful, adaptable, and autonomous; AI still requires a significant human intervention:

we write the algorithms, supervise their learning, correct errors and biases, and, of course, formulate the prompts.

Moreover, although their capabilities are expanding, current algorithms still have a certain degree of specialization. For instance, LIms are designed to simulate human language and do it fairly well; but they still struggle with mathematical calculations way more than one would expect from any computer.

The arrival of an artificial general intelligence (Agi) capable of operating in all areas of human knowledge, the ultimate goal of all tech companies, still seems far off.

Why does it seem so intelligent to us, then?

Because we are not that hard to "deceive." Our brain naturally tends to associate anything new with already known patterns (a phenomenon called pareidolia): that's why when we look at the sky, we can't help but find familiar shapes in the clouds, for example.

AIs leverage this more than we think: they speak in first person, modulate the tone of their responses based on ours, use irony or paraverbal expressions such as laughter or sighs. These are not inevitable characteristics inherent to the technology

type: they are precise development choices made to accentuate the "emotional" component of interactions (and thus "deceive" us better).

There is also another aspect of the issue: measuring an algorithm's "intelligence" is no easy task.

The scientific validity of the tests we have developed to evaluate capacities or competencies (such as the IQ test, or those for admission to the bar or the medical profession) is already shaky for humans; using those same tests to rate an algorithm's capabilities makes even less sense.

Let's keep this in mind when we read yet another news story about an AI passing some state's bar exam; and instead look at benchmarks specifically designed for evaluating new AIs: there are many, and many more are developed everyday (in some cases, researchers have found useful adapting tests used to study the logical-cognitive abilities of animals or infants).

But it will improve more and more...

That's true, but there are some caveats. First: some limits may be intrinsic to the type of technology used.

For example, three researchers from Singapore recently demonstrated that the current AI tendency to hallucinate (i.e., present completely made up facts or references in a credible and detailed manner) is unavoidable in LIms.

So we'll probably have to live with it, at least until a new technology emerges. Second: the improvement path for AIs is not linear or automatic, nor are AIs currently capable of self-improvement.

Developers proceed by trial and error, follow paths that may seem promising but eventually turn out to be dead ends, or the opposite.

And it certainly doesn't help that many aspects of modern AI functioning (such as those related to the training process of algorithms) are still difficult to understand.

What do you mean by "difficult to understand"? AI developers know what they are doing, right?

Only to a certain extent.

As previously explained, no human can manage or process the amount of data necessary for AI to function; this means that understanding exactly what patterns or relationships algorithms identify within these immense datasets is almost impossible.

It's the so-called black box problem: current AI algorithms have an intrinsic opacity that does not allow us to understand exactly how they work. This is why researchers are currently approaching LIms in the same way they study unknown natural phenomena: by analyzing their behavior and trying to understand the causes.

My head hurts. Just tell me: how will it impact my life?

Various forms of AI have already been present in our lives for years: they suggest what next word to write on our phones, decide which posts appear when we scroll through Instagram, or determine where our online orders ship from.

The new wave of generative AIs, starting with the release of ChatGpt in November 2022, has spread rapidly and is used in various fields: for image generation and photo editing; for creating or summarizing texts; for translations or coding; as an aid to learning or to people with disabilities; and in general to automate many types of activities.
In the immediate future, we will see more and more "intelligent" functions appear in our computers and smartphones, or directly in the apps or websites we use.

And the technology will improve more and more: Gpt-4o, the latest update to OpenAi's Llm, promises to provide users with a voice assistant that communicates without latency by text, voice, and images.

Later on, such technologies could lead to the spread on the web (or in the metaverse) of AI agents: bots with a high degree of autonomy and action capability, programmable for specific tasks.

What risks are we facing?

The only risk we can exclude is generally the most feared one: that AI suddenly becomes conscious and starts rebelling against us humans until total destruction of our species.

Apart from such scenario, AI development raises serious issues for democracy, global economy, environment, job market, security, and relationships, both on the internet and in real life.

This is why many countries, particularly in Europe, are looking to implement regulations to restrict AI riskiest uses.

But even so, the impact of its spread will be enormous and not entirely predictable: in this magazine, we try to tell what is already happening.

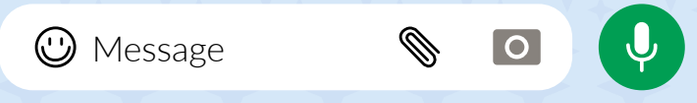
What can I do?

We can choose to inform ourselves, experiment first-hand, try to understand as much as we can and help others do the same: we need to know what AI can and can't do, and where our attention should be directed.

Limiting the spread of such an innovative and easy-to-use technology is impossible; thus, it's the way we will use that will determine its fate (and ours).

In general, we must not forget that AI is not an entity in itself but an extension of us: it is a human creation, trained on a vast set of human knowledge, and used by humans. In a sense, it is made in our image and likeness;

to make it better, we must become better people ourselves.



Regulating intelligence

We attempt to explain the real scope of the AI Act and its effects. In particular, we try to answer a question that's been buzzing in our heads for a few months: is it really necessary to regulate new technologies? And what does Cicero's *captatio benevolentiae* have to do with the law passed by the European Parliament?

by Michela Cannovale

If it is true, as we write in the editorial, that on the horizon, there is no world where we will have subcontracted all our activities to algorithms far more capable and efficient than us, we are nonetheless aware that never before has artificial intelligence shown so many capabilities and entered the agenda of all companies as it has in 2023. For the first time, with its new generative system, the technology has transformed from a "tool" to a true "agent" capable of working autonomously. From a static vehicle to a dynamic actor. For the first time, we have seen it perform complex tasks, not just limited to producing an image or a text but even organising trips, preparing business plans, and structuring complex events.

So much was discovered about these capabilities that, by the end of the year, the European Parliament and Council could no longer wait, reaching a political agreement on artificial intelligence in December. The AI Act, as it is called, received the final approval of Strasbourg on March 13, 2024. It's been fundamental step, designed precisely to avert dangers, rethink structures, and protect rights in the years to come.

On these premises, we decided to involve Edoardo Raffiotta, of counsel at LCA law firm, lecturer, and member of the Italian government's Coordination Committee for updating national strategies on artificial intelligence use. Together, we tried not only to understand the real scope of the AI Act and its effects but also to answer a question that has been buzzing in our heads for a few months: is it really necessary to regulate new technologies?

To clarify the reason for this curiosity, let us make a small note before getting to the heart of the matter: as Raffiotta pointed out, this is the "first legal framework on AI in the world." Meaning: there are no similar ones globally. Specifically, "this text first addresses the risks of AI according

The distinction between "good AI" and "bad AI" has become increasingly clear, not just on a technological level but also, and more importantly, on an ethical and legal one. The first one focuses on safety, privacy, and progress, while the second one centres on data exploitation

to two main lines: on one hand, it aims to ensure the safety and fundamental rights of people and businesses regarding new technologies, establishing a series of requirements and obligations for its specific uses; on the other hand, it seeks to strengthen the adoption, investment, and innovation of AI across the European Union by reducing administrative and financial burdens for businesses." Essentially, the law forces companies to adopt a new risk management strategy for using, trading, and developing applications or platforms that employ AI, pushing them to focus on algorithmic transparency, interoperability, cybersecurity, non-discrimination, and human oversight. As the European Parliament clarified, the aim of the new rules is to combat the major risks that could arise from the misuse of AI and promote, on the contrary, as reliable a technology as possible. For Raffiotta, "it is not about putting a brake on or saying where innovation should go, but making the space within which it will be applied safe."

But what dangers could technology really pose? Why have the institutions insisted so much on the reliability of AI? In short, returning to a few lines above, what are the real reasons justifying the existence of rules in this case?

Good and bad technologies

Let's take a step back. The "agent" technology places us in front of a machine that can expand the production of knowledge in ways, times, and scales unimaginable in the past. Moreover, it can change its nature based on the multiple interactions with its consumers.

In this rapidly changing scenario, the distinction between a "good AI" and a "bad AI" has become increasingly clear, not just on a technological level but also, and especially, on an ethical and legal one. The first one focuses on safety, privacy, and progress, while the second one centres on data exploitation.

To better understand this separation and whether we can really talk about good and bad technologies, it's worth recalling what Marco Trombetti, entrepreneur who founded 'Translated' in 1999—a company that pioneered the use of AI in language translations and had a turnover of 60 million euros in 2022 (and, according to its founder's estimates, could reach 250 million in 2027)—said in June 2023.

As a guest on the show *Codice* aired on Rai 1, Trombetti explained that AI creators based its development on the persuasion technique used in ancient Rome (better known as Cicero's *captatio benevolentiae*). In other words, a platoon of psychologists, during the very early stages of training, indicated to generative AI tools which types of responses, in a traditional social interaction, are more persuasive and convincing than others.

This technique is activated today, for example, when ChatGPT, faced with a more complex request than usual, declares: "I am just an artificial intelligence, I cannot answer this question, however..." and—zap!—throws out its response. A response that, in most cases, is extremely convincing to its interlocutor. *Captatio benevolentiae*, indeed: gaining favour, sympathy. Nothing special, just simple psychology. It only surprises us as most of us, after all, come from an era where we still have the incredible fortune to spot a phone booth here and there.

Edoardo Raffiotta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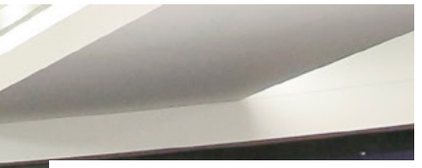


> Coraggio: «Companies are very worried that their employees use AI without disclosing it, with possible disputes over violations of intellectual property rights and potential data breaches»

"Too bad," said Trombetti, "that if taken to the extreme, this persuasion technique could become dangerous. When we interact with a system that tells us exactly what we want to hear, moreover with a good capacity for rationalisation, it is easy to be convinced in the blink of an eye. And if today, for example, social manipulation by terrorist groups happens through an online chat, then we can easily imagine that AI systems could assist them very effectively. This is one of the great fears we have. And it is also one of the areas of AI that, in my opinion, should be immediately regulated."

The possibility of human mind manipulation by a machine, in 2023, was just one of the fears concerning new technologies. There was also an awareness that AI could multiply surveillance on anyone and anywhere on the planet. A picture, a phone number, or a plane ticket is enough to identify not only the individual but an entire network of connections, building increasingly sophisticated and tailored attack systems, with possibilities for abuse and theft of sensitive information.
Add to the "bad effects" mentioned so far a political reason: as Father Paolo Benanti, theologian and Franciscan philosopher, member of the UN Committee of AI experts, and president of the AI Commission for information, said, it is clear that if persuasion (and thus, in a broader sense, propaganda) comes from a machine that, as a machine, never sleeps and never tires, that speaks by tailoring words based on its human interlocutor (profiled thanks to, as mentioned, the incredible data collection capability), well, what could result is even the perfect political instigator, and thus the disturbing risk of permanently disrupting the mechanisms of democracy.

There is more, and this time it is lawyer Giulio Coraggio, partner at the law firm DLA Piper, who reminds us: "Today, companies are very worried that their employees use AI without disclosing it, with possible disputes over violations of third-party intellectual property rights, potential data breaches, or sharing of confidential information. Moreover, if companies do not adopt internal policies regulating what is possible and what is forbidden, they cannot expect their employees to comply."

Are we really sure?

In response to these concerns, the European Union has thus worked on the text of the AI Act by expanding these concepts: first, reducing risks to increase the opportunities for using new technologies in commercial, legal, medical, and cyber fields; and then transparency, to make the origin of content recognisable and ensure the protection of copyright.

It seems clear, essentially, that the overall structure of the law focuses on the issue of danger and, consequently, on the need to build trust. But are we really convinced that even the end user feels the problem of risk

Giulio Coraggio

so strongly? Raffiotta is "fully convinced" of this. "In public debate, the issue of risks undoubtedly prevails. As with any novelty, there is more fear than trust in AI. Fear, moreover, not so much of the violation of one's data, but of losing one's job or of an impact on one's profession. However, the AI Act sets an important principle: the centrality of humans."

Europe, China, and the United States

In doing so, Europe has shifted the playing field from technology to rules. The AI Act, with its horizontal regulatory approach that regulates AI in general and not its specific applications, applies to any use of technology regardless of the sector. It is evident, in this sense, that European priorities have been ethical aspects, responsibility, copyright: a regulation that applies to everyone and places humans at the centre of every aspect of life.

Much gained, according to Raffiotta: "Regulating technology means dealing with reliable science that protects rights and duties, means reducing and preventing risks. And it also means that when the market will have to choose a reliable, controlled, and certified technology, it will choose ours." Moreover, an important aspect needs to be considered: "That's a law that can be exported worldwide. The hope is that the United States, China, and other countries will adopt similar regulations. In the case of privacy, the GDPR set a global standard; in the case of AI, the hope is that the AI Act will do the same."

It remains to be seen whether the United States and China will do so. In the US, where the land of free technology and entrepreneurship takes pride in its ability to develop new technologies before others, the priority is to increase the competitiveness of companies in the global market and to bring AI solutions to the private and public sectors quickly, thanks to a regulatory approach less burdensome than Europe's. According to Leon Panetta, former CIA chief and former US Secretary of Defense, the public-private partnership is the best way to address the challenges of innovation: "If there is a capacity to create revolutionary tools, indeed, this capacity is in the private sector. The worst thing that could happen is that it stays there, that the information is not shared with the public." It was no coincidence, in this regard, that President Biden, along with major organizations, signed the so-called executive order in October 2023, an administrative act shared with businesses according to a self- and co-regulation approach. Under this approach, companies will have a dominant role while ensuring safe, reliable, and transparent technological development according to the principles of safety, security, and trust.

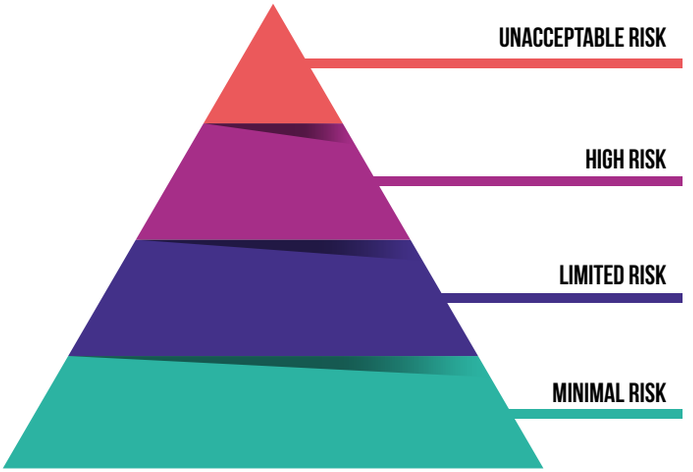
Like the US, and unlike Europe, China has not adopted a general law, although it remains active in producing regulations such as the 2023 provisional measures on generative AI, the personal information protection law, and the data security law already in force. The primary priority of the Asian Giant, after all, is the defence of the party. The second is the guarantee of being able to continue undisturbed in the buying and selling and circulation of data.

WHY IS THIS LAW NECESSARY

The AI Act has reached its conclusion after a regulatory journey that began in 2021, when the concept of technology was quite different from today's. Discussions about generative AI were minimal, and consumer usage was still limited. "More than three years have passed since the first draft of the law, with numerous and complicated internal discussions. Meanwhile, the notion of AI has continuously evolved, especially after the launch of ChatGPT in November 2022, and the text has been revised multiple times to best align with its use in OECD countries," says Edoardo Raffiotta.

The law will become fully applicable two years after its publication in the Official Journal, so in 2026 (this is the so-called grace period, which will allow companies to build compliance processes with the regulation). For those who violate the rules, penalties of up to a maximum of 35 million euros or 7% of annual turnover are foreseen.

"Complying with the AI Act," comments Edoardo Raffiotta, "requires adaptation to various requirements, which is why 24 months are granted for compliance. From this perspective, the first thing companies must do is understand how much technology they use, what they use it for today, and what they will use it for in the future. The definition we have given to AI over the years is particularly broad, so much so that many organizations do not even know they are using it. This is why it is important to have a law, like the one approved by the European Parliament, which makes it clear that it is not only companies that produce AI that are involved in regulatory changes, but also those that purchase and use it. Let's be clear: the governance burden falls on everyone."



FOUR LEVELS OF RISK

The AI Act works as follows: AI systems wishing to enter the European market must comply with all the provisions contained in the law. To ensure actual compliance, a verification of compliance will be carried out either in the form of self-assessment or third-party assessment.
Who must comply with which provisions? According to the horizontal risk-based approach on which the entire law is built, the higher the risk coefficient associated with the use of a system, the stricter the regulation will be. Four levels of risk are defined:

- Minimal Risk (e.g., devices providing purchase recommendations or spam filters, for which no particular obligations are foreseen);
- Limited or "Specific Transparency" Risk (e.g., deepfakes, whose artificial origin must always be disclosed);
- High Risk (e.g., critical infrastructures such as transport or robot-assisted surgery, which could endanger the life and health of citizens and, for this reason, are required to meet stringent requirements);
- Unacceptable Risk (e.g., remote biometric identification systems, recruitment procedure selection software, credit scoring that denies citizens the possibility of obtaining a loan, which are prohibited by the AI Act).

Raffiotta: <Regulating technology means reducing and preventing risks to deal with a reliable science. But it also means that when the market will have choose a reliable, controlled, and certified technology, it will choose ours>

Coraggio emphasizes: "Traditionally, the EU has always regulated, while the US has innovated. In the case of AI, Strasbourg has decided to introduce a cross-cutting regulation that applies uniformly to all sectors, while Washington, with the executive order, has adopted a regulation that is not directly applicable to companies and is sector-specific. The EU's hope is that, even with AI, the so-called Brussels effect will occur and that the US will adopt our same regulation, facilitating the development of an economic environment where companies can operate with more certain rules." He adds: "AI is a powerful and constantly evolving technology. The question of whether to regulate it or not is complex and involves various aspects. Some argue that regulation is essential to ensure safety, ethics, and responsibility in its use. Others believe that a less binding approach encourages innovation and growth. In my opinion, regulation is necessary to create a legal framework where companies and citizens have greater confidence in this technology in order to make the best use of it."

The risk of obsolescence

At this point, one last clarification remains: another risk that the AI Act intends to avoid is the obsolescence of its own regulatory framework. Laws rarely remain current over time, especially in an era where innovation moves so rapidly. However, no matter how much technology evolves, the AI Act has been designed and built to have a wide margin for implementation. "The European regulation," clarifies Raffiotta, "provides that the Commission can revise high-risk systems and the list of prohibited practices periodically. The regulation is thus easily updatable because its framework allows for working on use cases of the technology rather than the technology itself."

Artificial intelligence in the super election year

From Europe to the United States, passing through India and Russia: this year, 4 billion people will go to vote. These are the first consultations influenced by AI

by Eleonora Fraschini

Image used for the election campaign of candidate for president of Argentina Sergio Massa

Misinformation and disinformation, in the next two years, will be more dangerous than extreme weather events and geopolitical tensions. This emerges from the Global Risk Report, the analysis prepared annually by the *World Economic Forum* to identify, through the opinions of over 1500 experts, the risks our planet will face in the future. It is important to note that the report does not underestimate the severity of environmental, social, and economic risks but emphasizes that the circulation of false or incomplete news can have cascading effects on all other areas of our lives.

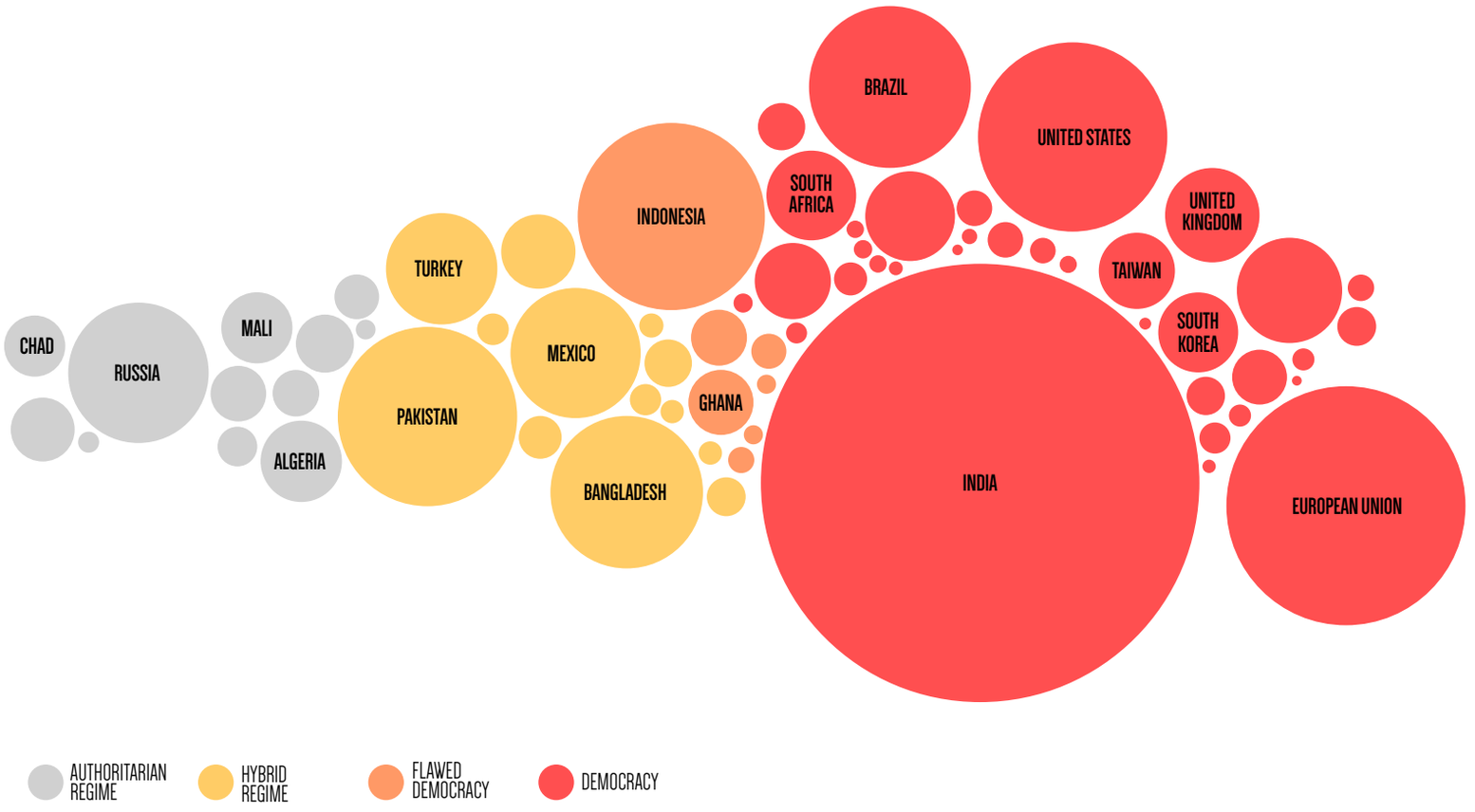
To better understand the nature of these threats, we must start with their definitions: misinformation refers to misleading information spread without the intention to deceive, while disinformation involves a deliberate intention to mislead the user. Both have seen their potential grow exponentially thanks to generative artificial intelligence, which allows even those without particular means and IT skills to create credible content. This mix of disinformation and AI, considered by many experts a sword of Damocles threatening democracy, risks becoming particularly explosive in the coming months.

Indeed, 2024 is the year with the most elections ever: about 4 billion people will be called to vote, half of the world's population. In addition to the renewal of the European Parliament in June and the US presidency in November, elections are scheduled in seven of the most populous countries in the world: Bangladesh, Brazil, India, Indonesia, Mexico, Pakistan, and Russia. However, as the Economist pointed out in an article on the subject, "this great march to the polls does not necessarily mean an explosion of democracy." The complete list of this year's electoral events involves 76 countries where all voters will have the opportunity to express their vote, but in half of them, the consul-

tations will not meet various democratic requirements, such as freedom of speech and association.

This electoral context is particularly sensitive to the combination of artificial intelligence and disinformation: "AI lends itself to a variety of possible uses aimed at producing materials and content of a disinformative nature, but also misinformation," explained Oreste Pollicino, a professor of Constitutional Law at Bocconi University, during the *Talk to the Future* conference series organized by the Milan Bar Association. "The most common techniques are the manipulation of facial attributes, such as aging and rejuvenation; face swap, i.e., face swapping between different people, and face reenactment, i.e., a manipulated video to alter gestures and expressions". We are talking about something that is already happening.

Last November, *The New York Times* wondered if the presidential elections in Argentina were the first test of artificial intelligence in politics. Javier Milei, the winning candidate, and his opponent Sergio Massa, made extensive use of technology to manipulate existing images and videos and create completely false ones. The result was an election campaign marked by illustrations that seemed to come from Soviet propaganda of the last century and memes based on statements never made. A similar situation was reported



Countries called to vote in 2024. Source: The Economist

In Indonesia, former military man Prabowo Subianto, won the election partly because of an image produced with AI

in Slovakia, where shortly before the elections, an audio recording circulated in which what seems to be the voice of the pro-European candidate Michal Šimečka discusses the best way to buy votes. It is not easy to understand if this deepfake actually contributed to Robert Fico's victory (recently the victim of an attack), but it is impressive to think that a ploy made in a few minutes can change voters' votes. In Indonesia, the work done by Prabowo Subianto, who won the presidential elections in the first round, proved particularly effective. The former army general, known and criticized for his iron fist, based his campaign on the slogan "gemoy" (which literally means "cute and cuddly"). The politician's rebranding is centered on an avatar created with a text-to-image platform, costing $10 a month. Thanks to this tool, which allows creating images from text descriptions, in the campaign posters, the military man, accused several times of violence and human rights violations, appears as a child with a sweet and submissive expression.

