

The Value of Human Skills in a World of AI

By Suzanne Galletly

AI is expected to grow exponentially in the coming years, which will result in many changes to industry and society as a whole. But in a world where AI is increasingly prevalent, is there still such a thing as ‘human’ skills? Will we humans become superfluous in a world taken over by machines, or can we still provide unique value?

A New Paradigm

In March 2021, the European Commission laid out its vision for a human-centric, sustainable digital society to empower citizens and businesses in Europe by 2030. Part of this vision describes a Fifth Industrial Revolution, Industry 5.0, that will see humans working alongside advanced technology and AI-powered robots to enhance workplace processes and produce increased prosperity for all¹ (see Figure 1). This new paradigm has significant implications for the economy, including the need for increased focus on resilience, sustainability, and human-centric aspects.

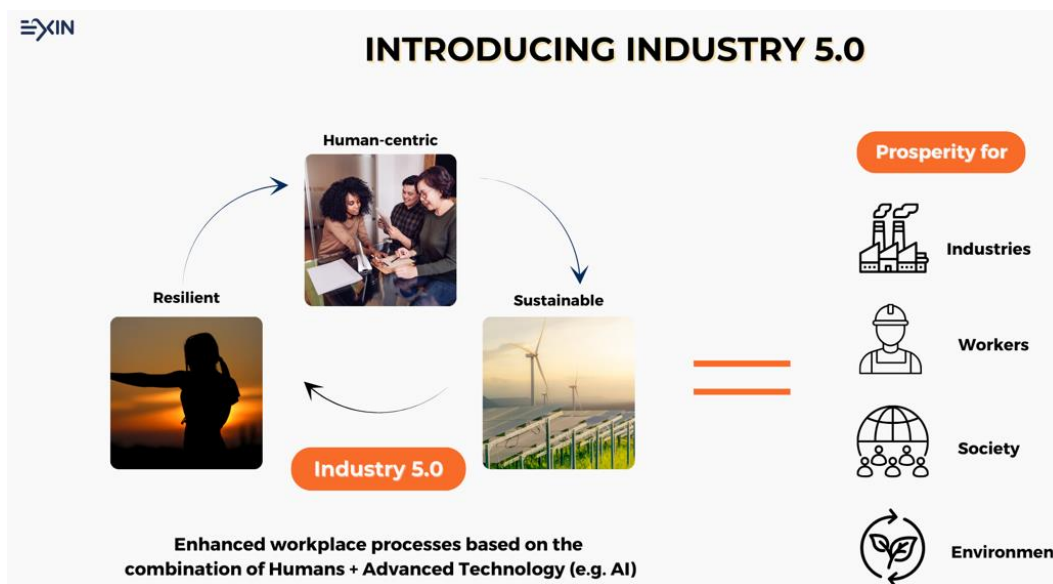


Figure 1. Industry 5.0, EXIN, May 2024

There is still a long way to go in realizing this vision. Currently, AI adoption amongst enterprises is lagging behind at only 11%, which is a far cry from the European