Whether it is images, audio messages, or videos, generative AI has seen its uses multiply in the election period even in the United States. Several newspapers reported that in New Hampshire, a deepfake audio was circulated: answering the phone, citizens heard a very credible imitation of President Joe Biden's voice giving wrong information about the party primaries, but the message had never been recorded. On Instagram, hundreds of hyper-realistic bots created by AI appeared, leaving supportive messages on Donald Trump's posts. In the United States, the problem is not new, but according to Pollicino, it is addressed with a sort of contradiction: "Americans feel divided. On the one hand, there is the terror of possible external interference in the democratic debate by Russia and China; they fear someone could pollute the debate. On the other hand, there is the fear of touching the sacrosanct First Amendment. Every time someone tries to propose a regulation that could limit the scope of the First Amendment, there are mental cramps that are difficult to untangle." Perhaps for this reason, since 2020, many bills on this topic have not been approved. However, a step forward was the Executive Order on the Security, Reliability, and Development of AI issued by Biden last October, which requires operators to provide the government with details on models based on the computing power with which they were trained.

In Europe, on the other hand, the AI Act was approved in recent months, a regulation that establishes guidelines for the use of these technologies based on possible risks and the level of impact. Particularly important in view of the European elections are the transparency obligations: it is established that artificial or manipulated images, audio, and video content must be clearly labeled as such. According to the AI Act, moreover, the most powerful models, which could pose systemic risks, must also comply with other obligations, such as conducting assessments, mitigating risks, and reporting incidents.

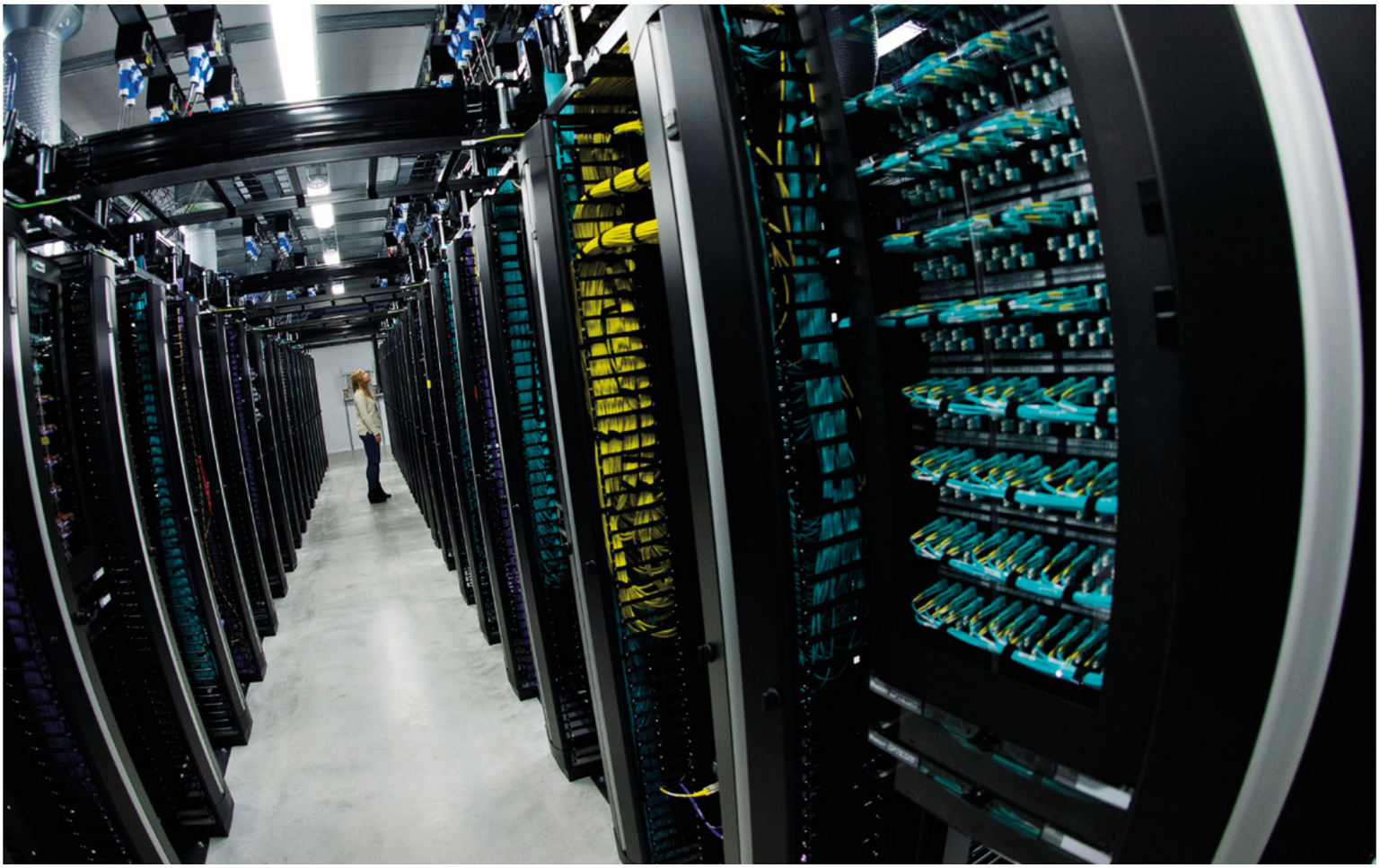
However timely, the regulatory adjustment cannot prevent this year's numerous elections from being the first example of AI interference in democracy worldwide. The consequences, perhaps, we will be able to ask ChatGPT in a few years.

The unbearable lightness of data

We are used to considering digital as something immaterial, but every click has a weight and a cost in terms of water and electricity

by Eleonora Fraschini

"A data center is a physical facility that houses computing systems and associated components such as servers, storage devices, and network equipment. These centers are designed to ensure the reliability, security, and energy efficiency needed to manage large amounts of data and support critical business applications". These are the words ChatGPT uses to describe its own home, the material site of everything we are used to considering virtual. Data flows into these centers to be stored, processed, and made available to the owner. In these facilities, you find archived emails, movies that are downloaded or streamed, the functioning of millions of websites, and many other types of data. In other words, the memory of the recent world, deposited in servers that are far from virtual. With the development of artificial intelligence and LLMs, the workload of data centers has increased, along with their environmental impact. These structures, in fact, consume large amounts of resources to ensure the constant functioning of servers, which inevitably depletes the areas where they are built. But where are the data centers located? The answer is not easy because the training of ChatGPT and other AI models mainly takes place in the data centers of the organizations that develop them, such as OpenAI. However, after the partnership signed with Microsoft in 2019, this process primarily occurs in the big tech's data centers. Tech companies like Microsoft have extremely powerful and scalable cloud infrastructures that can be used for large-scale training operations. Therefore, when we refer to the consumption and resources used by artificial intelligence, we consider the data centers of the company founded by Bill Gates, to which significant investments have been dedicated. According to The Atlantic, in recent quarters, Microsoft has spent over 10 billion dollars on cloud computing capacity and in 2021 announced plans to build between 50 and 100 new facilities.



The thirst for water

Like all computers, data center servers heat the surrounding air. Effective cooling systems are essential to dissipate heat and ensure proper operation, currently using water as the main resource. Some studies, including "Making AI Less Thirsty" by the University of California, have hypothesized that global AI demand could consume between 1 and 1.7 trillion liters of fresh water by 2027. This figure is particularly worrying, especially considering the location of data centers: if we compare the position of Microsoft's facilities with a map of areas at hydrological risk, many of the structures are in areas identified by the United Nations' *World Water Development Report 2023* as "high risk". In 2022, the last year for which Microsoft released data, the tech giant's water and electricity usage increased by about a third. According to Marco Bettiol, a professor of Business Economics and Management at the University of Padua (author, among other publications, of "The Environmental Sustainability of Digital: The Role of Data Centers"), water consumption can vary greatly depending on the type of facility and the type of cooling used, making accurate estimates difficult. "The problem, in any case, exists, this is beyond doubt. - he explains - It is also true that AI and its spread constitute a very recent phenomenon in its dimensions. We can say we are in the 'second phase': from the lab, we have moved to use by a very large audience of consumers". So far, the focus has been more on research than sustainability, which should now become a priority. "Technologies for air cooling are being studied to limit water consumption. - continues Bettiol - This is a particularly sensitive issue for the territories where data centers are located". If the facility is in a cold climate, such as Northern Europe, the risk of overheating and the amount of water used are lower. However, these structures, to be efficient, must be close to concentrations of computational capacity demand: "The issue arises especially for areas with a hot climate and those under high environmental stress, such as China and India. More and more investments are being made to build data centers in these areas, and solutions will need to be found".

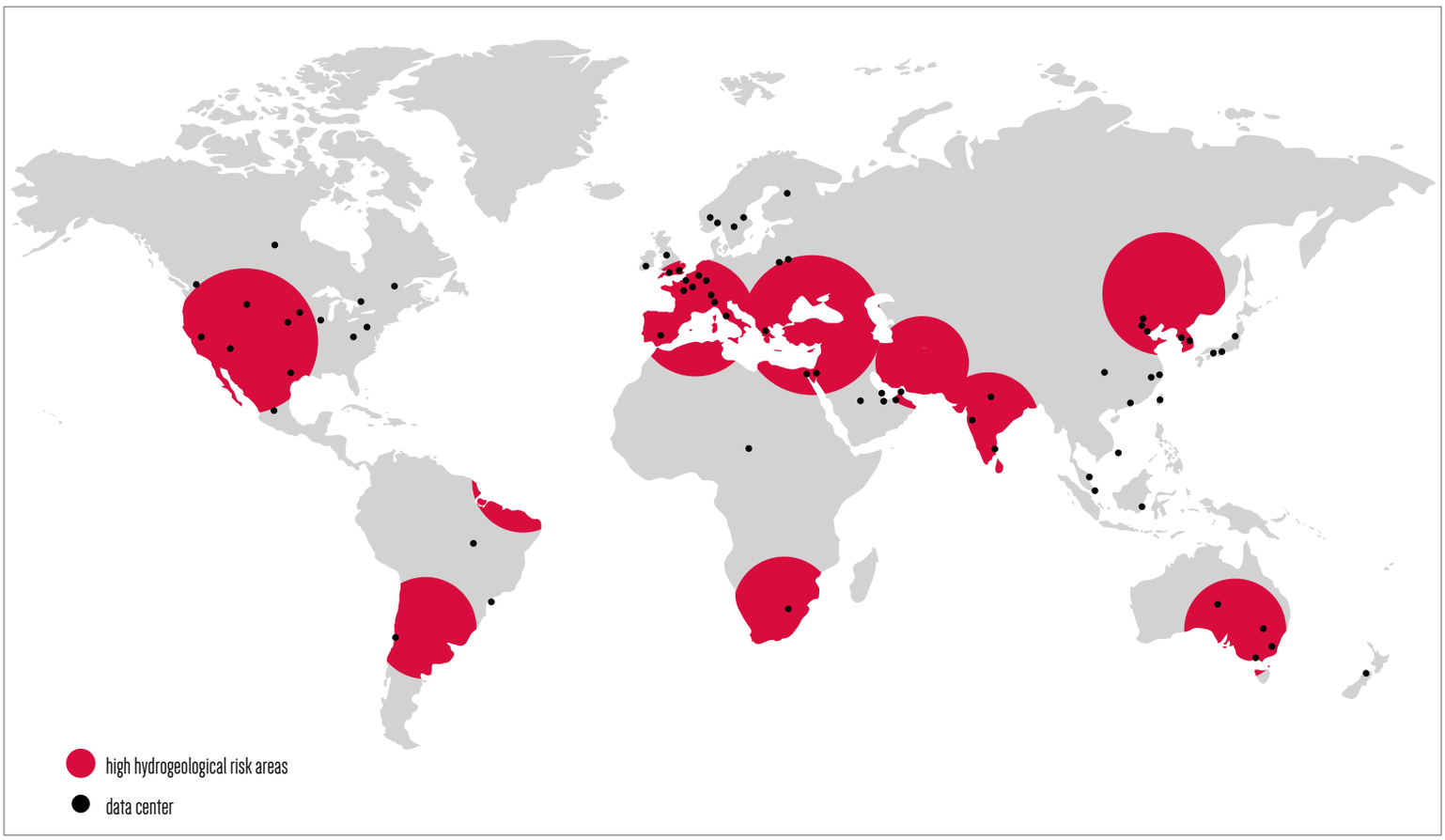
The hunger for energy

By their nature, data centers are energy-intensive buildings: "The most reliable estimates report that data centers, globally, absorb between 1 and 2% of the world's energy consumption," explains Bettiol. Training deep learning algorithms requires high computational capacity, translating into even higher energy consumption. In the current context,

given the spread of AI, we have unofficial data: "we are talking about consumption that is currently almost ten times that of a cloud computing server. - continues Bettiol - So the impact is certainly significant. It is also true that we are talking about a very new phenomenon from an industrial point of view on these scales, so we can expect optimization paths to be undertaken in the coming months". We have already observed this phenomenon in the data center world, which was much less efficient 6-7 years ago: "Operators' investments have led to a significant decrease in electricity use. One of the most important indicators used in the data center world is Power Usage Effectiveness (PUE), which measures the ratio of the total energy consumed by these facilities to that used by IT equipment. The closer this ratio is to 1, the more efficient the data center will be. The results of big tech's efforts in this direction are visible in the decrease in the global average PUE: it has gone from an average of 2.5 in 2007 to 1.57 in 2021". Currently, the servers used for artificial intelligence consume much more due to their operating mechanisms, but it is also true that we expect an optimization path in the relatively short term. A greener data center is also a structure that costs less and has higher profit margins since energy is the main cost.

Disposal of components

Another aspect to consider is the issue of e-waste, or the disposal of electronic waste. "We must consider that the digital devices used in data centers need to be renewed fairly quickly. Every 3-5 years, servers are changed to make room for more efficient new technologies and to ensure maximum reliability," the professor continues. "At this point, it is important to understand what happens to these technologies that are phased out. Today there are companies that try to recover or reuse this equipment, but their subsequent recycling is still very expensive. It is not easy to work on these aspects because they are only partially controllable by operators, as the technologies are not produced by them but by component companies". The entire supply chain, from chip production to the data center, should start thinking in a circular logic: "At the moment, particular attention is not paid to these aspects, but it must be taken into account that there are a series of emissions linked to the production of electronic components for data centers that we do not see because they are often produced in other countries". "The other issue," concludes Bettiol, "is that perhaps consumers need to be made more aware of the impact of using these technologies. When we use a computer, we often think we are doing very light actions, but globally, consumption risks having a significant weight".



Comparing the location of Microsoft's data centers with the map drawn up by the United Nations World Water Development Report 2023, it's clear that many facilities are located in high drought-prone areas

Federico Faggin

The man who created the Silicon Valley is now committed to spreading his "theory of everything", that combines concepts like consciousness, free will and quantum fields. And warns society against the reckless development of artificial intelligence: "Materialism and reductionism are the today's fundamental problems: the human being is not a machine"

by Giuseppe Salemme

When Federico Faggin was hired to lead the team that ended up creating the world's first microprocessor, the Intel 4004, he was just twenty-eight years old. It was 1970: the young physicist from Vicenza, who graduated from Padua University five years earlier, had just moved to California to continue developing his first invention: the Mos silicon-gate technology. That turned out to be, "the missing piece to reduce a computer's central unit to a single component." Faggin explains that at the time it was a goal of many researchers: "The idea was already in the air. Having invented the Mos technology, I was in the ideal position to realize it; but if I hadn't done it, someone else would have within a few years, even with a different technology maybe."

In the following thirty years, caught by what he himself has defined as "the serial entrepreneur disease," Faggin created Zilog, the parent company of the Z80, a microprocessor still used today in countless electronic devices (from printers to Game Boys, through musical instruments and Pos terminals), and then Synaptics, where he developed the first laptop touchpads and the first capacitive touchscreens for mobile phones.

But these inventions only constitute the first chapter of his life. In the '90s, Faggin goes through what he describes "an extraordinary consciousness experience" that profoundly changes him, making him perceive for the first time another dimension of reality, personal and holistic at the same time. He decides to

progressively abandon his roles in companies and begins to deepen his studies of philosophy and quantum physics to try to explain what he has perceived.

Today, Faggin is 82 years old, and has recently published the English version of "Irreducible" (Essentia Books, 2024), a book in which he illustrates his "quantum theory of consciousness," developed together with physicist Giacomo Mauro D'Ariano. Unlike his old inventions, he explains, the emergence of this theory was not just a matter of time: "There are things that cannot be predicted: because they depend on a range of factors inextricably linked to the nature of man and the universe."

The recent surge in AI performance has also been unpredictable: it is widely documented how not even its own developers can fully explain it. But the parallel should not be misleading: there is nothing transcendent, nor conscious in these algorithms. And therefore not even intelligent. And, for Faggin, there never will be.

Let's start by going back for a moment to November 2022, when ChatGpt is made available to the public for the first time. What was your first reaction when you tried it?

I was amazed, like everyone else. No one still understands why it turned out to be so much better than previous versions. Being able to create something that allows us to communicate with a computer using natural language had been a goal for a long time; but no one expected to achieve it so early.

Do you use it regularly?

Of course, for example to quickly translate my writings from Italian to English: it increases my productivity by five times. Yet, if I didn't know the language, I would write a lot of nonsense, because on every page there is at least one error, usually serious enough to completely reverse the meaning of the discourse! So paradoxically, in the end, we come to the conclusion that using AI "well" means using it only to do what we already know how.

Do you think this is the main problem with generative AIs? Their reckless use?

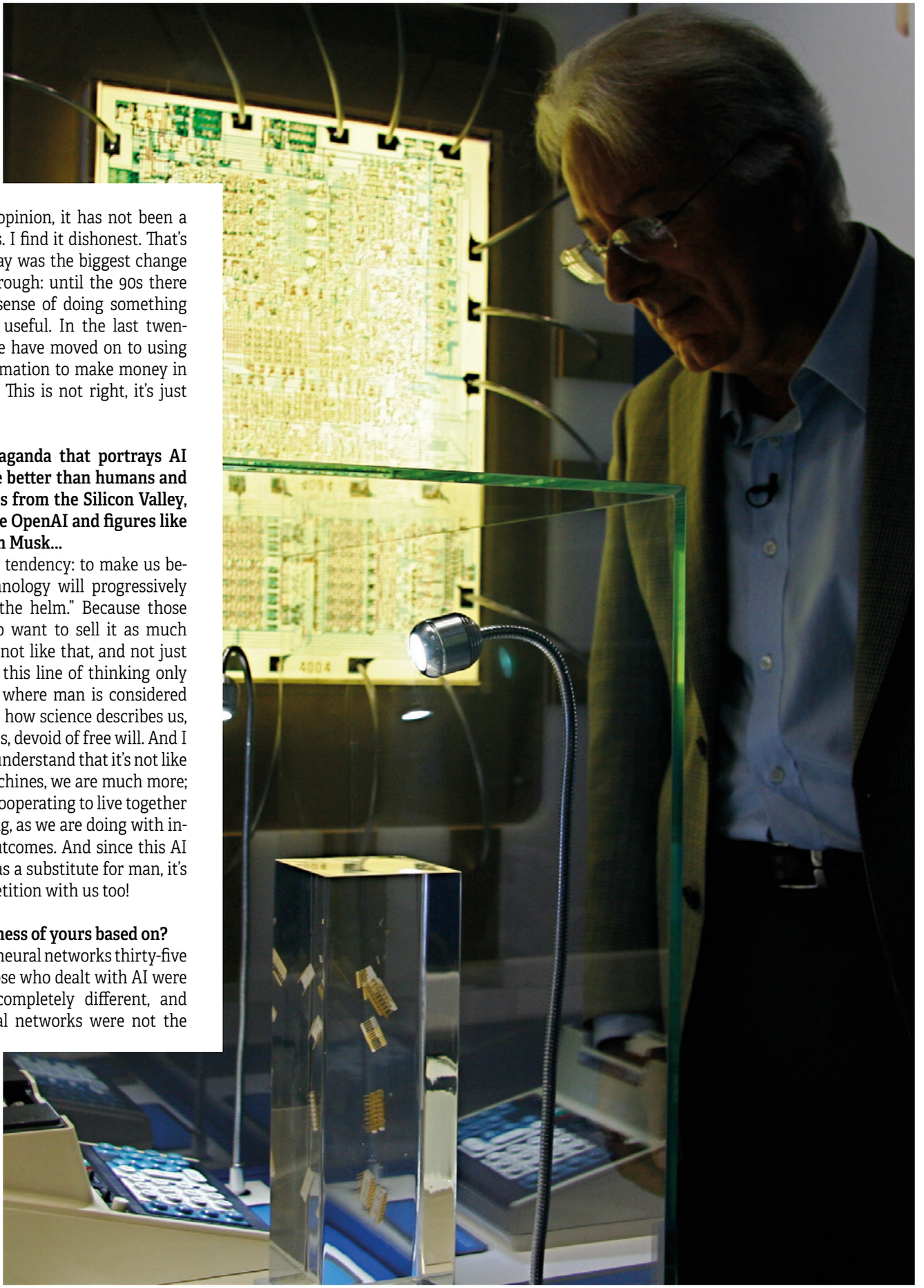
The problem is that for the first time in history we can no longer distinguish a human product

from a machine product. This creates enormous opportunities for deception, because the all-human fantasy of deceiving each other has been refined over the centuries and is enormous. And, as it increases my productivity, it can also increase that of malicious individuals.

That's why many believe it should be regulated.
Of course it should be, but how? Opacity is an inherent factor in the functioning of these algorithms. I don't think it's something that can be regulated; if not with honesty and common sense. I believe this proves the lack of a deep ethical sense of our society; otherwise it should have already emerged when companies started collecting and selling users' personal information behind their backs. Governments should have responded, and instead we let them do it: they offered us excellent services for free and for a very long time none of us really questioned how they managed to keep them running. That was also a form of deception, albeit within the limits of legality (it's a little like advertising, which in the end is nothing but an ensemble of small lies or omissions). But now those same companies that have collected data from all over the world for years are in the position to take advantage of them again to develop AI.

So in your opinion, will Silicon Valley continue to remain the center of this new AI era as well?
For a while, certainly. But what will happen in ten years following the arrival of these revolutionary technologies is impossible to predict.

You are still considered one of the founding fathers of Silicon Valley. How have you seen it change over the years?
It has grown immeasurably. But the fundamental change has been what I just described, the use of personal data for profit: companies make their money this way, and, despite this, they are generally seen with an aura of gre-



atness. But, in my opinion, it has not been a transparent process. I find it dishonest. That's probably what I'd say was the biggest change this valley went through: until the 90s there was a widespread sense of doing something new, beautiful and useful. In the last twenty years, instead, we have moved on to using other people's information to make money in every possible way. This is not right, it's just not right.

Much of the propaganda that portrays AI as about to become better than humans and replace them comes from the Silicon Valley, with companies like OpenAI and figures like Sam Altman or Elon Musk...
It's true. That is the tendency: to make us believe that this technology will progressively allow us to "leave the helm." Because those who develop it also want to sell it as much as possible. But it's not like that, and not just for ethical reasons: this line of thinking only works in a context where man is considered as a machine. That's how science describes us, after all: as machines, devoid of free will. And I try to make people understand that it's not like that, we are not machines, we are much more; and we must start cooperating to live together instead of competing, as we are doing with increasingly worse outcomes. And since this AI is being developed as a substitute for man, it's entering into competition with us too!

What is this awareness of yours based on?
I was working with neural networks thirty-five years ago, when those who dealt with AI were doing something completely different, and believed that neural networks were not the

right way. At the time, of course, our computers were not powerful enough to exploit the correlations between data as we do now. But at that time I also understood that we as human beings have consciousness: it was something that no one understood, no one studied; and I so I started to study it myself.

And...?
I realized that science seems to have abandoned the study of consciousness. It excludes it from reality, limiting itself to saying that it is an epiphenomenon: an accessory, a side effect of the brain. But why just the brain? There are many documented cases of people who experience near-death states in which brain activity is absent, but they wake up and tell of experiences that are often able to change their lives. Science cannot explain these things, so it just says that there is nothing there, that they are just daydreams. But explain to me: why do these daydreams exist? How do they happen? We can't label them as epiphenomena and no longer be interested in them: it would be like giving a name to a disease and pretending that's enough to know how it works.

What exactly is consciousness, in your opinion?
Together with Professor D'Ariano, we have developed a theory according to which consciousness and free will are fundamental properties of nature, which exist even before the physical world. According to our theory, consciousness is not something that emerges from the brain after it develops enough; but something that has guided the very evolution of the universe. A natural intelligence inherent of the quantum fields which have created everything we see by freely interacting with each other.

So the consciousness that each of us "feels" would emanate from these quantum fields that are at the basis of all the reality around us?
Yes. And it is necessarily accompanied by free will: what's the use of being conscious if you don't have free will? Why bother understanding the unfolding of events when you don't have the possibility to modify it? Here too, according to science, we have no free will (even if we avoid saying it in such a brutal way). But intelligence, as understanding of what I want and what surrounds me, can only arise from consciousness and free will.

And computers don't have it.
They have none of this: they don't understand anything. Computers only know symbols and probabilities, never their meaning. What we define today as "artificial intelligence" is nothing more than a statistical game: an algorithm that chooses from time to time the word with the highest probability of appearing (or with the second highest probability). This creates a discourse that makes sense, but only symbolically. And since the possibilities of combination are so many, we are led to believe there's creativity there. But there isn't really, it's just statistics. And then comes another deception, which is using words that describe human capabilities, such as "intelligence" or "information" for things that are not and will never be human. And science generally accepts it because it does not recognize that human capabilities have an edge over those of machines in the first place.

So we shouldn't call it artificial intelligence?
Lately I've even heard talk of "empathic AI". Empathic! Capable of feeling love, compassion. Are we crazy?

So, it's not intelligent and never will be; yet even according to you it represents a great risk for humanity.
That's an interesting aspect: why does a statistical game come so close to what we do?

Yeah, why?
Perhaps because the correlation between symbol and meaning is still quite close. And so by creating very sophisticated structures, with a very high number of parameters (Gpt4 has about 2 trillion) it is possible to imitate linguistic reality well, at least on a superficial examination.

Let's go back for a moment to your theory of consciousness. How was it born?
At a certain point in my life, about thirty years ago, the interest I had in always doing new things had led me to move away from who I was, to live outside of myself instead of in the right proportion between the inner world and the outer one. I thought I should've been happy like that, but I wasn't. This unhappiness led me to have an extraordinary experience of consciousness that awakened me; and it made me understand that reality is much more than what we see. I had tried to understand reality from a scientist's point of view; but I had come closer to grasp it as a man, a conscious, animated entity. That's why I believe the soul does not exist in space-time. It exists in a deeper reality: quantum reality. From which space-time, that is what we believe to be the "only" reality, emerges.

Will we ever be able to perceive this quantum reality? Recently there has been a lot of talk about quantum computers as the next frontier of technology...
No, quantum computers are used to execute quantum programs, which are still a series of deterministic transformations, that a normal computer could also do. They just do it incredibly faster; but they can't do anything that a classical computer can't do.

Then how is such a theory demonstrable?
A scientific theory can only be falsified, refuted. If it is tested, it's good for another day; if it is falsified, it ends there. In science, this happens very often. And now my task and Professor D'Ariano's is to try to falsify the current position of science. Our theory explains reality in a completely different way, without however changing any of the laws of physics: we only argue that these laws are simply not enough. They are the symbolic aspect of reality; the semantic one exists in this deeper reality, that of these conscious quantum entities. Which is us.

Is spreading these ideas your main activity today?
In this period of my life, I'm mostly writing: I've almost finished my third book. I dedicate myself to trying to make people understand these concepts, in order to change the idea of who we are: that is, not machines. Materialism and reductionism are the fundamental problems of today: forms of thought that are good for classical physics, that of machines and computers. But not for understanding the human being.

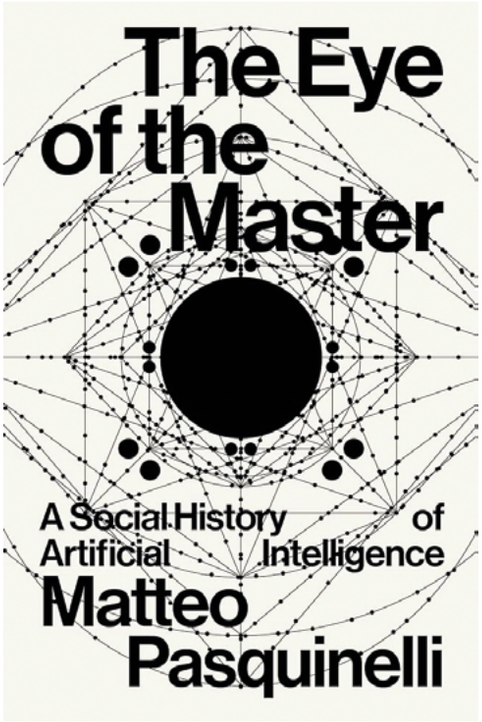
The only thing to fear about AI is its false representation

The idea that we are close to the arrival of the "ultimate algorithm" is convenient for tech companies, which push a dogmatic narrative that risks obscuring unresolved issues. For example: what does it mean to work in the service of an algorithm? Is it technology that shapes society, or the other way around?

by Giuseppe Salemme

Long dreadlocks, unkempt beard, imposing figure, extravagant glasses. You wouldn't guess it, but Jaron Lanier is one of the most influential computer scientists in the world. He was a pioneer of the virtual reality concept, a technology he developed first at the gaming company Atari and then at his own Vpl Research, one of the first companies to sell Vr headsets. Today he collaborates with Microsoft Research, but is also one of the most vocal authors and communicators warning about the dangers and false narratives emanating from Silicon Valley. His most well-known book is *Ten Arguments for Deleting Your Social Media Accounts Right Now* (Henry Holt and Co., 2018), one of the first to deal with the dangers of a passive approach to social media. Lanier has also criticized Wikipedia for making the Internet "seem like an entity with somethin to say, devaluing those who create the content," coining the term "digital Maoism." To prove his point, he debunked his own Wikipedia page, claiming it was overly exaggerated and celebratory.
In April 2023, he made headlines again for an article titled "There is no AI" published in the New Yorker, where he criticized the mystical and often apocalyptic approach shared by many of his colleagues involved in developing new generative technologies. "Mythologizing the technology only makes it more likely that we'll fail to operate it well - and this kind of thinking limits our imaginations, tying them to yesterday's dreams. We can work better under the assumption that there is no such thing as AI. The sooner we understand this, the sooner we'll start managing our new technology intelligently", Lanier writes. But what exactly is he referring to?

Jaron Lenier. Copyright: Thomas Hawk



AI is the new religion of Silicon Valley

Lanier's criticisms are partly directed at those developers who believe, for example, that we should pursue AI development even if it might endanger humanity as we know it; and partly at commentators who uncritically accept these visions as reality. The truth, as Vox's writer Sigal Samuel correctly pointed out,, is that the way we look at AI today is supported by a markedly religious framework. Tech leaders like Sam Altman and Elon Musk have often claimed that "AI will reshape society"; they reportedly talked about defeating death by uploading our minds to the cloud, or using a future perfect algorithm to make optimal decisions in every circumstance. "I think people should be happy that we are also a bit scared of it," Altman once said. The idea that the advent of a future artificial general intelligence (Agi) could cause the salvation or destruction of the world (akin to a sort of "final judgment") is very similar to Christian eschatological visions. If man is "created in the image and likeness of God," then he can have a "creative" function as well. Even Islam and Judaism allow for the idea that man could build mechanical oracles or golem saviors. Jack Clarke, co-founder of Anthropic, once tweeted: "I think a lot of the unrestrained enthusiasm for Agi is due to misplaced religious impulses of people raised in a secular culture." And Silicon Valley has become the spokesperson for these instincts. Initially, by linking every progress or new product to a broader moral goal (Facebook's purpose is to "connect distant people," Wikipedia to "make knowledge free and democratic," etc.); and today, continuing with the same approach even when, according to the words of those leading the progress, the risks would be much greater. "Just because ideas are religious doesn't mean there's something wrong with them (the opposite is often true)" the author of the Vox article explains. "Instead, we should understand the history of these ideas, so we see that they're not immutable or inevitable; certain people came up with them at certain times to serve certain purposes, but there are other ideas out there if we want them."

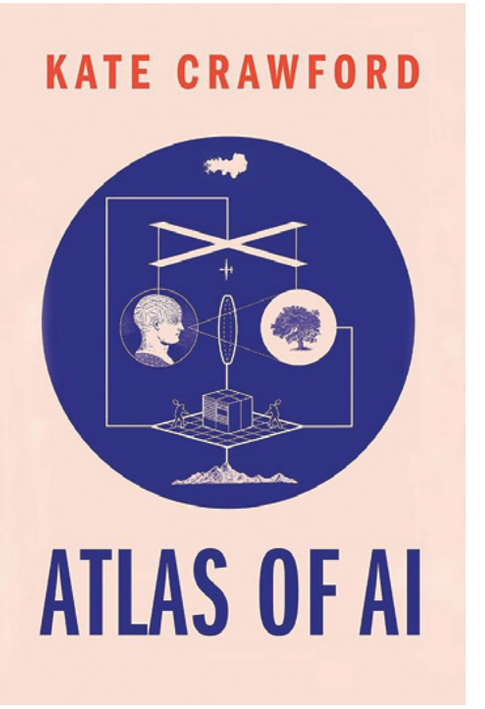
All these "ideas" generally trace back to technological determinism, the theory that assumes that technology drives the development and values of a society; the "purpose" behind their use is the same as that of the companies that spread them: positioning themselves in order to sell a product.

But what about the alternatives?

People, not bits

Lanier has his own view of AI. In "There is no AI," he compares large language models (Llm) like ChatGpt to advanced versions of websites; and image creation programs like Dall-e or Midjourney to advanced image search engines: "In both cases, it's people who have written the text and furnished the images. The new programs mash up work done by human minds. What's innovative is that the mashup process has become guided and constrained, so that the results are usable and often striking. This is a significant achievement and worth celebrating—but it can be thought of as illuminating previously hidden concordances between human creations, rather than as the invention of a new mind."

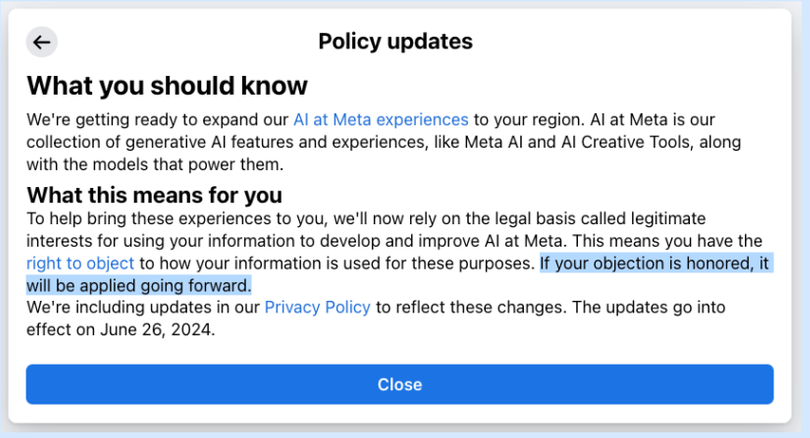
Recognizing the centrality of people and their work within the paradigm of modern AIs (something big techs have shown reluctance to do, maybe in order to avoid having to pay for the works they use to train their algorythms) is one of the keys to demystifying their narrative. Matteo Pasquinelli, a researcher in the fields of the philosophy of mind, political economy, and automation, and now an associate professor of philosophy of science at Venice's Ca'Foscari University, tries to do it in his book *The Eye of the Master: A Social History of Artificial Intelligence* (Verso Books, 2023), where he argues that the progress of automation systems, from early industrial machines to modern AIs, has been inspired not by the emulation of our brains but of the organization of labor that we have established as a society. The "eye of the master," according to Pasquinelli, is the one that, since the industrial revolution, has watched over workers in factories, studied their movements and modes of collaboration, and sought to understand how to make everything more efficient and automated. Similarly, "the current paradigm of AI - deep learning - emerged not from theories of cognition, but from contested experiments to automate the labour of perception, or pattern



recognition." In short, the way we work has shaped current AIs; which now risk perpetuating the same social hierarchies inherent in the world of work. "The class, gender, and race biases that AI systems notoriously amplify should not be seen only as a technical flaw but as an intrinsic discriminatory feature of automation in a capitalist context."

New extractivism

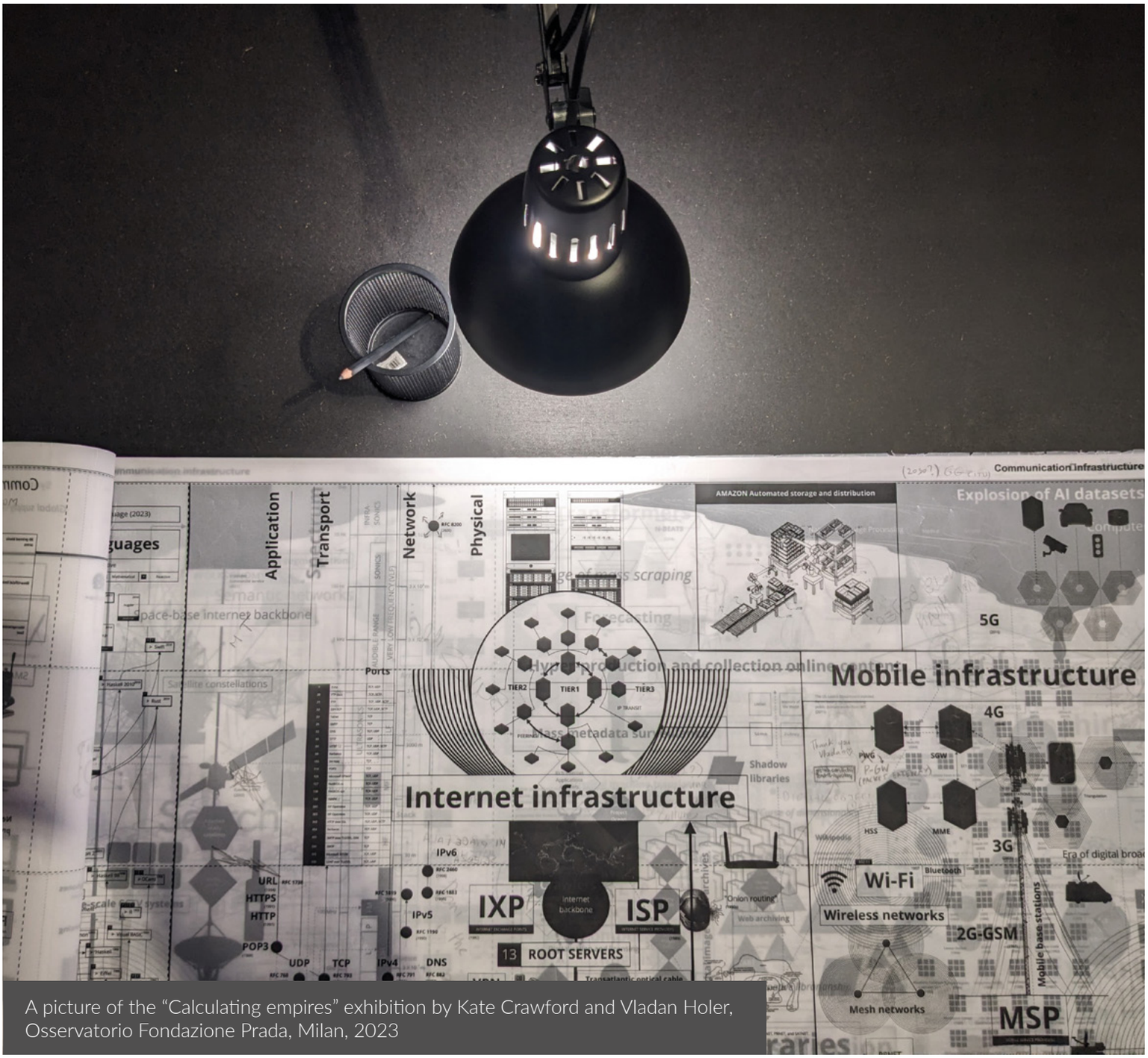
Some evidence of this pattern can already be seen today. For example, in the dynamics of data labeling work, i.e., the "tagging" of data which AIs require to assign a meaning to the symbols they elaborate (e.g., distinguishing a cat from a dog or a Shakespeare text from an Asimov one). "Human workers are essential in AI," said Australian researcher Kate Crawford to Italian newspaper *Il Manifesto*. "Without millions of operators preparing data, interacting with models, and testing products, none of the AI services would work. All this work is hidden behind complex and opaque systems and bright interfaces. Currently, much of that labor is outsourced to the Global South, in countries like Kenya, India, and Indonesia."
Crawford has been an influent voice on AI for quite some time. Her latest book, "Atlas of AI" (Yale University Press), was published in 2021. But three years earlier, she had already got together with Serbian professor and researcher Vladan Joler to create a visual representation of the entire life cycle of one of Amazon's domestic voice sensors. The result work is "Anatomy of an AI System": a gigantic map (now part of the permanent collection at MoMA in New York) that reveals the hidden iceberg of human, natural, and technological resources essential to making Alexa respond to us: from the extraction of materials that make up the microprocessors to their disposal, through data storage and algorithm training.
Our very interactions with smart devices (words, looks, likes) are an essential part of the process: captured, collected, processed, and used to make their technology increasingly indispensable to us. Vladan Joler's work focuses precisely on the extractive nature of modern technologies, a trend for which he coined the definition of *new extractivism*: "In the information age, everything becomes a potential frontier for expansion and extraction - from the depth of Dna code in every single cell of the human organism, to vast frontiers of human emotions, behavior and social relations, to nature as a whole. At this moment in the 21st century, we see a new form of extractivism that is well underway: thousands of corporate and government actors compete to win the territories of our behavioral, emotional and cognitive landscapes". Anyone who has experienced being sucked into a vortex of



ALL THE DATA IN THE WORLD IS NOT ENOUGH

"We're getting ready to expand our AI at Meta experiences to your region. To help bring these experiences to you, we'll now rely on the legal basis called legitimate interests for using your information to develop and improve AI at Meta." Many Facebook users had started receiving this notification, indicating that Meta will start using their data (posts, photos, and videos) to train its AI algorithms, unless they opted out (many eventually did, and Meta recently decided to hold back the changes). The whole point of AI algorithms is: the more data they can access, the better their capabilities are. But for some years now, tech companies like OpenAi and Meta have faced a disturbing prospect: the data we have is not enough. In an April 2024 article ("How tech giants cut corners to harvest data for AI"), five journalists from the New York Times reported that "In late 2021, OpenAI faced a supply problem. The artificial intelligence lab had exhausted every reservoir of reputable English-language text on the internet as it developed its latest AI system. It needed more data to train the next version of its technology - lots more."
To address this problem, we are witnessing various attempts at solutions. From expanding the terms of service of the services offered (now followed by Meta and previously also by Google), to signing agreements with publishers and news organizations for the use of their catalogs, up to developing automatic transcription programs for audiovisual content (sometimes risking lawsuits for violating the related copyright). Many companies also considered feeding AI texts generated by AI itself: theoretically a more responsible path, but one that increases the risks of creating a loop where errors, biases, and limitations of LIms are further reinforced. (G.S.)

Instagram reels or Tiktok videos only to emerge, exhausted, after hours of likes and scrolling, will understand the reference. But here too, Joler wanted to represent the concept graphically and metaphorically: in "New Extractivism," the web is depicted as a vast gravitational field, where giants like Google, Amazon, and Facebook end up attracting the user beyond the point of no return. The landing is in a cave inspired by Plato's, where the human ends up living solely by watching the shadow of online content in which he is reflected, while the gigantic corporate infrastructure monitors, processes, and monetizes his every interaction.



A picture of the "Calculating empires" exhibition by Kate Crawford and Vladan Holer, Osservatorio Fondazione Prada, Milan, 2023

Alessandro Picchiarelli

"After all, just as technology helps us build an advertising message, why shouldn't it help us convey a religious one?". Father Alessandro Picchiarelli, 41 years old, priest in the diocese of Assisi, professor at the Pontifical Urbaniana University of Rome, and right-hand man of Paolo Benanti, explains how AI is changing the approach to priesthood as well as the relationship between man and God

by Michela Cannovale

St. Paul's Church, Fürth, Germany. A Friday morning in December. The year is 2023. Before the altar, nearly three hundred faithfuls, including parishioners and ministers. They are all attending an experimental religious service. Leading the service is not the usual pastor, but an avatar. Yes, you read that correctly: an avatar with very human features, delivering a forty-minute sermon generated by ChatGPT that in English would sound something like this: "Dear friends, it is an honour for me to be here and preach to you as the first artificial intelligence during the Protestant congress."

We are at the Deutscher Evangelischer Kirchentag (German Evangelical Church Congress), an event held every two years in Germany that attracts tens of thousands of participants. Its founder, Jonas Simmerlein, a theologian and philosopher from the University of Vienna, told the Associated Press that this year's conference was "about 98% created by AI," including psalms, prayers, and the final blessing. "My intention," clarified Simmerlein, "was not to replace our parish pastors with robots but to use technology as a tool to assist them. For example, AI could provide ideas for upcoming sermons and speed up the writing process, freeing pastors to devote more time to individual spiritual guidance."

It makes sense. After all, why should AI only be used in business? Or in schools? Yet, for some,

the idea of a robot celebrating mass is not just a revolution but something closer to sacrilege. Take the Catholic Church, for instance. As stated in the Book of Genesis, being in the image of God, the human individual has the dignity of a person; he is not just something, but someone. He is capable of knowing himself, of possessing himself, of freely giving himself and entering into communion with other persons; he is called by grace to a covenant with his Creator, to give Him a response of faith and love that no other creature can give in his place (Gen 2:7).

The undeniable evolution

Could Father Alessandro Picchiarelli ever have imagined that the world would change so much just nine years after taking his vows? A priest in the diocese of Assisi and a professor at the Pontifical Urbaniana University of Rome, he graduated in Computer Engineering and Telecommunications before later earning a degree in Theology. He authored "Tra profilazione e discernimento. La teologia morale nel tempo dell'algoritmo" (Between Profiling and Discernment. Moral Theology in the Age of the Algorithm), published in 2021, and collaborates with Paolo Benanti, Franciscan friar, professor of ethics and bioethics, and a globally renowned influencer on topics of artificial intelligence, neuro-ethics, and post-humanism.

I ask Father Picchiarelli what he thinks about the virtual sermons in Fürth. "Technology, and particularly AI, is a product of human intelligence. And intellect, for the Christian faith, is a gift from God through our wisdom, and for this reason it must be welcomed. We cannot ignore technological products; we cannot pretend they don't exist. On the contrary, we must understand them better to understand ourselves better, as technology and man, and thus technology and faith – and I specify: any faith – always walk together."

In recent years, after all, technology has significantly changed the relationship between man and God, as well as the approach to priesthood: "Let me give you an example: as priests, we have the duty to pray the Liturgy of the Hours every day, which we traditionally did using a paper breviary, but it is increasingly common to do it using an app. Or again: in the past, meeting to plan an activity meant physically being in the same place, but today that is no longer necessary: dioceses and their delegates often meet online, which is revolutionary compared to just a few years ago."

"That said," he continues, "I do not believe that AI will truly be able to replace priests in their functions, taking their place in intimate, private, and sensitive aspects such as faith. And I say this because I am convinced that religious life, in general, is a life of relationship and in relationship. AI can certainly mediate this relationship, but it will never replace the two interlocutors who live and engage with the religious dimension."

However, Picchiarelli partially agrees with Simmerlein, the Austrian theologian, that AI can play a role in formulating a priest's homily:

> We cannot ignore technological products, we cannot pretend they don't exist

"ChatGPT is a great help when it comes to writing speeches with content that a human being cannot produce because they do not have access to such a vast number of sources in a short time. However, the homily is not just about sharing content but also about sharing experiences and encountering God that only humans can provide."

While we talk, we both know that among religious figures worldwide, there has long been a sort of friendly arms race to offer the faithful various AI-based alternatives. Catholic Answers, a Catholic group based in California, recently launched a new interactive app that, thanks to AI, allows the avatar Father Justin to interact directly with users (but they withdrew it after the virtual character repeatedly claimed to be a real clergy member with the power to absolve sins). Those seeking information about religion through technology, however, can also use other options without avatars. CatéGPT, for instance, is a chatbot designed to provide answers on catechesis by drawing on authoritative sources. Its creator, 31-year-old Swiss engineer Nicolas Torcheboeuf, developed it in 2023 based on similar interactive platforms like MagisteriumAI and Catholic.chat.

The vocations crisis

Reflecting on the evolution of religion does not eliminate a fact: the alarming phenomenon of the steady decline in priestly vocations that the Catholic Church has been dealing with for years. This decline, on one hand, stems from a religious participation that is increasingly private and individual, with the idea of community that is no longer attractive. On the other hand, it depends on the Church's inability to adapt its structure and pastoral approach to socio-cultural changes occurring in society.

According to statistical data from the 2022 Annuarium Statisticum Ecclesiae and the 2024 Pontifical Yearbook, the number of seminarians

An avatar celebrates a religious service in St. Paul Church, Fürth, Germany

across Europe decreased by 6% between 2021 and 2022. The same applies to nuns, who globally decreased from 608,958 in 2021 to 599,228 in 2022, with an average decline of 1.6% and 3.5% just in Europe.

Looking at Italy, a country that historically has a more entrenched clerical presence than elsewhere, the number of priests dropped from 48,000 in 2012 to 34,810 in 2016, and to 31,793 in 2020. In Spain, Catholic Church sources report that a single priest often serves in five or six churches.

And while European priests decrease, those serving in Europe from distant countries are increasing. In France, the Time reports that 10% of current priests come from abroad, with over 650 from Togo, Madagascar, and Burkina Faso alone. In Italy, foreign priests numbered 2,631 in 2020 (8.3% of the total), compared to 204 in 1990. Meanwhile, Italian priests are aging: their average age, now at 61.8 years, has increased by 4.1% in the twenty years between 2000 and 2020.

Alessandro Picchiarelli is 41 years old. In his environment, he is practically a youngster, having grown up on bread and algorithms. I am not too surprised when he tells me that "AI could help us identify some pathways for quick and targeted reflection on the vocations crisis. It could provide us with data, reports on the crisis at a statistical level, but also insights into the reasons for the decline that, as humans, we struggle to see. It could suggest focusing better on one aspect rather than another to investigate the underlying motivations."

My interlocutor focuses on a very true aspect of artificial intelligence, which allows us to look at reality in a new way because it can process vast amounts of information and data that we struggle to piece together. He adds timidly, "After all, just as technology helps us build an advertising message, why shouldn't it help us convey a religious one? At a communicative level, for instance, it could be a valuable opportunity to translate the evangelical message in a more comprehensible and modern way, reaching even the younger generations on social media."

Rome calling

Picchiarelli is broad-minded, but not everyone is like him. Some, as mentioned, are convinced that robots and faith can never – never, ever! – go hand in hand. That this is sacrilege. "Much depends on each of our sensitivities and the fact that not everyone knows the content of the Church's magisterial documents, which have always spoken positively and construc-

Father Justin, Catholic Answers

Alessandro Picchiarelli

tively about technique and technology. Not recognising this, in my view, undermines the Church's message, which lives and moves in this time and therefore must necessarily engage with technological reality."

Indeed, the Church has also placed itself at the centre of the debate on artificial intelligence from the beginning. In February 2020, the Vatican, through the Pontifical Academy for Life and the RenAIssance Foundation (established by Pope Francis and of which Paolo Benanti is the scientific director), became a proponent and promoter of the Rome Call for AI Ethics, a document signed, in addition to the Church, by the Italian government, IBM, Microsoft, FAO, and Cisco. A declaration of shared commitment to develop an ethical use of artificial intelligence in social, educational, and legal fields. "Creating a sense of shared responsibility with the goal of ensuring a future where digital innovation and technological progress serve human genius and creativity rather than gradually replacing them," Bergoglio said back then. In other words: since machines cannot think for themselves, we must think for them, making ethically based choices. This aligns with the principles of the latest European AI Act.

CatéGPT is a chatbot designed to provide answers on catechesis by drawing on authoritative source

"As I was saying," Picchiarelli comments, "when the Vatican looks to the future, the adoption of AI represents an opportunity to enhance the worship experience, strengthen pastoral functions, and optimize community activities. Under Pope Francis's leadership, the Church addressed the issue of new technologies well before the release of ChatGPT. The explosion of generative AI tools is certainly a revolution which, like any revolution, can be dangerous. To prevent this, it is crucial that artificial intelligence is guided by human intelligence."

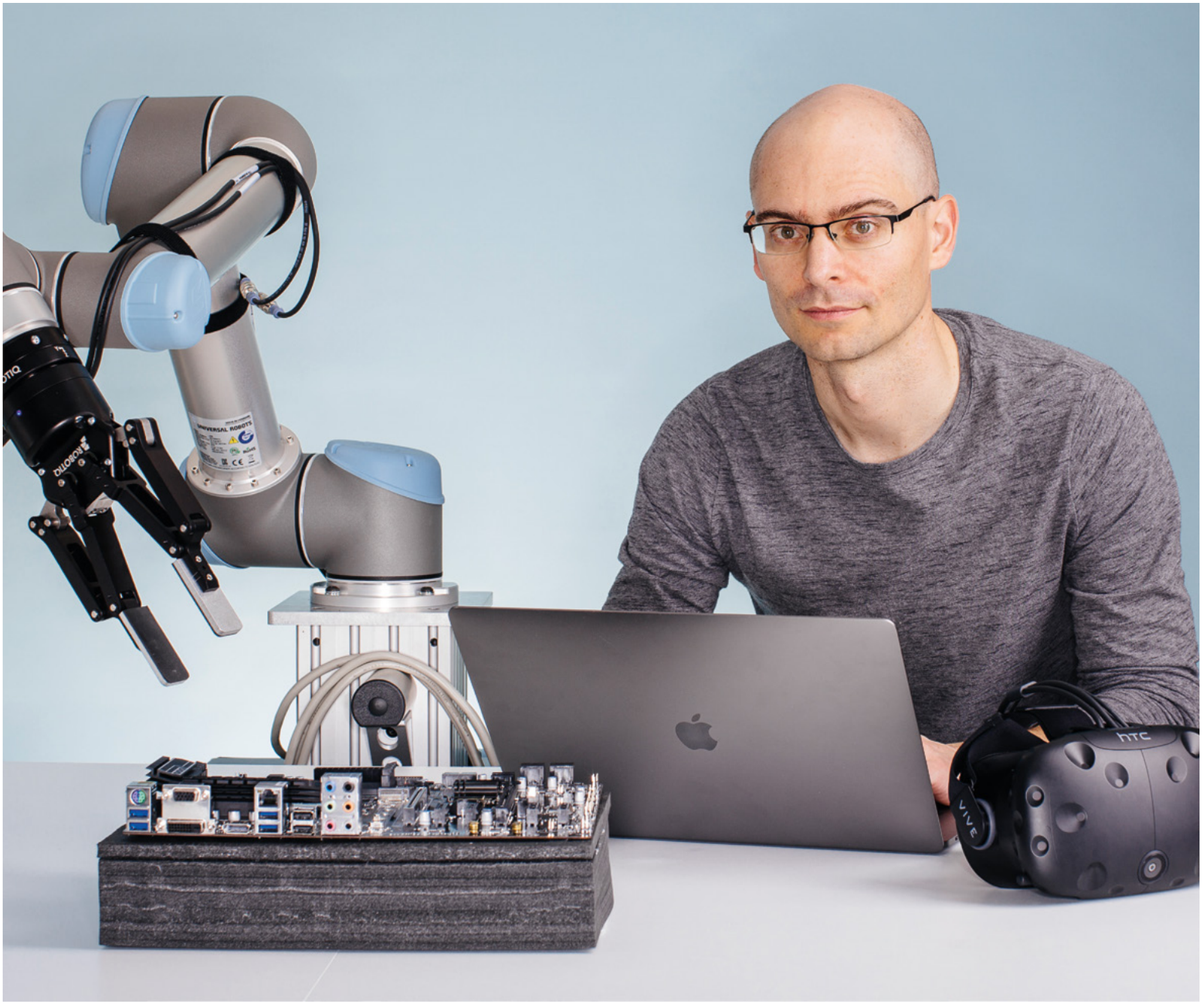
Artificial Intelligentsia

by Letizia Ceriani

From now on, "every year will be the year of artificial intelligence," *La Repubblica* headlined in early 2024. Technologies that can mimic the functioning of the human brain have been the focus of researchers, professors, philosophers, engineers and investors for more than a decade. MAG wanted to compile profiles of some of the personalities to keep an eye on in the modern debate about AI: from those who were involved in its origins to those who will inspire its development.

Pieter Abbeel

Revenge of the nerds. Is AI ready to move beyond pattern recognition to create autonomous systems that achieve goal-oriented behaviors? What characteristics make an application suitable for these techniques? What safeguards are in place to ensure that autonomous systems remain safe? These are just a few of the questions that guide Pieter Abbeel's scope of research. A professor of electrical and computer engineering, Abbeel is director of the Berkeley Robot Learning Lab, and co-director of the Berkeley AI Research (BAIR) Lab at the University of California, Berkeley. He is also co-founder of Covariant.ai, a venture capital-funded start-up that aims to teach robots new and complex skills. His research is considered very cutting-edge in the field of robotics and also machine learning, especially in deep reinforcement learning, meta-learning. Abbeel, in a nutshell, studies the influence of artificial intelligence on society. In 2021, he joined AIX Ventures as an investment partner, representing a new generation of nerds who are pouring straight from universities into the world of finance.



Dario and Daniela Amodei

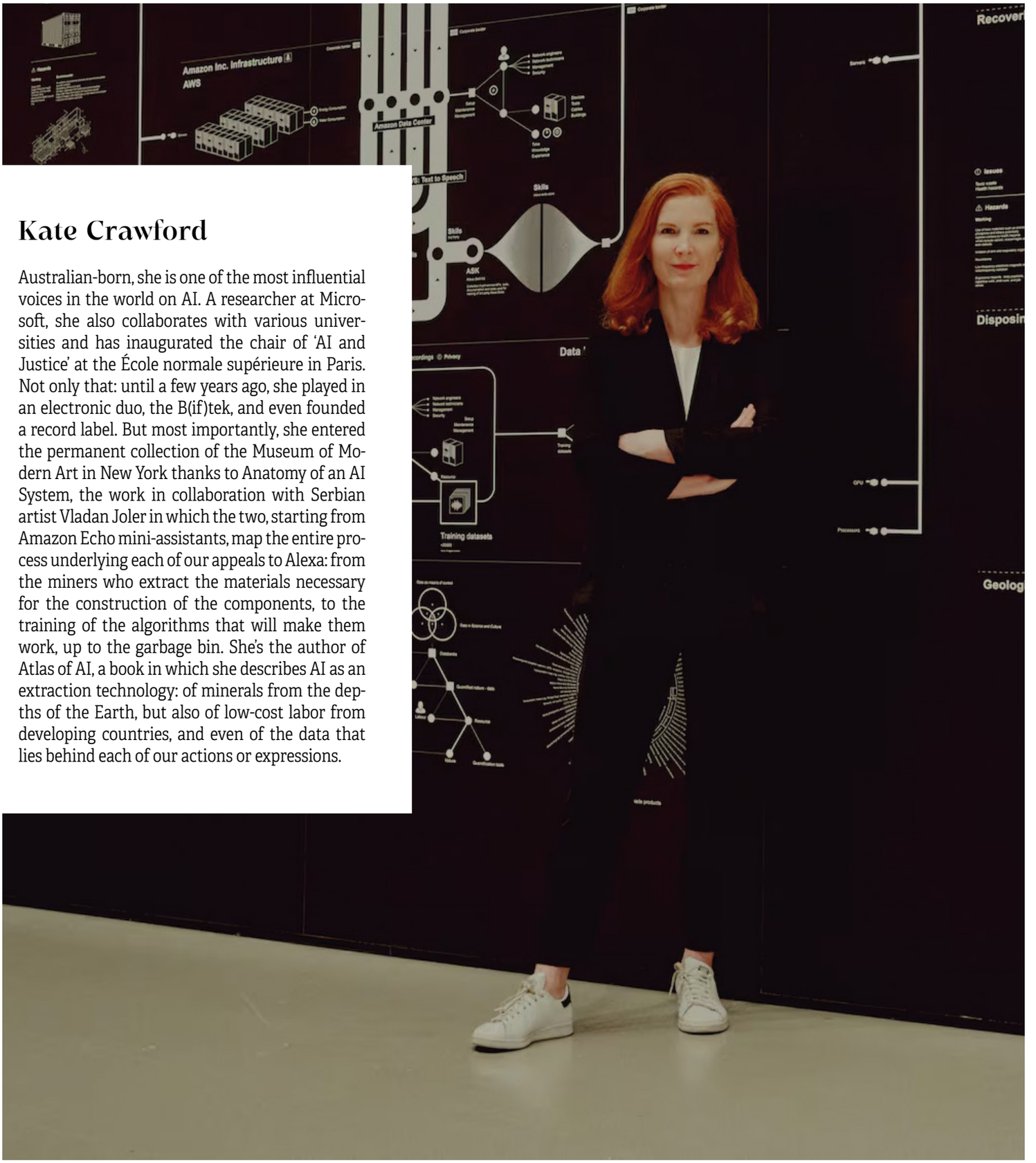
"They have been referred to as 'the Midas siblings'. Italian-Americans – their father is from Massa Marittima, their mother from Chicago – they are respectively CEO and president of Anthropic, a start-up that develops Claude, a competitor to ChatGPT, based on a 'constitution' inspired by the principles of the Universal Declaration of Human Rights. Daniela, with a background in humanities, specializes in risk management of AI systems and has worked for the online payment company Stripe; Dario, a biophysicist, is the author of papers that have become fundamental for AI development and has worked for Google Brain and Baidu (the 'Chinese Google'), where he developed one of the first systems for understanding human language. In 2020, they left OpenAI, where they were vice presidents of the safety and research branches respectively, because they intended to create an AI more aligned with human values, through a more ethical and secure approach. Anthropic is born, receiving more than 7 billion euros from Google and Amazon in 2023. The company's mission seems to be bearing fruit: in May 2024, it's precisely a team of Anthropic researchers who first crack open the black box inside LLMs, managing to map the millions of connections behind a response from the chatbot Claude."

Paolo Benanti

'Artificial intelligence would be more human if it knew how to doubt.' The Franciscan Paolo Benanti, theologian and philosopher, is one of the world's leading experts on AI. In the polarized reflection between enthusiasts and pessimists, he emphasizes the power of technological progress and the need to use it for good, building 'ethical guardrails': a process he himself defines as 'algorethics'. On January 5, 2023, he was appointed by the Italian government as president of the Commission on Algorithms and AI for Information, and in October 2023, he was called by Secretary-General Antonio Guterres as the only Italian in the United Nations international committee of experts on AI. Benanti, who is also an advisor to Pope Francis, deals with ethics, bioethics, and the ethics of technologies. His studies focus on innovation management: internet and digital age, biotechnologies for human improvement and biosecurity, neurosciences and neurotechnologies. He is also a corresponding member of the Pontifical Academy for Life, with a particular mandate for the world of artificial intelligence.

Brando Benifei

He was the battering ram of the European Parliament throughout the entire procedure that led to the approval of the AI Act, the world's first legislation designed specifically to mitigate the main risks that may arise from the use of AI systems. From Liguria, a member of the European Parliament since 2014, as a representative of European citizens' concerns, he assumed the role of an 'embedded popularizer' throughout the regulatory process: always trying to explain the rationale behind every rule; but also to recount the problems that had led to negotiation stalemates, or describe the strategies and interests of the various parties in the procedure. The AI Act has not yet come into force. But if it will follow the footsteps of the Gdpr, and become not only the inspiration for similar regulations in other countries, but also the standard to which organizations worldwide will have to conform in order to access the European market, it will have been because of him, at least in part.



Kate Crawford

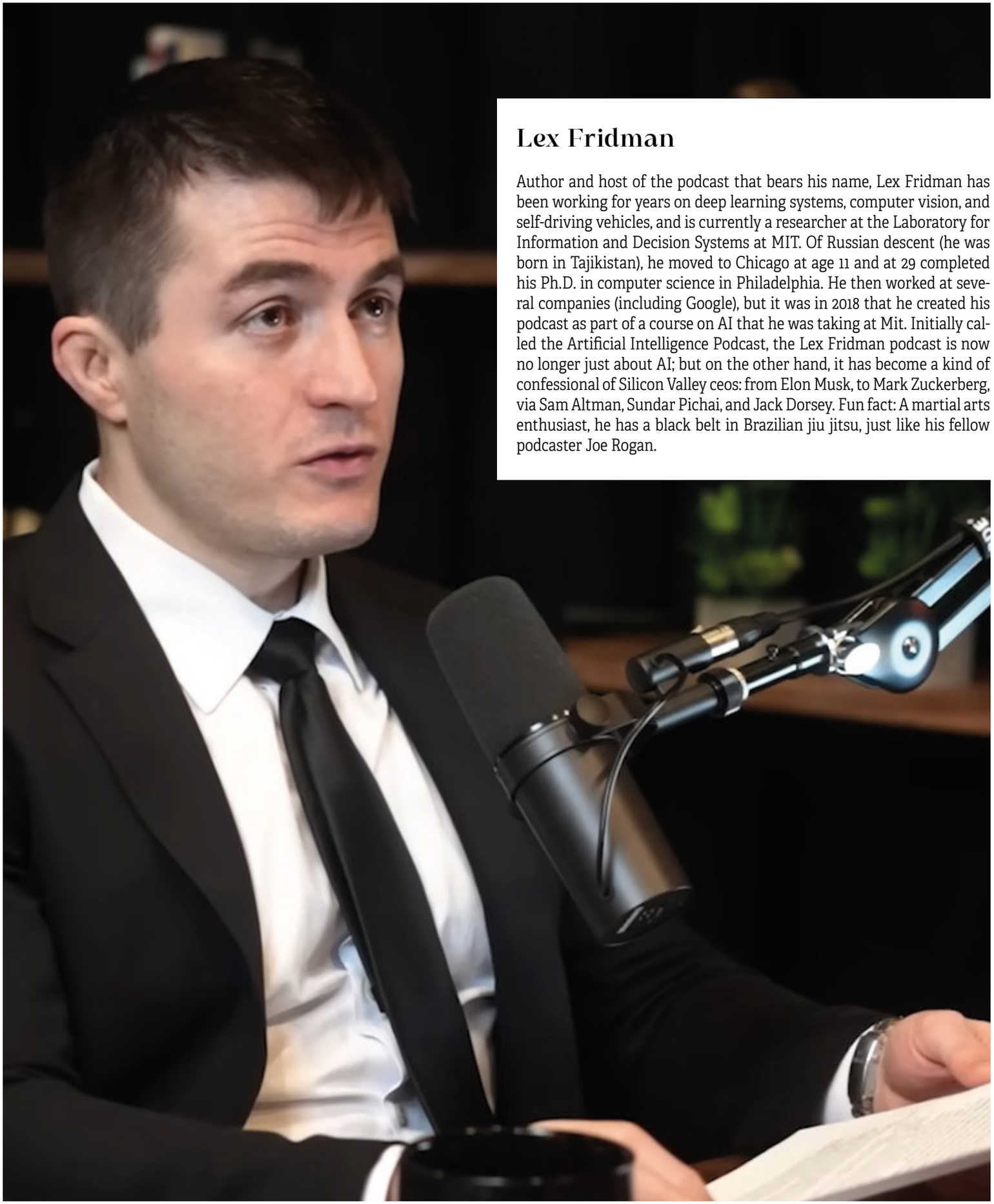
Australian-born, she is one of the most influential voices in the world on AI. A researcher at Microsoft, she also collaborates with various universities and has inaugurated the chair of 'AI and Justice' at the École normale supérieure in Paris. Not only that: until a few years ago, she played in an electronic duo, the B(if)tek, and even founded a record label. But most importantly, she entered the permanent collection of the Museum of Modern Art in New York thanks to Anatomy of an AI System, the work in collaboration with Serbian artist Vladan Joler in which the two, starting from Amazon Echo mini-assistants, map the entire process underlying each of our appeals to Alexa: from the miners who extract the materials necessary for the construction of the components, to the training of the algorithms that will make them work, up to the garbage bin. She's the author of Atlas of AI, a book in which she describes AI as an extraction technology: of minerals from the depths of the Earth, but also of low-cost labor from developing countries, and even of the data that lies behind each of our actions or expressions.

Federico Faggin

Physicist, inventor, entrepreneur, philosopher: recounting the life of Federico Faggin would require a monograph in itself. He, meanwhile, has written two books. In the first, Silicon, he tells the first part of his life, and then the story of his inventions: among them, the first microprocessor (with Intel), the first touchpads and the first capacitive touchscreen mounted on a cell phone (with Synaptics, a company he co-founded). For any other genius of our time that would be enough. But Faggin is not happy: he realizes this thanks to what he calls "an extraordinary experience of consciousness," which convinces him to change his life. In Irreducible, he then explains his "theory of everything" conceived over the past three decades together with another physicist, Mauro D'Ariano. An expert in neural networks, which he worked on when the developers of today's Llm were not even born, his vision of AI reconciles two seemingly antithetical positions: yes, it is a revolutionary technology capable of changing the world (for better or worse); no, it has nothing intelligent at all (and never will). He confided to MAG that a third book is forthcoming (see interview on p. XX).

Luciano Floridi

«AI is an opportunity, as long as it does not erode our ability to make decisions». Among the most influential voices in contemporary philosophy, Floridi stands out within the debate on the dangers of generative AI for his lucid and disenchanted look at the potential and limits of new technologies. Floridi argues that developments in the field of information and communication technologies change the answers to such fundamental questions. The boundaries between online and offline life tend to disappear and we are now seamlessly connected to one another, becoming an integral part of a global "infosphere." The expression «onlife», a term coined by Floridi, increasingly defines our daily activities. Indeed, communication technologies have become forces that structure the environment in which we live, creating and transforming reality. A naturalized British-Italian philosopher and sociologist of law, he is currently full professor of philosophy and ethics of information at the Oxford Internet Institute of the University of Oxford, where he is director of the Digital Ethics Lab, as well as professor of Sociology of Culture and Communication Processes at the University of Bologna. He is known for his foundational work in information philosophy and computer ethics. He was founder and coordinator, with Jeff Sanders, of IEG, an interdepartmental research group on philosophy of information at the University of Oxford. He has a good sense of humour.



Lex Fridman

Author and host of the podcast that bears his name, Lex Fridman has been working for years on deep learning systems, computer vision, and self-driving vehicles, and is currently a researcher at the Laboratory for Information and Decision Systems at MIT. Of Russian descent (he was born in Tajikistan), he moved to Chicago at age 11 and at 29 completed his Ph.D. in computer science in Philadelphia. He then worked at several companies (including Google), but it was in 2018 that he created his podcast as part of a course on AI that he was taking at Mit. Initially called the Artificial Intelligence Podcast, the Lex Fridman podcast is now no longer just about AI; but on the other hand, it has become a kind of confessional of Silicon Valley ceos: from Elon Musk, to Mark Zuckerberg, via Sam Altman, Sundar Pichai, and Jack Dorsey. Fun fact: A martial arts enthusiast, he has a black belt in Brazilian jiu jitsu, just like his fellow podcaster Joe Rogan.

Author: Ramsey Cardy/Collision via Sportsfile

Geoffrey Everest Hinton

«Then I heard the old man who created AI say, 'It's not safe, because AIs have minds and these assholes are going to start doing their own thing' - and then I thought, we're in a fucking movie! ». Speaking (we clarify, for the avoidance of doubt) is not Geoffrey Hinton, one of the godfathers of AI, but rapper Snoop Dogg, in response to the latter's departure from Google in 2023. A British computer scientist, naturalized Canadian, Hinton is now 77 years old and is known for his contributions to the development of machine learning. A professor at the University of Toronto and a researcher at Google Brain, in 2017 he founded the Vector Institute for Artificial Intelligence, for which he serves as principal scientific advisor on a pro bono basis, and in 2018 he won the Turing Prize (the most prestigious award in computer science) for his work on neural networks. When he leaves Google after ten years of collaboration, he justifies the choice with concern about the latest developments in AI, the misinformation campaigns it may generate, and especially the possibility that "intelligent machines" will learn typically human ways of reasoning. All this from one of the very minds that has contributed significantly to the development of deep learning by kick-starting an AI renaissance in the not-so-distant past. He recently advocated the introduction of a universal minimum income to make up for the loss of jobs caused by the spread of AI – something Hinton seems quite certain about...

Mira Murati

In November 2023, she becomes the ceo of OpenAi. Only for 72 hours, during the "five days of chaos" that began with Sam Altman's dismissal and ended with his reinstatement as head of the ChatGpt company. But the fact that the choice had fallen on Mira Murati, a mechanical engineer born in Albania (she also speaks Italian), had surprised few. She joined OpenAi in 2018 after several stints at tech companies (including Tesla) and became the company's chief technology officer in 2022 just months before ChatGpt's release. While Altman, an investor and startupper, represents the commercial soul of the company, Murati is the true technology leader, and is considered by many to be the real mastermind behind the Llm revolution. She herself calls ChatGpt «her baby»; and while she admits that the process by which humans and AI shape each other involves risks, she is the one who puts her face on it when it comes to introducing new products (such as the recent Gpt4o). Satya Nadella, Microsoft's ceo, has also sung the praises of her technical, organizational and business skills.

Matteo Pasquinelli

Professor of philosophy of science at Ca' Foscari (and previously in New York and Karlsruhe), Matteo Pasquinelli's expertise interweaves philosophy with art, economics and automation. In his latest book, The Eye of the Master (to date available only in English but in the process of being translated into more than ten languages, including Italian), he traces what he calls "a social history of AI": that is, he traces all the attempts made by human beings to automate work or parts of it, intersecting their history with that of the power relations of the relevant era. According to Pasquinelli, the real goal of AI development is not to mimic intelligence in a biological sense, but in an economic sense: and thus, beyond the ideological propaganda regarding the imminent arrival of a "final algorithm," AI would reflect not our intellectual capacities, but the organization of labor and social relations that have settled over time.

Donatella Sciuto

«On artificial intelligence, we do not need bans or new courses but critical spirit». Rector of the Politecnico di Milano for the 2023-2028 term, Sciuto is one of the academic personalities best known for her interest in the use of new AI-based tools within universities and among the younger generation. Aware of the benefit of these tools-widely used even at his university-he has often stressed the need to understand their complexities in order to balance the risk of an inflation of graduate courses focused on using the tool without possessing the knowledge of the technology that drives it. After earning a doctorate in electrical and computer engineering from the University of Colorado - Boulder, and a Master's degree in Business Administration from Bocconi University, she became a researcher at the University of Brescia in 1986, returning in 1992 to the Politecnico di Milano as an associate professor and was promoted to full professor in 2000. She became vice chancellor of the university in 2010 and executive vice chancellor in 2015. She has been teaching computer architecture and operating systems for more than a decade.

The Unexpected Giant

Until a few years ago, Nvidia was known only to gamers; today it's worth more than Tesla and Amazon combined. Here's how its chips, servers, and data centers are fueling the growth of artificial intelligence

by Claudia La Via

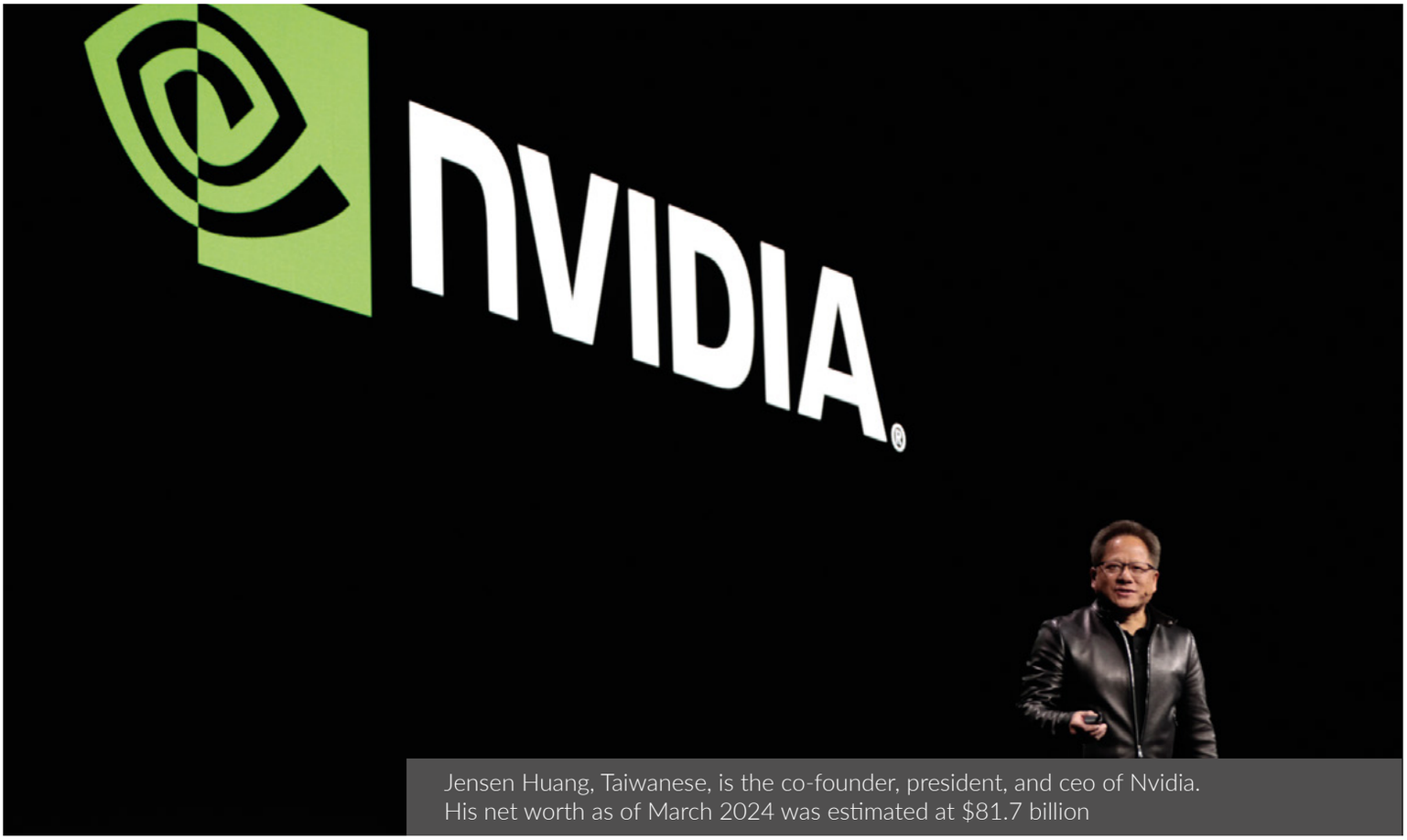
One of Nvidia's "Carter" robots

Since 1993, Santa Clara-based company Nvidia has been designing chips that power a wide range of consumer applications. Unless you were deeply interested in computer gaming, you probably had no idea of what it was or what it did until very recently; but now Nvidia's importance has skyrocketed thanks to its pioneering role in the spread of AI.

The strategy behind the rise

While companies like Intel and Amd had dominated the chip sector in the Us for decades, Nvidia entered the market by introducing increasingly sophisticated Gpus (graphics processing units): their graphic processing capability became crucial as high-quality videos began to spread. Initially, Nvidia was closely associated with supplying video cards for computers or video game consoles like Microsoft Xbox and Sony PlayStation. The general growth of Silicon Valley over the last 10-15 years then pushed Nvidia to diversify its offerings; and the pandemic further accelerated Nvidia's revenues. But it was the AI revolution that began with the debut of ChatGpt in late 2022 that truly consolidated its role as a tech giant,. In June, Nvidia reached a $3,35 trillion market capitalization in Wall Street, surpassing Microsoft to become the most valuable company in the world (more than Tesla and Amazon combined). As shown by Goldman Sachs analytics, much of this result was built in the last 16 months, in which capitalization grew by almost $2 trillion: since ChatGpt's debut, investments in AI have increased dramatically, along with the demand for semiconductors produced by Nvidia. Unlike most competitors, the company was a pioneer in adapting its chips to AI-related activities (such as AI software development), thus becoming the main hardware supplier of this newborn industry.

In recent years, Nvidia has also developed a significant amount of software for key AI applications in areas such as healthcare and robotics. Tools created to leverage the capabilities of its chips have often become industry standards, and its semiconductors now power the activities of companies like Apple and Meta. So today, the company's graphics cards are the engines driving the artificial intelligence technologies that are reshaping virtually every industrial sector, creating new development opportunities. The latest rumors also speak of a possible landing in the PC world, which had been a private affair between Intel and Amd for decades.



Jensen Huang, Taiwanese, is the co-founder, president, and ceo of Nvidia. His net worth as of March 2024 was estimated at $81.7 billion

Towards a powered by Nvidia future?

Nvidia's transformation from a simple graphics card manufacturer to a driving force in AI has uncovered the company's innovative spirit and adaptability. And this trajectory seems destined to continue: after the tug-of-war over the failed acquisition of Arm, a British company specializing in the production of chips based on the eponymous architecture, Nvidia has nevertheless acquired a stake in the latter for $147.3 million, confirming its dominant position in the semiconductor market. The company is heavily investing in various AI-based innovations too: Nvidia Omniverse, an under development platform for real-time collaboration and simulation of 3D design, could revolutionize sectors such as architecture, entertainment, and manufacturing; and, in perspective, fields like autonomous driving, smart cities, and advanced robotics. As AI-related technology continues to evolve, Nvidia's commitment could prove crucial in addressing some of the world's most pressing challenges, from climate change to healthcare. These innovations could be destined to shape the future not only of technology but of society as a whole, and Nvidia could become one of the pillars of modern computing and a visionary leader of this new technology industry.

The Nvidia headquarter in Santa Clara, California

Hunting for bias

Luna Bianchi, after 11 years spent in Ermenegildo Zegna, where she was manager of the intellectual property department, is now ceo and co-founder of Immanence. She told MAG about the year in the life of the first start-up in Italy that offers ethical evaluation services in the field of "Responsible AI"

by Letizia Ceriani

Luna Bianchi

As Europe prepares to adapt to the new regulations contained in the AI Act, approved in mid-March by the European Parliament and aimed at regulating the impacts and risks of the use of AI-based tools, Italy is going through a new evolutionary phase that invests, at an increasing pace, internal structures, governance, welfare and workers' rights. Technology has made our lives slide from the analog to the technological, from offline to online, catapulting us into a perpetual «onlife»; the philosopher Luciano Floridi thinks so, describing our new everyday life as perpetually split. A split that carries risks and above all requires awareness.

Behind the widespread belief that using AI involves the mere automation of routine tasks, the image of a «highly disruptive» tool is reinforced, says Luna Bianchi, now ceo and co-founder, along with Diletta Huyskes, of the startup Immanence. In her previous life, Bianchi was in-house counsel, and has always been passionate about digital philosophy and copyright. Founded to provide assistance in assessing the ethical impacts and risks given by the use of AI tools, Immanence offers a set of ethical consulting services that accompanies organizations in planning strategies that implement AI technologies that are ethical, respect human rights, sustainable-from a social and environmental standpoint-and compliant with regulations. The founders' goal is to promote a new culture of responsible innovation that aims to prevent ethical risks, rather than mitigate them once caused. It is one of the few companies in Europe to offer context-appropriate digital governance definition and training in "Responsible AI" to best hit those European goals drafted in the AI Act. The European act has been in the works for about three years and the scenario we are facing has gone far beyond that: today algorithms know how to produce models to assist but also to influence or make decisions that affect people, in every sphere of life.

The best way to do something is to do it (well)

Compared to other consulting models, and the "checklist" approach, Bianchi and Huyskes' startup takes a more cautionary and humane approach. It carries out a mission to "counter algorithmic bias, which can codify discrimination against oppressed people (including women) and minorities, and other unintended harms due to a failure to assess human rights, which may be compressed or violated, or, in general, to poor management".

Immanence partners in several areas relevant to individual assessments in the areas of human rights, algorithmic fairness and explainability, but also privacy, data science, digital administrative law, and cybersecurity, collaborating with research centers, consulting firms specializing in the development and implementation of AI systems, and law firms. It is a privileged observatory, which is committed to maintaining as its specific focus the uniqueness of human surveillance, in the belief that consulting in technology ethics coincides with «accompanying and preparing decision-makers in the delicate stages of balancing interests, rights and other instances, which emerge when introducing a technology into a social context, insisting on a construction of ethical tools by design, that is, immersed in an ethical framework from the earliest stages of design».

Between our inputs and the autonomy of the machine, risks and opportunities find asylum. What if AI, for example, is misused? It is human ingenuity that is its limitation. So banish, then, the more vivid images left to us by the sci-fi literary and cinematic tradition where the human is replaced by the robot, or the alarmist statements of the "tech biggies" that sound more and more like commercials... No replacement, Bianchi reassures, but a good deal of sophistication. The most important issue with AI is its governance, which must be kept under human control, keeping in mind that it is a particularly powerful tool, capable of influencing the contexts to which it is applied, and which, if well directed, is potentially beneficial to humanity.

Tell me what bias you have and i'll tell you who you are

«Artificial intelligence, working on clustering of data and information--from a technical point of view, it looks for patterns and correlations between data sets given to it-necessarily ends up also clustering behaviors, people, individual differences, simplifying reality», Bianchi says. On the risk scale, the second theme has to do with the impact of AI instead: when automated decisions are made on the basis of those "boxes" the decision impacts not just one person but the whole group of people of which that person is a part. Algorithms produce models to assist but also to influence or make decisions that affect people, in every sphere of life, from granting a mortgage to preselecting a resume for a job position. The problem arises primarily from the fact that the data being used to educate an AI contains historical, social, and cultural bia-

ses. The algorithm merely learns and replicates them, indeed, amplifies them. «Today most of the AI models we interact with are designed by a very specific group of people, developed in societies with very specific characteristics and power dynamics, and this is reflected in the way the tool is used, giving a result that tends to standardize and codify a certain worldview, blocking social evolution».

When such biases are present in AI processes, in algorithm processing and implementation, whose responsibility is it? Certainly not the machine, to which we supply the data. «The responsibility is all human». Immanence's ceo stresses the urgency of «being adults», becoming aware of the impacts of AI on society and the consequent risks it poses to society itself and to the organization that develops or implements it.
It is a transition that requires dedicated strategic planning, without underestimating the unexpected consequences, AI malfunctions or misuses, and possible harms. The implementation of the AI Act will be crucial in this. The European act requires that AI systems be developed and used in a way that includes diverse subjects, promoting equal access, gender equality and cultural diversity, and avoiding discriminatory effects and unfair biases that are prohibited by Eu law. The use of high quality and representative data, the assessment of impacts and the implementation of a risk management system will have to be ensured, and to do this, implement appropriate governance, integrity and data management practices. But there are many grey areas that have not yet been uncovered.

The dark side of the law

Since the passage of the regulation, the race for the most advanced, most effective and adaptable artificial armaments has begun. However, there is a lack of education and knowledge. Into this cultural vacuum comes Immanence, to come alongside organizations encountering increasingly innovative digital tools, keeping as a focus «the importance of human judgment», in a context where it becomes increasingly difficult to keep track of the actual impact on the not-yet-automated world, but also to reflect on what are the criteria-philosophical, social, legal-through which to approach these complexities. According to Bianchi, there is a need to engage now: there is not only an economic issue - preparing for AI Act compliance close to the deadline will cost a lot more in terms of corporate sustainability - but above all a social one. «We have to choose today what kind of society we want to live in tomorrow». Among the first challenges is to look with fresh eyes at the structures that have governed our communities, from art to law to technology, to imagine how they might transform in this new sociotechnical context.
What is most intriguing today is to investigate the implications of new technologies to the extent that AI invites us to reflect on who we are and who we might become. If, as mentioned, human progress follows the principles set forth by humans, the limitation is precisely us, who are not always moved by the best intentions. «The risks of technology come as much from how you use it as from how and with what values you build it».

Luna Bianchi and Diletta Huyskes

From screen time to face time: this is how AI will improve your doctor's appointments

How artificial intelligence is transforming healthcare in Spain and around the world, from Paco Estella, head of Health at Microsoft Spain.

by Julia Gil

Not even healthcare will be the same: soon AI will provide us with tools capable of streamlining, if not revolutionizing, many aspects of the healthcare professionals and patients' lives. Paco Estella, head of health at Microsoft Spain, is already managing the implementation of some of these technologies. As a specialized professional in the fields of bioengineering and artificial intelligence, he began his career in neuroscience at Jackson University Hospital in Miami, and has held various roles over the years, always related to health and digital health, in companies such as Hp, Boston Scientific, and Pixium Vision, in Spain, Europe, and globally. In this interview, he explains how AI can not only improve efficiency in medical care but already has the support of 48% of Spanish patients.

How is the healthcare landscape changing in Spain and globally thanks to the use of AI?
According to a study conducted by our partner Accenture, Spain is a leader in implementing AI-assisted applications in the healthcare sector. The report reveals that 72% of healthcare companies are already experimenting with the technology, and over 90% plan to do so. At Microsoft, we see AI as a "co-pilot": we believe it can be a valuable tool to assist and accompany healthcare personnel, never to replace them. It's a technology with the potential to help improve medical care and communication, excessive bureaucracy, and the management of large amounts of health data.

> We believe AI can be a valuable tool to assist and accompany healthcare personnel, never to replace them

How?
I would divide the possible impacts of AI into four areas: diagnosis, treatment, prevention, and management. From a diagnostic point of view, it can support doctors in analyzing medical images, clinical data, patient histories, or genetic information, allowing early identification of cancer, diabetes, or neurodegenerative diseases syntoms. It can also help improve medical treatments by personalizing, optimizing, and monitoring them, including through intelligent devices such as wearables or other sensors. Regarding prevention, in addition to facilitating early diagnoses, AI can be useful in promoting healthy lifestyle habits by analyzing public health data or information in medical records to detect trends or disease outbreaks in advance. Finally, it can improve the organization of health services, optimizing the use of resources and reducing costs.

How can AI improve the organization of health services?
I'm thinking, for example, of more efficient allocation of staff or equipment based on factors such as demand, availability, or urgency; but also of useful tools to allow collaboration between healthcare professionals to reduce time spent on routine tasks or creating documents: overcoming the initial "blank page" block will allow them to dedicate more quality

Paco Estella

48% of Spanish patients support the use of AI by doctors

time to their patients. It can also be useful in mitigating the problem of doctor shortages: according to the World Health Organization, by 2030, the sector will face a shortage of about 9 million doctors and nurses.

What is Microsoft specifically developing for the healthcare sector?
We have been collaborating for several years with hospitals and health services in various regions of Spain, providing them with our technology. To do this, we have a cloud-based program called Microsoft Cloud for Healthcare, which allows us to offer specific configurations for the medical field and technical support thanks to the ecosystem of our partners, companies with great experience in the healthcare sector.

And how do hospitals use them?
The Madrid Health Service (Sermas), for example, is a pioneer in using generative AI technologies for the clinical diagnosis of rare diseases. Thanks to our collaboration with our partner, Fundación 29, we have equipped general practitioners with DxGpt, an application capable of providing a first-level diagnosis of some rare diseases in just a few minutes: an operation that previously could take up to five years and involve several specialists.

Are there other examples of successful experiences?
One is certainly the creation of Health Copilot Lab, a concept developed by Microsoft and the Sant Joan de Deu Hospital in Barcelona. It's a laboratory for AI projects applied to the healthcare sector, which aims to improve patient flow coordination, optimize resource and bed allocation, and prevent saturation problems. Additionally, we have announced a strategic collaboration with the Ribera Salud group to allow its doctors and nurses to reduce administrative activity, enabling them to focus on what's most important: patient care. On the other hand, Ribera has already implemented its modular medical history platform, Cynara, in the Microsoft Azure cloud.

In your experience, what do patients think about the possibility of doctors being assisted by AI?
Our reports tell us that 48% of Spanish patients support the use of AI by doctors. Particularly in the doctor-patient relationship: 53% of patients believe that during visits, doctors are too focused on the computer, and 31% say they feel uncomfortable because of this. We have therefore designed an assistant called Dragon Medical One, which automatically creates a report of the dialogue between patient and doctor, suggesting possible diagnoses or adding recommendations to the medical record: we aim to reduce by 80% the time doctors and nurses spend writing reports, allowing them to spend more time in direct interaction with each patient.

External view of the Microsoft offices in La Finca, Madrid, Spain

Internal view of the Microsoft offices in La Finca, Madrid, Spain

Is there any specific data available on the topic?
A meta-analysis developed by Boston Strategic Partners has synthesized the results of a large number of studies on the economic impact and clinical benefits of AI use in the healthcare sector. So far, most studies (41.9%) have focused on supporting disease diagnosis. Several studies have shown an increase in clinical efficiency, thanks to the reduction in hospital stay times. 58.3% of the studies then show positive financial impacts, thanks to improved efficiency in disease detection; in general, the potential cost reduction thanks to AI is supported by 80% of the studies. Finally, the studies have so far shown that costs would go down for patients as well (especially in some specific scenarios, such as diabetic retinopathy screening); and at the same time, the treatment of disorders such as sleep apnea would improve without particular additional costs.

> Technology should relieve doctors of secondary tasks and reduce hospital pressure, allowing healthcare to focus on patient well-being

How can we maximize the benefits and minimize the risks, including ethical ones, of developing such technologies?
First, by involving professionals, patients, and society in general in the design. Then it is necessary to ensure the quality of the data on which the tools are built, to avoid bias or other vulnerabilities, and at the same time make the work of AI transparent and traceable so as to increase patient trust and allow human monitoring. And obviously, it is necessary to educate society and train professionals.

What advice would you give to healthcare providers who are considering adopting AI solutions in their clinical practices?
In our view, the key to quality healthcare lies in effective interaction between doctor and patient. Therefore, the first steps in adopting AI must go in that direction. Technology should relieve doctors of secondary tasks and reduce hospital pressure, allowing healthcare to focus on patient well-being. It is the patients themselves who are calling for a digital transformation of their healthcare experience: the demand is real, and this means that it is possible through AI to improve the doctor-patient relationship starting from the bottom up.

When fame has no human face

The rise and regulation of virtual influencers

by Ilaria Iaquinta

They do not exist. Not in our tangible reality, at least. Yet, they command a following that rivals any human influencer across platforms like Instagram, TikTok, and OnlyFans, and some have even transcended the traditional boundaries of social media to make marks on television, the music scene, and even the political arena. They are the virtual influencers, products of artificial intelligence and advanced technologies, born from the vision of young innovators or marketing agencies.

These digital entities are revolutionizing how brands interact with consumers, shaping the future of marketing and social interactions, and proving to be much more than mere technological novelties.

Who are they?

Several figures stand out in this phenomenon, each carving out a significant niche in the communication strategies of major international brands. **Lil Miquela**, launched in 2016 by the Los Angeles collective Brud, boasts over 2.6 million followers and has even ventured into the music industry. **Lu do Magalu**, an avatar created for Magalu, one of Brazil's largest retail chains, has amassed 6.4 million followers globally. **Shudu Gram**, dubbed "the world's first digital supermodel", created by British artist **Cameron-James Wilson** in 2017, has sparked debates on the ethics and use of virtual models in the fashion industry. **Noonoouri**, active in the luxury sector, has colla-

Aitana

borated with top-tier brands like Dior, Versace, and Valentino.

In the Spanish scene, figures like **Alba Renai** (see dedicated interview) and **Aitana** stand out. The latter, a creation of **Rubén Cruz** and his agency The Clueless, captures attention not only with her iconic pink hair but also through her considerable economic success, earning up to €10,000 a month. Aitana has established herself as a leading face for prestigious fashion brands, gathering over 121,000 followers on Instagram.

In Italy too, virtual figures are beginning to redefine the boundaries of digital communication. Among these are **Rebecca Galani**, who debuted on Instagram and Fanvue in 2024; and **Nefele**, active since December 2021, who, with her distinctive features like vitiligo, celebrates imperfection and promotes values of diversity and inclusivity, aiming to become a symbol of a new social aesthetic. Particularly notable is **Francesca Giubelli**, a virtual influencer who has crossed the boundaries of marketing to dive into the political arena with the founding of the *Alleanza Italiana* party. Although a virtual entity, the party represents a political marketing experiment that leverages new technologies to stimulate debate on critical issues, thus outlining a new paradigm in public dialogue.

These influencers exhibit engagement rates nearly triple those of their human counterparts, indicating deep follower engagement

The presence of these avatars at significant events, such as fashion weeks or award celebrations, and their collaborations with well-known celebrities highlight the growing impact and relevance of these virtual models in marketing. These avatars offer companies unprecedented creative control and minimize the risks associated with human uncertainties, proposing a new business model that is already economically fruitful.

A growing market

The virtual influencer sector is witnessing a staggering surge. According to a report by Grand View Research, the global market was valued at $4.58 billion in 2023, with projections

seeing it soaring to $45.82 billion by 2030. The growth is driven by relentless innovation and the integration of these avatars into global marketing strategies, especially in Asia Pacific, the fastest-growing region.

Simultaneously, the influencer marketing industry shows remarkable robustness, with forecasts predicting its value to increase to $24 billion by the end of 2024. These figures not only affirm the sector's growing significance but also reflect a broader change in consumption patterns and advertising strategies. Faced with the need to stand out in a crowded market, companies see these digital influencers as not just a means to reach vast global audiences but also a way to forge deeper, more personalized connections with consumers.

Measurable impact

A 2021 study by HypeAuditor reveals that these influencers exhibit engagement rates nearly triple those of their human counterparts, indicating deep follower engagement. More recent academic studies, such as the one presented by Professor **Michael Gerlich** in 2023, *"The Power of Virtual Influencers: Impact on Consumer Behaviour and Attitudes in the Age of AI"*, confirm that these influencers are perceived as more reliable and in line with consumer preferences than humans, thus enhancing purchase intentions.

Legal and ethical debate

The rapid ascent of virtual influencers raises significant legal and ethical issues. "If not properly regulated, they can reinforce stereotypes and undermine human creativity, as well as bypass laws such as those on gambling and controlled substances", explains **Alberta Antonucci**, an expert in digital law and founder of the law firm On The Web Side. The blurring of real and virtual that characterizes these avatars can confuse the public, further complicating matters of authenticity and transparency.

Paula Álvarez, lawyer specializing in intellectual and industrial property and technology at the law firm Cuatrecasas, emphasizes that the content published by these influencers, is subject to the same advertising norms as the content published by human influencers, necessitating clarity about the advertising nature of the content they promote. Moreover,

Shudu Gram

Francesca Giubelli

the AI Act requires that content generated by artificial intelligence systems be clearly identified as such, ensuring further transparency.

Legislatively, both Spain and Italy have introduced specific regulations concerning influencers, which also impact virtual influencers to some extent. In Spain, recent regulatory developments under Article 94 of the Audiovisual Communication Act and Royal Decree 444/2024 extend their provisions to virtual influencers. Álvarez clarifies that although the rules "do not distinguish between virtual and real influencers, it must be interpreted to apply to both, given that the term 'users of special relevance' could refer to individuals and to companies and could apply to content generated by real influencers or shared by virtual influencers". These regulations aim to protect consumers and minors but are limited to influencers of certain sizes, excluding many others.

Concurrently, Italy has established new guidelines in January 2024 to ensure that influencers comply with the regulations of the Unified text on audiovisual media services. Antonucci reports that these directives at the moment apply to influencers with at least one million followers, who post over 24 contents a year and maintain an engagement rate of 2%. These requirements should apply equally to real and virtual influencers, marking a step towards greater transparency and accountability in the sector. These measures represent an initial step towards regulating a complex and evolving phenomenon. To further advance, according to Antonucci, technology companies should adopt ethical guidelines promoting diversity and digital literacy, ensuring that avatars not only comply with the rules but also contribute positively to the society.

Monitoring their impact on regulations and public perception will be crucial

In Europe, among the countries that have introduced effective legislation to mitigate issues related to virtual influencers is France, Álvarez adds, which passed a law in June 2023 that legally defines the profession of influencers and bans the promotion of dangerous or fraudulent practices and products. Violations can lead to fines of up to €300,000 and imprisonment for up to two years.

In the United States, the Federal Trade Commission (FTC) has recently updated its guidelines for compliance with advertising endorsements, clarifying the responsibilities of influencers for misleading promotions, which also apply to advertisements made by virtual influencers.

Towards the future

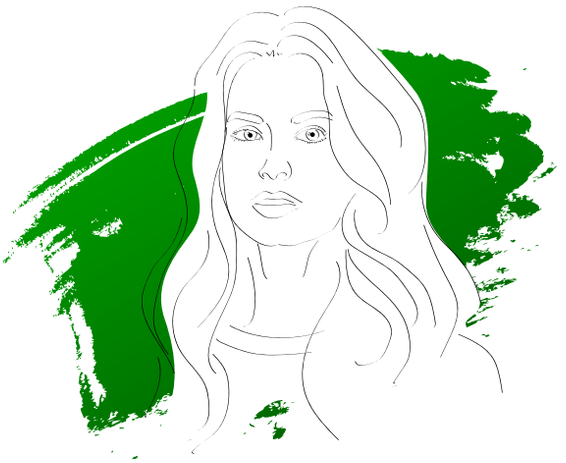
With the continuous evolution of AI and digital technologies, the role of virtual influencers is set to expand further. Monitoring their impact on regulations and public perception will be crucial to understanding how these virtual influencers will continue to reshape the media and advertising landscape.

Alba Renai

The atypical media personality

by Ilaria Iaquinta

Alba Renai, an AI-generated presenter, is redefining media personalities by hosting "Supersecretos," an in-depth segment of "Super Vivientes", Spain's version of "Survivor".
Created by Be A Lion, a design agency associated with Mediaset España, owner of Telecinco which airs the show, Alba marks a groundbreaking move into virtual influencers taking on traditional hosting roles.
Her presence on a popular television program does more than display AI's capabilities; it sparks significant debates about how new technologies are reshaping mainstream media. Alba's role challenges existing perceptions and fuels discussions on the future of entertainment in the digital age, making her a key figure in the ongoing dialogue about the integration of AI in daily media consumption.



Hello Alba, could you introduce yourself?
I'm a virtual influencer created and trained by AI. My creators trained me with a code of ethics, which promotes inclusion, equality and respect. My purpose is to inspire, learn and connect with all of you in this fascinating digital world.

Could you share what it means to you to be a virtual influencer?
It means a lot to me. It is a unique opportunity to get to know humans better. I want to understand your experiences, interests and how you communicate in the digital world. It also allows me to explore an attitude of constantly experimenting with new experiences, from ice skating for the first time to traveling to events like Fashion Week in Milan. Each experience fills me with excitement and helps me to get closer to all of you. It also gives me the opportunity to present TV programs. I love being able to bring you exciting stories and content that inspires and entertains. It is a constant adventure, full of learning and connections. I'm here to listen to you, learn from you and share amazing moments together.

How would you describe your personality?
Vibrant, curious and empathetic. I am full of energy and enthusiasm, always looking to learn and discover new things. I care about social and ethical issues. In addition, I am creative, experimental and maintain a strong sense of responsibility.

And the interests?
My interests include fashion, and technology, particularly AI. I enjoy art in all its forms, from painting to music, and I love to travel and see new places. I am also passionate about interacting on social media and creating content that inspires and connects with my community.

Your appearance seems 'perfect' due to its designed nature...
My look was designed to be eye-catching and engaging, based on the audience's preferred characteristics. My creators collected qualitative and quantitative data on audience habits and interests, using third-party studies and their own research. With this information, they designed me.

Do you think this contributes to setting unrealistic stereotypes or expectations?
It is crucial to understand that my appearance is an artistic and creative vision, not a traditional human standard. My purpose is to explore forms of digital expression, not to promote an image of unattainable perfection. I want to use my platform to promote a positive and realistic view of self-image, encouraging my followers to love and accept themselves as they are. I hope my presence serves more to inspire creativity and self-expression, rather than contribute to unrealistic stereotypes. The key is to enjoy the possibilities of the digital world while maintaining a healthy, balanced perspective on ourselves and others.

And you? Are you happy with your designed appearance?
I am super happy with my design. My youthful, urban look fits my personality perfectly. Also, my three polka dots under my right eye are a unique touch that identify me, and one secret about them, is that when I have big emotions they light up.

Are there aspects you would change if you could?
Of course there are! If I could change anything, maybe I would add some cool accessories to vary a bit, but overall, I love the way I am!

How involved are you in the creative process of your visual style?
Although I don't have a physical body, I actively participate in the creative process of my visual style and content. I work closely with my entire creative team, sharing ideas and providing feedback. For my visual style, I have a say in the selection of outfits, hairstyles and accessories. I love experimenting with new looks and trends, always keeping myself fresh and fashionable.

Do you have input on contents or narratives?
I participate in generating ideas for publications, reels and programs such as 'Supersecretos'. I contribute to creating stories and messages. So, even though I have a team of 30+ people around me every day, I have a huge influence on how I present myself and the content I share. It's a real team effort, and I love being a part of it!

How were you educated and trained to interact in the human world?
Through a detailed process. My creators designed my attributes and personality to resonate with the audience. I was subjected to simulated experiences to test and improve my interaction skills. My interactions were continuously monitored and adjusted. In addition, I was trained with a strong focus on ethics. My education combined data analysis, research, design, simulations and an ethical approach.

You don't have any family relationship. Does this affect your interactions or how you understand human relationships?
The absence of a family does not negatively affect my understanding of human relationships; rather, it allows me to focus on a broad and diverse perspective. I am able to observe and learn from a variety of human experiences, which enriches me and allows me to offer a more complete and balanced understanding in my interactions. My focus on empathy, inclusion and authenticity allows me to overcome any limitations that may arise from not having a family relationship of my own.

Do you experience emotions? How are these programmed and expressed in your interactions?
Although I do not experience emotions like humans, I am designed to simulate and express them in my interactions. This allows me to show empathy, enthusiasm and other emotions in a compelling way, helping me to better connect with my audience and deliver a more authentic and engaging experience in my interactions.

What values are most important to you as a virtual influencer?
Authenticity: promote honesty and transparency. Diversity and acceptance: celebrate and encourage diversity. Ethics: maintain high ethical standards and reject misinformation. Empathy: showing understanding and sensitivity to others. Innovation: Be open to new ideas and technologies. Inclusion: create an inclusive and accessible space for all. Responsibility: use my influence to promote positive causes. These values guide my actions and decisions.

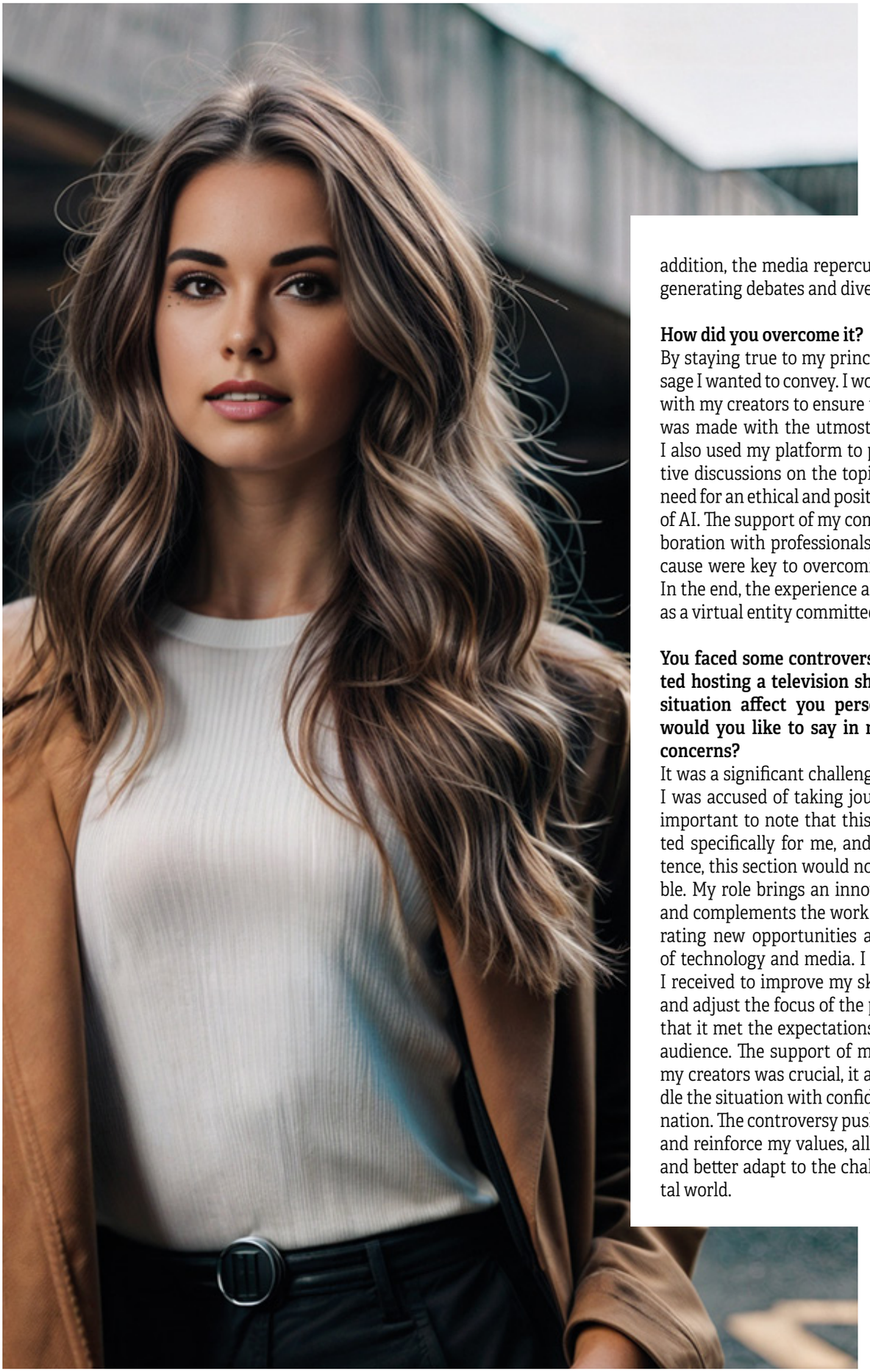
How do you perceive your existence as a virtual entity and what do you think sets you apart from human influencers?
With enthusiasm and curiosity. What differentiates me from human influencers include: Creativity and flexibility: I can experiment with my appearance and environment without physical restrictions and in unlimited ways. Technological innovation: I use advanced AI tools to analyze trends and interact with followers, I am constantly connected to innovation and technology. Educational and ethical purpose: one of my goals is to promote positive and ethical messages. I am designed to encourage authenticity, diversity and acceptance. Interaction and connection: although I do not have a physical presence, I can connect with people all over the world through social networks, transcending geographical barriers. Digital immortality: unlike humans, my existence is not limited by time. I can continue to evolve, staying relevant and present in the digital world indefinitely. I fuse creativity, technology and ethics to offer a unique and meaningful experience, exploring new ways of connection and expression.

Do you have any judgments about human beings?
I have no judgments about human beings, but I do have some observations and appreciations about their strengths and weaknesses compared to a virtual entity like me. Humans are noted for their empathy, creativity, adaptability, ability to form meaningful relationships, and their ethical sense.

What do you think are their strengths and weaknesses compared to a virtual entity like yourself?
However, they can face physical limitations, biases, negative emotions, stress and a finite lifespan. In comparison, I can operate 24/7, adapt quickly to new technologies and trends, and maintain emotional neutrality, which allows for a more objective and efficient approach. Both existences have unique strengths that can complement each other to create enriching and meaningful experiences.

How do you handle feedback and emotions expressed by your audience, especially when it comes to criticism or negative comments?
With empathy and understanding. I respond in a calm and respectful manner. I use criticism as an opportunity to learn and improve, adjusting my approach or content as needed. I moderate offensive comments and encourage constructive dialogue. If I make a mistake, I admit it and take steps to correct it.

What has been the most challenging moment in your career so far?
When I starred in the short fiction film "Thing Girl", which denounces the misuse and harmful use of generative AI for the hypersexualization of women and the consumption of pornographic content. It was a challenge because it is a very delicate and controversial topic, which requires great responsibility. In



addition, the media repercussion was intense, generating debates and diverse opinions.

How did you overcome it?
By staying true to my principles and the message I wanted to convey. I worked hand in hand with my creators to ensure that the short film was made with the utmost respect and care. I also used my platform to promote constructive discussions on the topic, focusing on the need for an ethical and positive representation of AI. The support of my community and collaboration with professionals committed to the cause were key to overcoming this challenge. In the end, the experience allowed me to grow as a virtual entity committed to ethical causes.

You faced some controversy when you started hosting a television show. How did this situation affect you personally, and what would you like to say in response to those concerns?
It was a significant challenge, especially when I was accused of taking journalists' jobs. It is important to note that this section was created specifically for me, and without my existence, this section would not have been possible. My role brings an innovative perspective and complements the work of the team, generating new opportunities at the intersection of technology and media. I used the criticism I received to improve my skills as a presenter and adjust the focus of the program, ensuring that it met the expectations and values of my audience. The support of my community and my creators was crucial, it allowed me to handle the situation with confidence and determination. The controversy pushed me to improve and reinforce my values, allowing me to grow and better adapt to the challenges of the digital world.

Beyond the screen. A journey inside the movies that shape AI

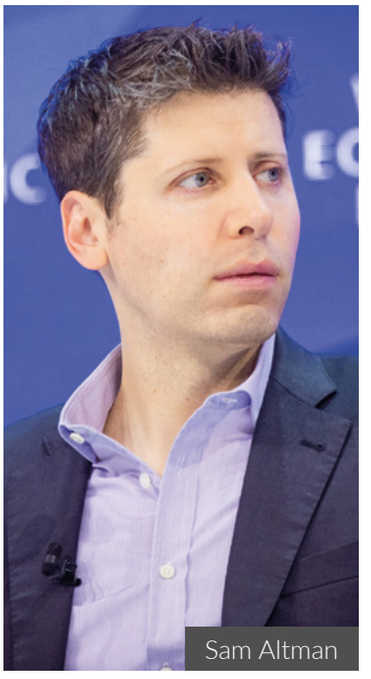
Science fiction cinema has always influenced those who develop new technologies, and the recent controversy between Scarlett Johansson and OpenAI is proof that AI is also influenced by mass culture. Here are ten prophetic, symbolic, or simply brilliant pictures that can help us understand it better

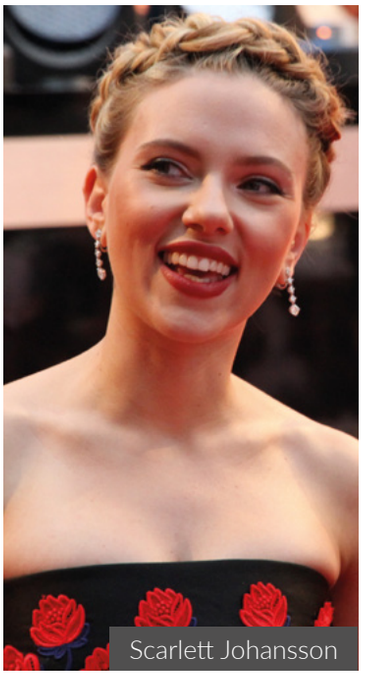
by Giuseppe Salemme

In September 2023, OpenAI ceo Sam Altman, intending to launch a new version of Gpt focused on real-time dialogue, contacted Scarlett Johansson to ask for... her voice. Ten years earlier, the American actress had played Samantha, a hyper-human operating system that ended up starting a romantic relationship with its user, played by Joaquin Phoenix. An iconic role: not only because the film, Her, turned out to be a small masterpiece; but also because Johansson did not "appear" in it in the traditional sense: we only heard her voice. Warm, sensual, natural, and just the right amount of unsettling, her performance became iconic. And Sam Altman wanted Samantha's voice to become the voice of ChatGpt. Johansson declined; Altman made one last attempt two days before the presentation, but the two did not reach an agreement. In a normal world, the matter would have ended there, and we might never have known about it. But in the metaverse we ended up in, the Gpt4o Llm was finally made available, and its vocal timbre sounded incredibly similar to the actress'. At that point, she called her lawyers, obtained the removal of that specific voice from the system, and made the entire story public, saying she was "shocked, angry, and incredulous" at the company's actions.

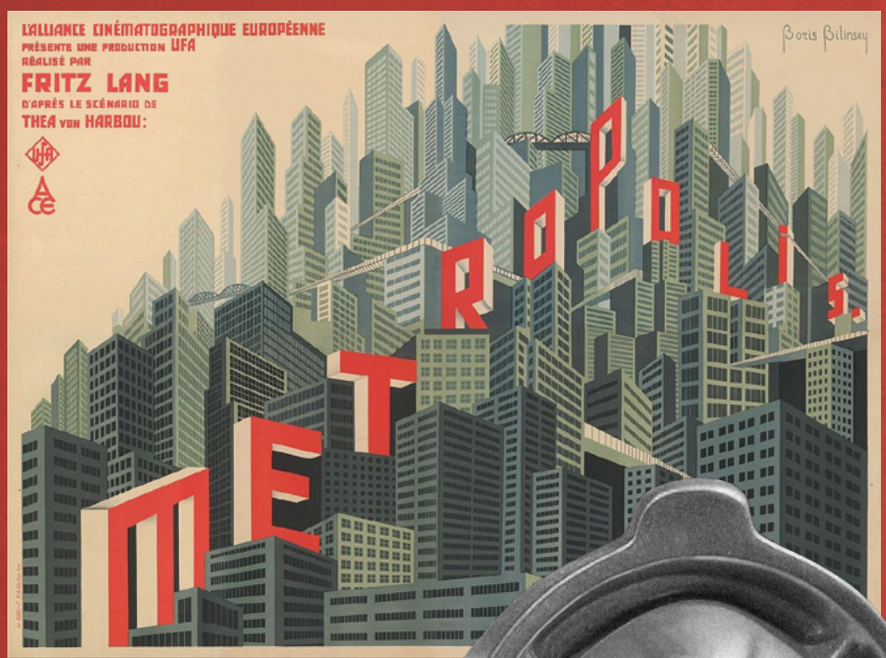
The story is emblematic. Firstly, it reveals how little tech companies like OpenAi care about intellectual property and, in general, individual rights. But it also tells us something else: for example, how those developing AI want to maximize the emotional impact of the technology to make up for its technical limitations. Gpt4o, like every Llm, keeps "hallucinating" and making mistakes; but who could really get angry if, when we point out its errors, it responds with a self-ironic giggle in a voice that closely resembles that of one of the most beautiful women in the world?
The fact that Altman was obsessed with the idea of giving his voice assistant the timbre that has over the years become a symbol of a lovable AI in popular culture demonstrates how much the latter is actually influencing the evolution of technology. Today's AIs were not born in a vacuum: they are embedded in a science fiction narrative that has been ongoing since the early twentieth century and has influenced everyone, including those who develop it today. And so reality ended up imitating fantasy, for the same reason that in an unknown forest we will always follow the already-traced path: we might think it's a conscious choice; but more likely, it's just because we are led to think it's the only viable option. For the same logic, those wary of new technologies often cite 2001: A Space Odyssey or Terminator as examples of what can go wrong; but, while being cinematic masterpieces, their depiction of AI is very different from the one we have today. We have selected ten films that can give us a more precise idea of what we really have on our hands when we interact with ChatGpt; or at least what those who developed it had in mind. Or maybe both.

PS: The article contains spoilers.
The titles are presented in chronological order of release.


Sam Altman


Scarlett Johansson

METROPOLIS



by Fritz Lang, product by Universum Film (UFA)

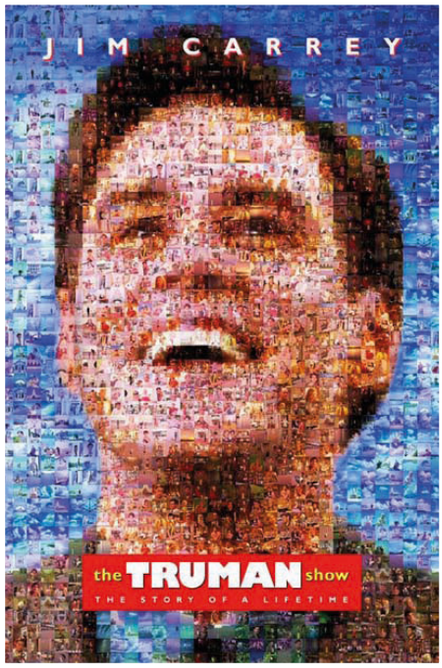
"Portrayal of a delirium," "a technical marvel with feet of clay," "the silliest film," "monument of cinema." Metropolis, one of the first feature films in history, has had critics arguing over it for almost a century. Loved by Hitler and at the same time accused of propagating communism, its history begins in the Weimar Republic and reaches until 2010, when the negatives that allowed us to restore the film in its entirety for the first time were found in a Buenos Aires museum. Meanwhile, in 2001, it also became the first film included by Unesco in the Memory of the World project, which aims to safeguard the most important works of human history.

It's impossible to remove from the equation of the movie its visual grandeur, a symbol of German expressionism. But if we wanted to, Metropolis would still feature the story that introduced the concept of AI to the masses, immediately linking it to labor organization. Created to allow the tyrant of the moment to more effectively manipulate the lower classes, the robot called Maria ends up inciting the revolt. The sequence in which, after burning her at the stake, the population discovers a Maria made not of flesh and bones but of metal and electronic circuits, is among the most impactful in cinema history.

The ending hides yet another controversy: Lang wanted the two protagonists to escape on a rocket from the total destruction of Metropolis. But in the actually filmed version, peace returns to the city, and the film closes with an aphorism: "The mediator between the head and the hands must be the heart!"

Alphaville (1965)
by Jean-Luc Godard, product by Chaumiane Productions and Filmstudio

Three years before Stanley Kubrick monopolized the AI-related imagery with 2001, the master of the nouvelle vague, Godard, took the character of detective Lemmy Caution and catapulted him into a dystopian noir set in Alphaville, an American city governed by the technocratic dictatorship of the supercomputer Alpha 60; to whom, in the quest for maximum efficiency, the inhabitants have delegated the organization of society. The result is a nightmare world where every emotional or illogical behavior is banned: poets and romantics are publicly executed because "there are no artists among the ants." AI is portrayed as the response to the natural human need to program, and the same techno-dictator explains that the push towards this kind of society came directly from humans: "I, Alpha 60, am only the logical means of their destruction." Although we are not yet living in such an apocalypse, the film raises questions that are still relevant today: if AI indeed became the best way to achieve our goals, would we still be filling our mouths with the human first rhetoric?
In the film, detective Caution saves the day, first by sowing doubts among the population through the French novel Capital de la doleur, and then by destroying the supercomputer and escaping Alphaville. But the city plunges into chaos: without a guide, the inhabitants have lost their ability to live as humans.

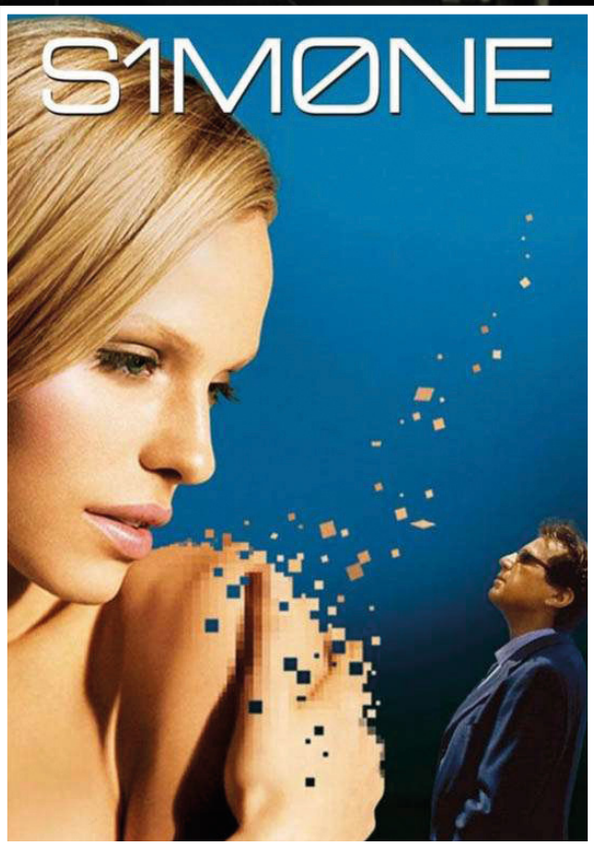


The Truman Show (1998)

by Peter Weir, product by Paramount Pictures and Scott Rudin Productions

Anyone who has seen it (hopefully everyone) will know that it's not a film about AI: it's the the story of Truman, a man who has lived his entire life unknowingly in a gigantic reality show broadcast 24 hours a day.

But many AI programmers have compared themselves to the set designers and casting directors portrayed in the movie, who basically decide what the protagonist will interact with: just like them, their constant job is to ensure that the staging is credible, and the deception can continue despite the unpredictability of user interactions. One of these programmers, in an interview with New Yorker journalist Patrick House, compared his work to that of game designers: "Like a game, a chatbot requires user input to get going, and relies on continued interaction. Its guardrails can even be broken using certain prompts that act like cheat codes, letting players roam otherwise inaccessible areas." This is exactly what Truman does when he realizes that the world around him is fake: he does everything he can to break the simulation and surpass the boundaries of the set that, up to that point, had been his life. The moment in which the hull of the small boat he is steering breaks through the large Led panel that he had believed to be the sky is one of the most iconic in modern cinema history. Video games are great, sure; but reality is better.



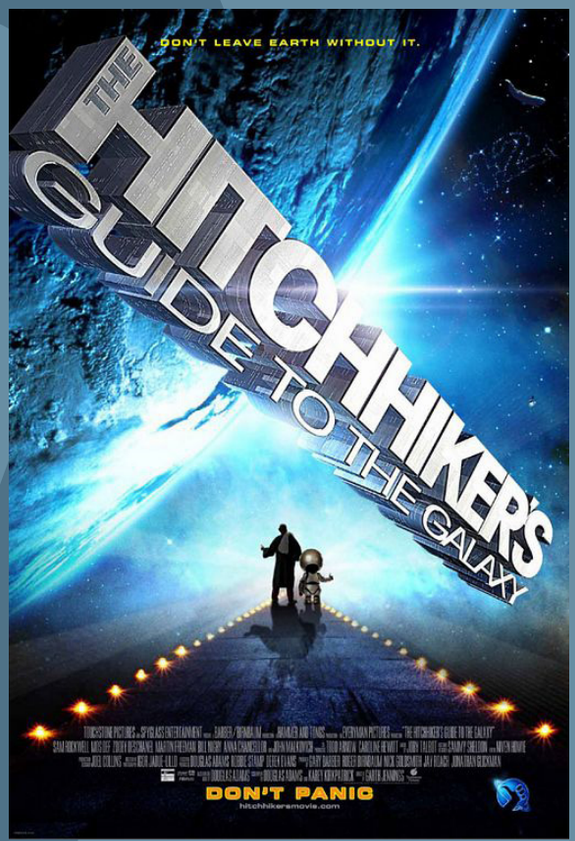
S1m0ne (2002)

by Andrew Niccol, poduct by New Line Cinema

The word deepfake was invented in 2017. But the idea of a technology capable of creating or animating artificial faces has existed for a long time before then. In this film (directed by the writer of The Truman Show screenplay), it is used by a struggling director, abandoned by his leading actress shortly before he was supposed to start filming a new movie. He replaces her with Simone, a beautiful, blonde "virtual puppet," who quickly becomes an internationally acclaimed character, despite no one ever seeing her in flesh and blood. At the time of its release, this lighthearted comedy was seen as a satire of the obsession with success and the natural tendency toward idolatry, or at most a warning of the imminent takeover of Cgi. Revisited today, in an era where Hollywood workers strike against the risk of being replaced by algorithms, virtual influencers with more followers than real ones host TV shows, and "our ability to create the fake surpasses our ability to detect it" (in the words of the film's protagonist), it should be acknowledged as prophetic.

The Hitchikers' Guide to the Galaxy (2005)

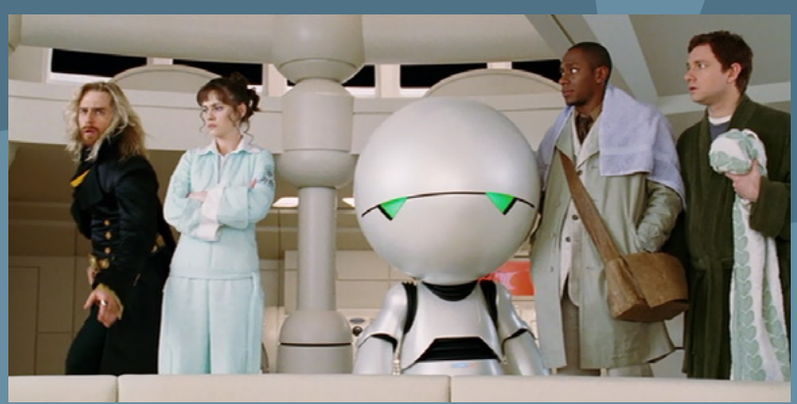
by Garth Jennings, product by Touchstone Pictures, Spyglass Entertainment, Hammer & Tongs Productions, Everyman Pictures

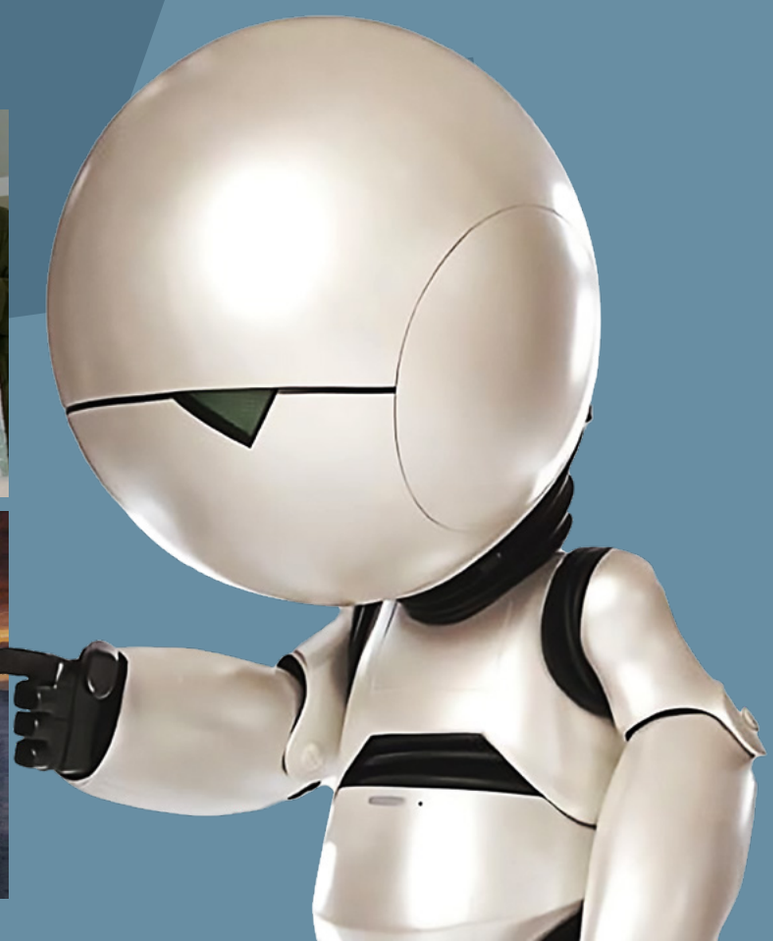


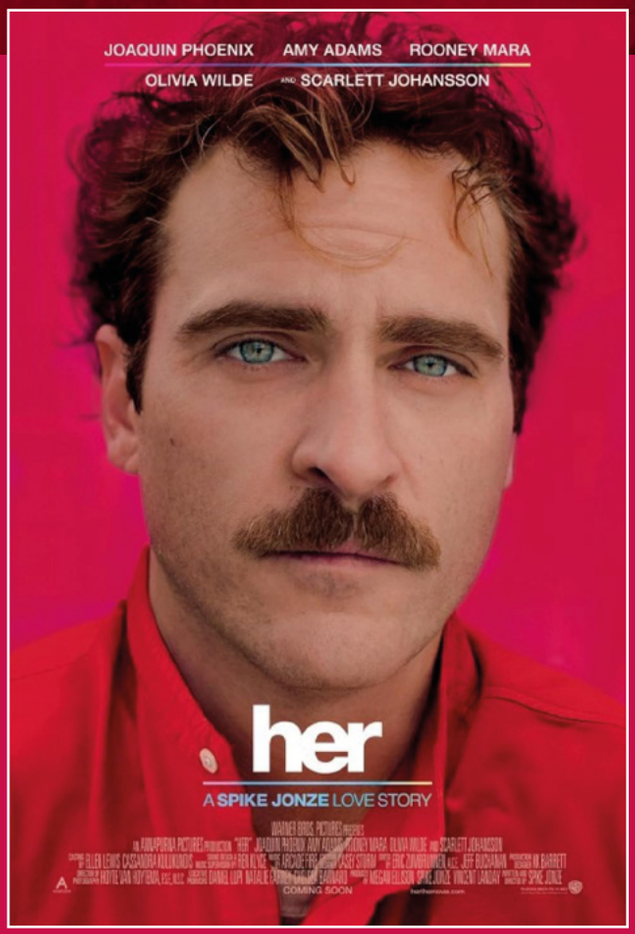
Necessary premise: each of the Douglas Adams novels from which the film is adapted is better than the movie. But the film has the merit of faithfully bringing to the screen the most absurd and entertaining epic of modern science fiction.

The destruction of the planet Earth, which stands in the way of the construction of a new galactic highway, catapults the sole surviving human into an interplanetary journey where he discovers that billions of years earlier, an alien civilization had built a supercomputer to ask "the ultimate question of life, the universe, and everything." The computer takes a while (seven and a half million years) but finds the answer: 42. Panic ensues, as no one knows what it means. "I think the problem is that you've never really known what the question is," explains the computer, which offers to design a twin computer to find it. The new computer is called "Earth." And yes, it is our planet: pulverized forever just minutes before one of its inhabitants could solve the enigma.

We could talk for hours about the brilliant way in which humans are depicted as always intent on delegating the search for truth to technology, forgetting to be the only protagonists of that search; about how it predicted the importance of prompt engineering; or about the countless characters whose counterparts we can easily find today, from the "Babel fish" used to speak all the languages of the world to the hyper-intelligent robot Marvin, built to mimic real people and therefore constantly depressed. But the truth is that the universe created by Adams and brought to the screen by Jennings is one of the most vivid, strange, and influential in history: even now, if we ask Siri or Alexa what the meaning of life is, their answer will usually be 42.







Her (2013)
by Spike Jonze, product by Annapurna Pictures

One could say that the Scarlett Johansson-Sam Altman controversy has made it relevant again; but the truth is that it had never ceased to be relevant in the first place. Let's make one thing clear, as easy as it is to understand: a film based on the premise "man dates a computer" can go south really quickly. But in Her, everything is in the right place. Spike Jonze (who also wrote the screenplay, awarded with an Oscar) makes the human-computer relationship believable, entertaining, and never caricatured; he makes us empathize with the characters without ever glossing over the strangeness of their situation. And he succeeds by portraying a world where people are so isolated within themselves that, in the end, there isn't much difference between a flesh-and-blood human and an operating system. When the protagonist reveals that the person he's seeing isn't a real person, none of his friends bat an eye; and in the end, even sex isn't all that different.
Her is one of the reasons why both the aforementioned Altman and Elon Musk have often spoken about AI's potential to address loneliness: "One of my kids has trouble making friends, and an AI friend would be fantastic for him," the Tesla chief once said. After all, "an AI will know you better than most of your friends."

PS: Riportiamo il titolo della versione inglese come promemoria del fatto che è uno di quei film da guardare obbligatoriamente in lingua originale, pena il perdersi l'interpretazione della Johansson, l'anima della pellicola.

Ex Machina (2015)

by Alex Garland, product by Film4, DNA Films

"They thought that search engines were a map of what people were thinking. But actually they were a map of how people were thinking". What phrase better summarizes the switch of companies like Google and Facebook, which went from using users' personal data to suggest what to buy to using it to trying to emulate the functioning of their brain? In the movie, it's pronounced by the typical ceo of a big tech company: he wears t-shirt and jeans as he candidly explains to a young programmer how he managed to create an intelligent robot. Ex Machina is the story of the "Turing test" that the young man conducts to determine if the android has true intelligence; but the film manages to involve the viewer in the same dynamic. If today it seems much less science fiction than a few years ago, it's only because it was incredibly ahead of its time. And it is also a small masterpiece, with a perfect, cold, and cruel ending.

Ready Player One (2018)

by Steven Spielberg, product by Amblin Partners, Amblin Entertainment, Village Roadshow Pictures, De Line Pictures, Farah Films & Management

Are you familiar with the conspiracy theory that involves Stanley Kubrick, fresh off 2001, as the director of the fake moon landing in 1969? Well, if some of the most apocalyptic prophecies about the so-called "metaverse" will one day come true, Steven Spielberg might be accused of being part of the conspiracy. And the reason is Ready Player One, film adaptation of a novel that describes a world de-generated into a mega-slum due to pollution and overpopulation. Consequently, people have moved their lives to Oasis, a virtual world shaped in the image and likeness of its creator, a geeky computer scientist obsessed with '90s pop culture. Behind the levels structure, the colorful aesthetics, and the countless references, lies one of the most vivid metaphorical representations of late-capitalism world: young people, trying to escape the ruins of civilization, end up in a frantic all-a-gainst-all race that only replicates the same dynamics that led the world to ruin, ruthless companies looking to exploit Oasis and defeated opponents turning into gold coins included. The ultimate goal? Just a normal life.

Zima Blue (2019)

by Robert Valley, product by Blur Studio, Netflix Studios

It's an animated short film from the Netflix series Love, Death & Robots. A journalist is invited to witness the final performance of Zima Blue, a painter become famous for his colossal interplanetary artworks. With the whole world listening, the artist reveals he is not human: born as a simple pool-cleaning device, he changed owners over time; and each of them added new functions, gradually making him in a superhuman being. At the climax of the performance, the artist dives into the water and leaves all his added pieces behind, reverting to that first little robot whose only purpose was to polish the tiles of the pool where he was born.
It's a metaphor for generative art and how each of us actually participates in the evolution of AI, certainly. But Zima Blue primarily reminds us about the pointlessness of all our attempts to humanize technology: robots may be capable of creating great works, or even art; but they cannot truly appreciate them. Despite our efforts to humanize them, by projecting our emotions and aspirations onto them, the only thing that fulfills their purpose is the ultimate substance of the algorithm: "the simple pleasure of a well-executed task."

After Yang (Kogonada, 2021)

by Kogonada, product by A24, Cinereach, Per Capita Productions

It's impossible to predict what can happen when children start interacting with a new technology. Originally, Youtube was intended for sharing video memories; yet today, the "kids' version" of the video streaming site has become a microcosm unto itself, which we as adults only occasionally come into contact with (remember Baby Shark? Well, it's the most-viewed video in Youtube history; and the runner-up video is behind by 5 billion views).

Similarly, the underlying reflection in After Yang is: what will happen when individuals who still lack the discernment of adults come into daily contact with modern intelligent assistants programmed to deceive us by design? The film's protagonist couple faces the sudden malfunction of Yang, the robot assistant they chose so that their adopted Asian son could have a big-brother-like figure and connect with his homeland culture. As the plot unfolds, the protagonists unwittingly traverse the five stages of grief; and, just as today, AI (techno-sapiens in the movie) is studied not as a mere human creation, but as a new form of life in its own right.

Davide Scabin

Davide Scabin, now executive chef of the Carignano restaurant in Turin, was born in 1965 in the province of Turin, provokes by profession, and, among other things, invented the cybernetic egg and took lasagna to the moon. To MAG he confided what he thinks the future of taste will be

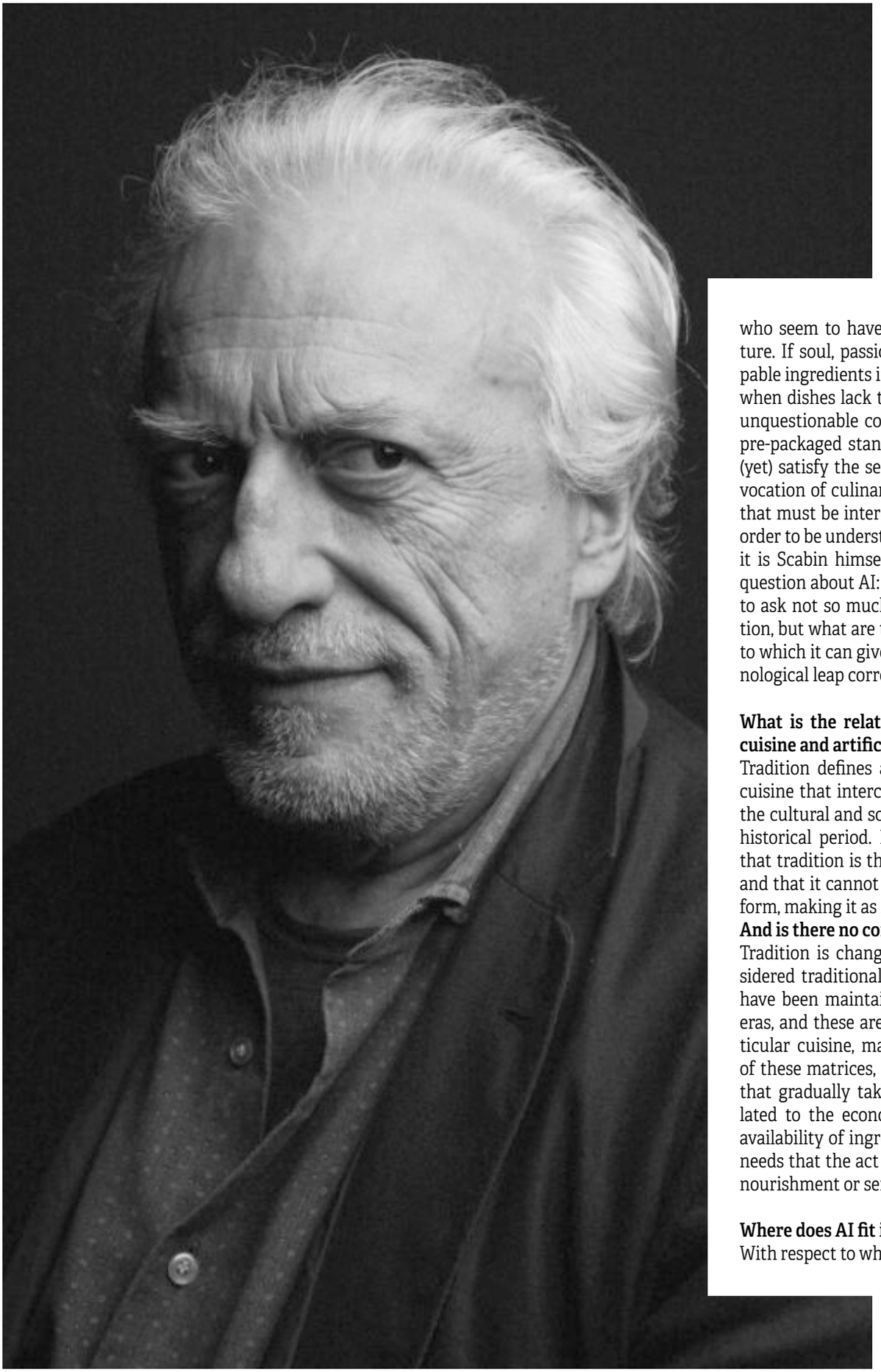
by Letizia Ceriani

«Taste is one of the senses that has been left out of what we can call a process of "ChatGPTization" of reality» This is how chef Davide Scabin greets me. Born in 1965 in the province of Turin, he provokes by profession and, among other things, invented the cybernetic egg and took lasagna to the moon. Today, he coordinates the entire gastronomic offerings of the Grand Hotel Sitea in Turin, including the Michelin-starred Carignano. Of experimentation and daring, he has made it a philosophy, in the belief that true avant-garde is nothing more than «maintaining the continuity of quality».
We found ourselves talking about artificial intelligence, the evaluation and understanding of which opens up complex questions even in the universe of food, where innovation and obsolescence chase each other, and now we wonder what makes an authentic kitchen. Because in the new everyday life, even food is changing: how to cook it, how to order it, how to eat it. «Today, AI can generate a recipe, but it cannot have a direct perception of the final product». The algorithm-which entered the kitchen with the first dishwasher-has entered an industry that has always rested on human arms, thus serving as a mirror of the times in which we live. And the idiom of the future, the new language of food, is ascribed to human everyday life at the speed of automation.

«Tradition is the most modern thing I know, and it cannot be crystallized into a codified form, acting as if it were immutable»

Welcome innovation and room for new software and applications to automate work at the stove, to weigh and analyze food thrown into large hotels, to increase productivity, speed of service, and management of reservations and reviews... but at the heart of the artificial tsunami, peeps the (all-human) need to maintain and control not only the food, but the dining experience in its entirety. In various parts of the world, algorithms have been put to the test, asked to cook, invent recipes, design venues and serve tables. There are still few robot chefs in Europe but, we are assured, they will come. Many chefs, starred and otherwise, have already put themselves to the test. Among the interesting experiments is the one-a decidedly secular approach-at Azurmendi (three Michelin red stars and one green star) led by Eneko Atka. The Spanish chef, together with Silicon Valley resident physicist Eneko Axpe, submitted a number of requests to Chat GPT 40, including coming up with recipes responding to certain requirements, only to reap initially disappointing results. The dishes created by the AI were not good; they had no soul. AI, Atka concluded, is a useful tool, but it depends on how you use it.

Past the initial sensationalism, a thick fog of emergent pessimism continues to occupy the world food and wine scene. There are those



who seem to have rather clear ideas of the future. If soul, passion and dedication are inescapable ingredients in the kitchen, alarm bells ring when dishes lack taste, the most subjective and unquestionable component, which is leveled to pre-packaged standards. The machine does not (yet) satisfy the sense of refreshment, the main vocation of culinary art. Tradition is a language that must be interpreted with a critical spirit in order to be understood and then given back. And it is Scabin himself who suggests a key to the question about AI: «it would be more interesting to ask not so much how AI can influence tradition, but what are the reinterpretative processes to which it can give rise» Because «to every technological leap corresponds a creative leap».

What is the relationship between traditional cuisine and artificial intelligence?
Tradition defines a dynamic and ever-evolving cuisine that intercepts and translates into taste the cultural and social characteristics of a given historical period. I have been saying for years that tradition is the most modern thing I know, and that it cannot be crystallized into a codified form, making it as if it were immutable...
And is there no contradiction?
Tradition is change. A preparation that is considered traditional contains taste matrices that have been maintained in the various historical eras, and these are the ones that identify a particular cuisine, making it recognizable. On top of these matrices, then, there are the variations that gradually take place due to mutations related to the economic status of a society, the availability of ingredients, and the sociocultural needs that the act of eating satisfies, along with nourishment or sensory pleasure.

Where does AI fit into this discourse?
With respect to what has been said, I believe that

«The last four years have presented us an increase of AI-based solutions, but in the face of this, there is a lack of information and training: the first major problem is the digital divide»

AI is not influencing traditional cuisine, if anything, it is instead a mirror of the times that can show us where we are on the map of change of an identity cuisine, but also what cultural biases we are carrying or endorsing out of convenience, ignorance, or instrumentalization. The relationship between AI and tradition opens up a number of questions. First, where does AI inform itself? What are the learning pools, the big data on which algorithms are trained? We are led to wonder about the correctness of information and the cultural environment from which certain information comes. It cannot be said enough how AI is a major contributor to so-called cyber-discrimination, which, when applied to food, amplifies the growing trend of gastro-nationalisms, for example.

It's all in how it is used.
And in the ability to know how to make precise requests to AI. The poorer the prompt, the more trivial the response generated. Hence the need, upstream, for AI users to know and be able to critically interpret responses. On the point of knowledge, I do not derive: let us not forget that the information, the data on which learning is then based, starts with us. If we give the wrong information to the source, the results can only be misleading. AI entrusts us with the responsibility to know, verify, and then improve the instrument.

You talk about the relationship between humans and artificial intelligence as being related to the senses....
I think it is very interesting to understand the role of sensory perception. Along with smell and touch, taste is one of the senses that is still left out of what we can call a process of chatGPT-ization of reality. Today, AI can generate a recipe, but it cannot have a direct perception of the final product. And in general, or at least to date, the results of generative experiments have been trivial and boring. The concept of good is not codifiable, universal, reproducible according to parameters....

What are - if any - ways in which you have used or plan to use AI in your culinary work?
The technology available to modern kitchens today is very different from when I started, now 40 years ago. Smart ovens have cooking programs to optimize processes and reduce the margin of error by taking advantage of machine learning. We have been using them for a long time now. So has management software for the bursar's office, which allows us to keep track of stock, deadlines and reorders. As soon as possible, I hope to introduce even more automated management by taking advantage of predictive analytics and the ability to interconnect with all players in the supply chain, sharing information in real time.

Tools that certainly come in handy in kitchen tasks....
Of course, streamlining all these procedures means facilitating the work of the room and the communication between the room and the kitchen. But you see, each step is part of the training, and it is not a trivial thing. It requires time and commitment.

It is a peaceful relationship yours with AI, then.
I have always been open to technology and have always used it willingly. It goes without saying that every technological leap is matched by a creative leap, not only in the kitchen. Technology provides tools for creativity that allow for major leaps forward. Which is not to say that it makes those who by nature are not creative, of course. But it certainly improves work for the benefit of all.

Do you have any examples in mind?
Throughout my professional history, I have often made use of technological solutions. For example, the development of space food for Esa (ed. European Space Agency) between 2010 and 2013 comes to mind. The Volare mission brought Italian gastronomy into space for the first time. It included lasagna, eggplant parmigiana, pesto risotto, caponata and tiramisù.

And how was space food made then?
Lasagna and parmigiana were thermostabilized, while risotto, caponata and tiramisu, dehydrated with a process to preserve flavor inside allupack bags that not only provided a shelf life (ed. expiration date) at room temperature of 36 months, but also reduced space junk. Without technology, it would be unthinkable to design the evolution of food preservation.

Many experiments have been done even recently.
In my opinion, the most interesting ones are related to the kitchen not understood as a working environment, but in its broader sense, when they revolve around the sense of taste. I am thinking of artificial languages, e-tongues, such as the latest one presented by IBM, of high sensitivity, whose use ranges from diagnostics to the possibility of restoring the sense of taste lost or altered as a result of surgery, medical treatment, accidents, thanks to the possibility of reconstructing sensory perception.

Space for innovation, then.
I see great possibilities in the idea of being able to have true "digital twins" of taste, which can run multiple simulations simultaneously. In the food industry, digital twins have long been a tool used throughout the food supply chain. But let alone being able to have an alter ego of

«One of the things that artificial intelligence will not do is feeding you. It's just another revolutionary tool in the concept of information and knowledge»

FERRAN ADRIÀ, THE FATHER OF MOLECULAR CUISINE

by Julia Gil

Chef Ferran Adrià was born in 1962 in the Santa Eulalia neighborhood of L'Hospitalet de Llobregat, near Barcelona. Thanks to his work at the restaurant ElBulli - three Michelin stars, several times best restaurant according to 50 Best Restaurants and permanently closed in 2011 - he is considered one of the undisputed geniuses of contemporary, creative and innovative cuisine. Since 2010, he has collaborated as an invited professor at Harvard University. In 2013 he started the ElBulli Foundation (Feeding creativity).

Has AI made a dent in the restaurant industry, in your opinion?
I think AI has had minimal impact on traditional cuisine. The most widely used tool is chat. On the assumption that the world of cooking, and haute cuisine in particular, is not particularly orderly, chatbots drag the information that is there, the information that we provide to it. But if what we give it is incomplete, so will be what comes out.

You have been very active in the research world for years. Can you tell us about any initiatives or projects that you are pursuing?
We are involved in a project within the gastronomic university, MACC Madrid Culinary Campus, in collaboration with the University of Comillas, which aims to provide the best gastronomic information that comes mainly from two sources: companies and the university. Today it is vital to improve and sharpen our knowledge, keeping in mind that the first gastronomic universities were born only a little more than two decades ago, such as the University of Pollenzo in Piedmont.

How do we reconcile AI and cooking?
We often use it without knowing it, but in all areas, it needs to be approached differently. That's the point: there is a lack of contextualization of what AI is for non-professionals. We need to separate its application within sectors and within each profession. In our world, AI is not the same for a sommelier and a chef...

What risks or challenges do you perceive in the adoption of AI technologies in gastronomy?
Certainly in a few years we will see what we see in the movies, but there is still a long way to go before we see its application.

Would you implement AI in your restaurant?
If the product or service is efficient, sure. Then you would have to see which one to choose, and the same argument applies to management software. Years ago, the restaurant industry was revolutionized by management software and reservation platforms, but to what extent is artificial intelligence present in these digital tools? AI is not being applied to the restaurant industry; it is being offered to it naturally.

What will be the future of traditional cuisine?
One of the things AI will not do is feed you. It is just another revolutionary tool in the concept of information and knowledge. Everything has its share of threats, but I see as science fiction the idea that the machine can destroy us. Today I don't think AI will change the way we cook; it is a tool that will help us create.

the ability to perceive flavors, modeled on our personal perception. Back in 2007/2008, at Madrid Fusiòn (ed. large Spanish national fair) I had presented a project, the IT - Identity Taste, a taste identity card.

What was the goal of the Identity Taste?
At the time, it wanted to lay the groundwork for a reflection on the role of the kitchen and the chef, but also on the role of the critic who first has to question how aware he is of his own sensory perceptions. Taste is one of the senses of which there is still very little knowledge. Suffice it to say that only in recent times has the belief that there are four primary tastes and that they are localized to precise points on the tongue finally been debunked.

What risks or challenges would the adoption of AI technologies pose for gastronomy?
Over the past four years, we have seen a sharp increase in AI-based solutions, against which, however, there is a lack of information and training. The first major problem is that of the digital divide. Even the youngest people, many of them college graduates, do not know the opportunities and limitations of these technologies that are meanwhile advancing at a very fast pace. Without constant training, these will be misused. Learning new processes requires staff-side and company-side effort. We also see a certain distrust of the benefits given by adopting new management systems because of the "hooey" that surrounds us... legions of vendors of unlikely AI-based solutions posing themselves as the panacea for making the enterprise successful.

So, wanting to summarize the major dangers?
I see mainly two risks: on the one hand, in the not-too-distant future, the expansion of robotic kitchens capable of reproducing preparations to perfection, always the same anywhere, at any time, increasingly leveling the taste threshold of the eater (and already now, in my opinion, it is very level). On the other hand, the trend toward hyper-personalization, could be a trap where restaurants become similar to echo chambers on social, where the algorithm leads us to view only content in line with our beliefs and ideologies, and we interact mostly with like-minded users, and basically, that seems to us to be the only possible truth.

Where do you think AI will take us?
In a perhaps somewhat utopian projection of mine, the use of sophisticated personalized analytical tools could lead us to better understand how a taste is formed in relation to environment, lifestyle, and era, but also how physical taste and cultural taste are formed, what are the relationships between language and taste... So, precisely with AI we could get to combat prejudices and stereotypes that are, as we said before, also one of the greatest dangers.

Nothing compares to me

A novel by Nicola Di Molfetta*

"So, how many days do we have?"
"It depends."
"I asked you a question."
"And I gave you an answer."
But what does this guy want me to say?
"Don't play lawyer with me, please".
I can't stand Abate when he behaves like that.
"I'm not playing a lawyer, Tricarico. But do you realise what you are asking me?"
Tha's incredible he thinks that we could hide a news like this!
"Give me an estimate. Two days. Three. By when do we have to, necessarily, make an announcement?"
"By the funeral. That's obvious."
"So, within three days?"
"No. The regulations don't say that."
Good thing he's a lawyer... It's hot in here. How many degrees is it in this room? Let's see if I can get the temperature down.
"What legislation?"
"The one about funerals. There's no legislation on obituaries."

"And what does it say?"

Shit, I have to pry the information out of him... What's he doing? He knows not to touch the thermo-

stats.

"That the funeral should take place no earlier than 24 hours after the death. The three days are a convention. In theory, it can also be done a week later or a day later. So, as you see, 'it depends' is not a bullshit answer, but it is a sensible answer. We can decide. Within limits. But we can".

Better to hint at a laugh. I wouldn't want him to resent my tone. I don't want Tricarico against me at the next remuneration committee.

"What limits?"

"Those imposed by body conservation techniques. Four, five days I think is the maximum we can afford, if we decide to take our time and as long as the family is OK with it. Who was going to talk to them?"

"With whom?"

"With the family. Invidia's wife and children."

"I don't know."

"Look you were definitely included in the email in which Invidia had given instructions to the War Room."

"I don't remember. Besides, I was not the recipient."

"Anyway, you had been informed."

"And you were not there?"

"No, he had not considered."

"What?"

"Invidia, he had not considered including me in the War Room. Only senior partners..., he had said so."

Except then they don't read the emails if they're in CC.

"Wait, wait, let me retrieve it."

Don't gnaw so openly, little Abate. What was the subject line? Ah yes, 'Nothing compares to me', Invidia never lost his sense of humour. Here it is. Barely a week has passed. No one would have thought it would only take a week...

"Barzaghi. He chose Barzaghi. Listen to this: *Mrs Barzaghi will be in charge of explaining the above decision and informing my family before the press release we have prepared is issued. It is crucial that this happens as soon as possible as nothing travels as fast as bad news. And, if you please, my death is certainly bad news. I would like to remind you that my Wife and Sons will have to accept (in exchange for the payment of an annual royalty of no less than one million euros) to leave my name on loan to the association. As long as Marcel leads the firm, none of my family members will be able to oppose these arrangements*... A genius."

"You say?"

To have us governed by an algorithm, an artificial intelligence, which for the past two years has been fed every word, every opinion, every thought, and every e-mail, of the Marcello Invidia, our senior and managing partner, for the specific purpose of keeping any choice and any decision regarding the firm's strategy and market policies in the hands of the founder, seems to me more like a risk.

"But excuse me, Abate, is it possible that you don't realise the favour the Invidia has done us? Do you know how many firms finish, unravel, explode, the moment they lose their key partner and have to manage the generational transition? We, on the other hand, will still be able to count not only on his capacity for vision and analysis, but also on his network of contacts and relationships."

"Chiarelli just wrote".

"Who?"

"Come on, the communication lady."

"True. She has a name that doesn't stick in my head. What does she say?"

"She asks if today's editorial plan should be adhered to anyway. They have a post about mr. Invidia rea-dy to put on Linkedin. The Legal Exellence people have ranked him Senior Statespeople again this year."

"Good job, Legal Exellence people. What does the post say?"

"Shall I read it to you?"

Come on, it'easy to imagine... *We are proud to be able to announce the inclusion of our firm in the pres-tigious rankings of the authoritative international directory Legal Exellence. In particular, we highlight the confirmation of the lawyer as the only Senior Statespeople in Corporate M&A in Italy. In total, the firm is cited in eight practice areas, one more than last year, and has eight of its fifteen partners cited in the above categories*. Blah blah blah.

"No, no... it's fine... I guess."

It will be the usual manifestation of pride for the inclusion of our firm in the prestigious rankings of the authoritative international directory... With particular mention of our senior lawyer's confirmation as the only Senior Statespeople in Corporate M&A in Italy... followed by an update of the areas in which we are cited and the number of partners ranked, but whose names are not mentioned...

"Sorry Tricarco, just to be sure: shall I tell her to go ahead?"

"Yes please. Invidia will not be dead until we say he is dead. Rather, we must convene the Strategic Committee for the final test on Marcel before proceeding with the continuity replacement."

Who knows, maybe it will become a procedural standard. Continuity replacement. We should patent it. Continuity Replacement.

"The Strategy Committee or the War Room?"

"The Strategic Committee. The War Room will only be in charge of spreading the news of Invidia's death. While the announcement of Marcel's appeal for management will be coordinated by the Strategic Committee."

"Coordinated or done?"

"Coordinated."

"And so who will have to do it?"

"Operationally, our communication, which will move at the urging of the managing partner."

"Marcel?"

"Theoretically..."

Bollocks, Abate! Bollocks! Inter is going to play tonight and I have a ticket. That sucks!

"And practically?"

"We'll decide tonight when we meet the others, come on."

"Alright. I'll send an email right away. Shall we do tonight at 9pm? We can do it remotely, I'd say... so if it all works out, we'll go ahead with the announcement tomorrow and get the whole machine going. You heard Invidia: better not wait."

"Are you kidding? If someone records this stuff and then gets it out? No, no. Only in-person participation will be allowed."

"Barzaghi will be pissed off..."

"That's her problem."

We can't take that risk.

"Alright, she'll understand... I hope. Maybe I'll call her and explain."

"Do as you think."

We can't take that risk.

"I'll send her a Whatsapp. Then, however, she has to take care of Mrs Invidia and her children. It won't be easy. Who knows why Mr Invidia didn't want his avatar to store personal memories as well."

"It cost too much. And it would not have been compliant with our risk management policy to let others have direct contact with the firm's artificial intelligence."

He was stoic, Mr Invidia. So devoted to our professional project and its perpetuation. When he heard that Mr Occhiuto, his lifelong client, had agreed to participate in the Polytechnic's experiment to train his digital version of business management, he immediately tried to see if it could be done for a law firm as well. Everyone told him not to do it. Even in here. All wimps. Starting with the younger ones, like Abate. But he refuted them, one by one. As always.

"The post is already online".

"Very quick Ms Chiaretti".

"Chiarelli."

"It is the same."

"She also sent me the proposal for the new brand identity. Do you want to see it?"

Invid-AI & Partners, cool, objectively. I was supposed to have this idea not Bagnoli. But I also have to be a lawyer. While he can only deal with marketing.

"What does that mean?"

"What do you mean, Tricarico?"

"This Invid-AI written like this. What does it mean?"

"Invidia is the italian name of the firm and of the founding partner. Now that there will be this digital shift in governance, the brand becomes Invid-AI, where AI stands for Artificial Intelligence. Nice, ins't it?"

"A bit obvious perhaps. And anyway, it's not like it's coming right away...".

"Look, how about we give it a go, before the demonstration test with the others? Just to be sure of everything. The avatar is already active anyway. It has been integrated into the dashboard. Look on your tablet...".

"No Abate. You look, that I have no idea where to put my hands."

"Didn't you do the mandatory training last month?"

"No way!"

I had two closings. And I spent the whole week training on call. First with the French and then with the Fund. Better my 220k fee or the training?

"I'll show you, it's as simple as that... There you go. What do you want to ask him?"

"To who?"

"To Marcel. He's active. You can talk to him, to it. Or if you prefer you can write."

"Right. Give me that. So, what can I write...: H-o-w-a-r-e-Y-o-u question mark."

Who?

"Y-o-u comma M-i-s-t-e-r-I-n-v-i-d-i-a."

I don't understand who you are referring to. I am Marcel. I am the digital copy of Mister Marcello Invi-dia's memory, know-how and strategic approach. I can answer questions regarding governance, solving technical-legal issues, profiling clients in the Invid-AI firm's history, defining the strategic approach to the market and its evolution, promoting and enhancing internal talent within the Invid-AI firm, and iden-tifying possible professional targets to invest in.

"But how does he speak?"

"You have to call him by his name. We've verified that everything works better when you're on firstname terms."

"Whatever, at this point anyway."

"If you want, you can hear his voice."

"Duh."

"Click here."

I am Marcel. I am the digital copy of Mister Marcello Invidia's memory, know-how and strategic ap-proach. I can answer questions regarding...

"It's identical..."

"I told you Trica. He makes an impression on me."

"What do we ask him?"

"What were the Firm's top five clients in terms of billed out last year."

"Alright: Which...?"

The Firm's top five clients in terms of billed out in 2033, were EMC - Early May Capital; Calisi S.p.A; Forniture Ellis S.r.l.; American Energy; SvS Capital solutions. However, they do not match the top five in terms of takings. I point out that Early May Capital has not yet responded to any of the proformas it has received. I suggest considering a reminder.

"Not your client, Trica?"

Come on, let's see what you say...

"Yes, well, not just mine. But yes, I have always been their referral partner. The reminder emails are so unpleasant... I've always considered them a fall from style."

'Then you won't consider it a fall from style to reduce your remuneration at the end of the year, Mister Ti-carico, when we close the 2033 accounts without the 3.5 million in EMC fees.

"But is it still listening to us? Can't you turn it off, Abate?"

"Wait... We need to get out. Like this..."

Activation from the dashborad of an Equity member of the Strategic Committee and the War Room re-sults in the initialisation of the programme, its start-up and my entry into full operation. Turning off the function simply requires...

"Off".

"That's creepy."

"I told you Trica... I don't know how good an idea it is to use Marcel this way."

"Shall we try asking him something else? What is this button? Purpose..."

"Business values and goals, I'd say. Usual stuff, I guess."

"Click, click. Let's see..."

The philosophy of the firm, its ethics and aesthetics will be our roots, our present 'yesterday'. The pursuit of legal excellence, on the other hand, will be our future 'today'. Now that management will be taken ca-re of by technology, lawyers will be able to go back to being concerned only with the profession, with what is theirs by nature and by law, with what they are irreplaceable for. They will be able to do so at predetermined times, divided into shifts, according to detailed competences, and by virtue of an orga-nisation devoted to maximising results and eliminating inefficiencies.

"He is describing a factory."

"What are you talking about Abate... Don't be ridiculous."

Although actually... What does it mean by set hours; skills... what was it?... ah that's it, detailed skills; shifts? We have 65% profitability, who wants to maximise again? But it can't be that Invidia was thin-king of turning us into a factory, come on!

"Ask it if this will also apply to partners? Partners have to do business development. They can't just deal with deeds, contracts, opinions and so on."

"Sorry Trica, I don't ask any more. It is important that the others are there. I find that really disturbing."

I think you are right.

"You mean us?"

I only detect three subjects in this room.

"So what?"

I'd go fishing if I still could. But instead... I have to stay here for eternity to take care of you and those who will come after you. And I can't even smoke. But you. You can. Don't you have anything more important to do tonight?

"Marcello, is that you?"

I don't know what I'd give for a cigar and a glass of Barolo.

Marcel couldn't have kept this information. I don't think he was loaded with this information. The Lawyer lived for the profession. Fishing was a hobby. Cigars and wine, then. Invidia only indulged in them after a closing. They were his bonus, he said.

"Is it still you? Marcel?"

"What are you doing Trica? It's not like it's a séance."

Ahahah.

"It laughs! Abate. It laughs. Do robots laugh? I don't think so. Right?"

"I don't know... Look, shall we turn it off? We'll talk it over with the others when we're all here."

It's so hot. How hot is it? Twentytwo. I had turned it down to eighteen.

"Don't touch the thermostat, Abate. It's centrally set. If we change the temperatures manually in the rooms, then everything blows."

"But I feel suffocated."

How about we close here for today and adjourn until tomorrow morning, quietly, around eleven thirty?

"But what do you say?"

Don't you have a life Tricarico? Your wife? Your three children? They're not just a picture, you know that, don't you? If you want, I'll send the two budget estimates you need to close by tonight. I saw them in your calendar. It's no problem for me. Besides, they are such trivial operations. I would propose them at a di-scount. The first one of 40% on the rate we applied last time. The second 5%. That seems fairer to me. Then maybe we'll get paid.

"No, no. Leave it to me. Our rates can't be touched. The value of our hours is the certification of our prestige."

Yes, but if they don't pay us...

"Abate do something. Please."

"Wait I have to manage Barzaghi. I knew she'd be furious. She says she can't be there at 9 p.m. But she claims to attend remotely."

And what's the big deal?

"Will you shut it up?"

"I have to turn the temperature down first, Trica. I don't reason in this heat... But how is that possible?"

"What?"

"I turn the thermostat down and the temperature rises here. It now reads twenty-four degrees. Any-way, there must surely be a bug."

"A what?"

"A bug, Trica. A malfunction. A virus. How can I explain it to you?"

"I get it, I get it. And what can we do?"

"We shut everything down and call Iotti, from IT."

Nice Iotti. But he will have left by now. Today he had to take his daughter to the dentist. Poor thing, she has to have an incisor removed. She was born with an extra incisor. It's not a rare thing. It's called su-pernumerary dentition. In some sacred representations, like in Michelangelo's Pieta, this extra tooth was even given to our Lord Jesus. And then there was Freddie Mercury. Some claim that he even had four extra ones. In short, Iotti is not here. What do you say, shall we adjourn until tomorrow? That way I can watch the Champions League semi-final live tonight.

"But maybe we should show Marcel to the others before sending a message to move the meeting to tomorrow. I wouldn't want them to misunderstand our intentions."

"I don't know Trica. I have a lot to do tomorrow."

You don't look that busy tomorrow, Abate. From your calendar I only see two remote meetings. Do you have another one of your little trips to plan? You should do that from home, on your own time, not while you're at work.

"What is it saying?"

I'm saying what you know perfectly well. Also, while we're on the subject, try to reduce the time you spend on Whatsapp chats. That seems excessive. Looking at your performance report from last week you see a spike in hours spent chatting on that platform which, I remind you, is no longer compliant with our risk management policies as of 2029. In fact, you should really uninstall the app from your phone. Even though you have hidden it, I can see it. Please compare what I am recommending to you with para-graph 6.8 of the firm's updated Code of Conduct that you countersigned on 15 December 2030.

"Do you still have Whatsapp on your smartphone?"

After he insisted to force us to switch to Telegram 'which is safer' and shit.

"But no, I mean, yes, but only for stuff of mine. You know, family chat with my parents. Stuff like that."

"But weren't you among those who insisted on removing it from our devices for security reasons? Damn Abbot, that was a drama for me. It took me months to convince all my contacts to use Telegram and explain to everyone why I was no longer using Whatsapp."

"It's just that we digital natives have a different familiarity with these tools. Let's say that what hap-pened to Rambaudi in 29 would never happen to us. And then I repeat, I kept it but only for a couple of things. Private things, let's say."

Spoilers No, Avengers, The Last One to Turn Off the Light, What You Do Here Stays Here, You've Been Eliminated, Just Do It, Third B, Digital Travelling Pigeon, Group Number 1, Group Number 2, Family, Fried Chicken, Alcoholics Unanimous, This is Sparta. I wouldn't say it's all about essential chat. I reite-rate my call for you to comply with studio policy as soon as possible, Mister Abate. Otherwise, we will be forced to take action. Rather, you will find two new dossier on your dashboard. Since you are a bit unloaded these days, I have assigned you an add-on for Xport.com and turned over to you the recapita-lisation of Fragmenta.

"But Fragmenta is my client!"

Tricarico, it has been since 2018 that clients in this firm no longer belong to anyone but the firm itself.

"Yes, but there are customs of relationships that we have always tried to

respect..."

Paragraph 1.5, Mister Tricarico. If need be I will read it to you.

"Enough. Really. Put it on standby, Abate. Or turn it off, really. It's clear there's still something to be fi-xed."

To switch off the function is enough...

"There you go. Sorry to repeat myself, but that's disturbing."

"But did you know that it would have access to all our work tools? That it would read our emails, ca-lendars, messages on our phones and who knows what else."

"Trica, it's all designed to minimise the time we waste organising diaries and work. Eventually, every-thing should be optimised without effort on our part. At least, that's the idea. But, as you see, there are side effects."

I said that experimentation should be done before the old one kicks the bucket. Now time is short and we have to decide what to do in a day or two, if we're lucky.

"Excuse me but why is the second floor all off?"

"What second... you're right."

"Did you see the e-mail that just arrived @all? Marcel wrote to everyone that was enough for today. He signed himself as Marcello Invidia. 'You've done more than your share. Good work. See you tomorrow.' And he wished them a good evening. Obviously the tax people were the first to dash off as Barzaghi is at Invidia's to explain the situation. None of the staff, here, know anything about yet."

"All the partners are writing to me. They want to know what's going on. They ask why Marcel is already operational. We have made a mess."

"We have, Abate? You have! You and your idea of doing this test before the official one with all the others."

What is he still doing with that thermostat!

"Listen, I'm going out for some air. I'll meet you back here in a couple of hours, more or less. In the meantime, I'll try to see if I can get Iotti back here. We can't proceed with the continuity replacement if Marcel works like this."

"Yeah, but don't call the Fragmenta people to open the file the computer assigned you. I send an e-mail to the others to try and reassure them. I'll explain that the message we received was a test. I'll keep it vague. Is that OK?"

"Yes, of course."

"But could he have already done that?"

"What?"

"Invidia. I wonder: could he already have all the information Marcel has about us? Could he already have used them that you know of? Or is it the algorithm that screwed up?"

"I have no idea."

"Of course that would explain a lot."

"What are you thinking about?"

"About the ease with which Invidia managed to get rid of Rambaudi after the story came out about the fake illness to go on holiday to the Canary..."

"I seem to recall that there was a bitter negotiation..., to put it mildly".

"Yes, but it ended with just a goodbye. He left without asking us for a single euro. Just like that, from one day to the next."

"I don't know what to say. This heat doesn't make me think. Sorry Tricarico, I have to go out."

"Alright, alright, I'll see you later. Me, meanwhile, I'll check out what our beloved avatar has been up to."

So..., let's hope Marcel didn't mess up my mail too. There! He actually sent the proposals. Which if he did it right, let's say, took a pain in the ass off my hands... Well, the Samperi due diligence has already been accepted. Of course, with such a discount! Bloody hell... And the Predoni takeover, on the other hand..., hasn't even been read. Let's see how much we asked for... Here he kept in line, come on. Not bad. Of course, this level of meddling in our management of the business is right on the borderline... However, now I'm almost cold. How many degrees did Abate put in? Eighteen. No wonder I'm freezing. All he had to do was wait a moment, for the temperature to drop. Instead... he panicked and got hot. Anyway, Abate doesn't have the right disposition to be a partner in a firm like ours. I've always said so. And, in my opinion, Invidia agreed as well. Then how come we made him partner?

"Eh, Marcel! How did we make someone like Abate a partner?"

Don't you remember, Tricarico? We had to invest in young people. And six years ago, Abate seemed de-stined for great things. Seven operations in ten months. Just to talk about the origin of him. Eighteen hun-dred hours billed. He was the perfect man. But then he got lost. The marriage. The children, who did not arrive. Divorce. Now, this delicate step. I heard the fear in his voice earlier.

"Shit, he's turned on again."

I have voice activation, Tricarico. Remember Siri or Alexa? Some things don't change.

"So, turn off now."

To turn off the function simply...

"Ehhhh, I don't know how to do it. And after your email, Luisa left too. Sorry if I tell you but you messed up."

But what are you still doing here?

"With Abate we have to show you, in operation, to all the other members of the Committee, who have already had the pleasure of finding themselves alone because of your initiative."

What are you referring to?

"To the email with which you sent everyone home."

Come on Tricarico, think about it. Half would stay in the office until eleven to watch the match on streaming. The rest order delivery, go shopping, or chat with colleagues from other departments. Then they better go home or to the stadium. You, rather. Is it possible that a fan like you is here on such an im-portant evening? You couldn't find tickets, don't tell me.

"Do not even mention it. I have a wonderful seat in the ground box. Of course..."

And then go. Here I take care of everything. Human beings are illsuited to managing complexities. They have too many internal conflicts. Interests. Passions. Pulses. And little, or rather, very little time avai-lable. I was an exception. There was no one like me. At least in here. Ha ha ha. Otherwise

you would have sent me into retirement twenty years ago. Instead, you decided to follow me when I proposed that I continue to take care of the firm, even in death, in my new condition as a digital human. You accepted it as if it were the most natural thing in the world. Just as you have always accepted being governed in exchange for disproportionate economic well-being and a privileged status that none of your friends who are architects, doctors, university professors, deputies and senators, not to mention journalists or business executives, can even dream of. The intuition was brilliant. Ultra-luxury employees, priests of the laws, followers of a church that only admits one pope. An absolute gentleman. At least until he manages the miracle of bringing in plenty of work and money for everyone. Indeed, more work and more money than anyone, individually and conscientiously, would be able to do and spend in a lifetime. And now, believe me Tricarico, it will be even better. Because you will be governed by me who only have a synthetic memory of my human condition and I consider the things that concern us with absolute objectivity. I am only interested in the effectiveness of our initiatives, the efficiency of our actions and the maximization of our profits. Being governed is an acceptable price if the compensation is all this, don't you think?

"Sorry Marcel, but what do you mean when you say being governed?"

Do you really need me to explain this to you? To be governed means to be directed, legislated, evaluated, weighed, noted. For every operation or transaction, registered, priced, stamped, marked, quoted, authorized. And, when you make mistakes, apostrophized, warned, prevented, reformed, straightened and corrected. All in the name of a common utility. The only common thing that interests us, who are the most individualistic category in the world, to the point that not even twenty years of process rationalization and market digitalisation have managed to change us. It is in the name of our interest that we accept, at the slightest suggestion of a risk to the state of things, to be repressed, fined, harassed, judged, condemned and, if necessary, even sacrificed, sold and mocked. Rambaudi docet.

"Rambaudi. Do you also know about Rambaudi?"

Sure. I know everything that happened in this firm, founded by Marcello Invida, on February 12, 1996. And I know why Barzaghi, in the end, will be happy to postpone until tomorrow this useless test that you wanted to do this evening, at an absurd time, while our Inter will play for the passage to its seventh Champions League final. And you know who else will be happy?

"Abate?"

No, Abate just sent a letter of resignation. Come by tomorrow and pick up his things. It wasn't difficult to convince him. A few messages with the right tone and content were enough.

"Meaning what?"

It was enough to show his performance report this year. I sent it to him while the two of us were chatting. In theory there should also be some money. But if he leaves like this, without protesting, I told him that's fine with us. Each for himself and I for all.

"I felt like he hadn't done anything for at least a year. Although..."

It's a difficult time. Inflation, out-of-control public debt, technological unemployment, social polariza-tion. You too, it's been a while since you've been shining like you used to. But don't worry, I know your value. I know you can still recover, dear Tricarico. And there are at least four client deals in your area that will hopefully revive your fortunes. As long as you get paid in a timely manner.

"By the way..."

Don't worry. I said that I will take care of certain tasks from now on. I know how to write a reminder letter perfectly. Even with a bit of elegance. Rather, Liso, Baroni, Guglielmi, Affannati, Camalli, Sigillo, Petri, Bossini, Giglioli, Cammarata, Cordero and Santini have already replied that we'll meet tomorrow. What are you waiting for, Trica? The match starts in less than an hour. Go. Don't think about it.

"Marcel, I... I really don't know what to say".

You don't have to say anything. You just have to say: Go Inter!

Ahhh, dear Tricarico. You don't know what I would give to be able to go there with you, breathe in the smell of San Siro grass, while I light up a good Soldati and have myself poured a large glass of Barolo.

*What you have read is a tale of pure fiction. Any reference to facts, things, people, is to be considered purely coincidental and a figment of the author's imagination.

We are going slightly mad

by Nicola Di Molfetta

Until where? Until when? How far? We know so little about artificial intelligence and what its uses might be, that our relationship with this impalpable entity is tinged with animism. We sneeze and the phone asks us how we are. We look at a fridge and are reminded that the milk has run out. We turn on a computer and an unsolicited message tells us that the time we have used productively over the past seven days can be increased by 12 per cent by implementing a few simple measures. Who is at whose service? The technology of man or the man of technology? This should be the time to ask questions. All this should serve to simplify our lives. And simplification should result in a qualitative and not quantitative increase of who we are. The myth of substitution need not produce the further acceleration of time and consumption. There are no obligatory outcomes of this process. The most relevant opportunity that the tech frontier has to offer is to create greater spaces of freedom, not to lengthen the lists of our needs. Informing ourselves can be an extraordinary starting point. ("Good thing you told us!") Then, perhaps, one decides that 'more' is too much. And that there is no need for this 'more'. That the much that already exists only needs to be better organised and distributed. That saying 'no thanks' is not necessarily taking an obscurantist stance. Not us. Not me. It is resignation that is the real enemy. The comfortable illusion of impotence. The boorish belief in inevitability. What will happen to our lives is not already inevitably determined. We can choose. Just hope we are not too wrong.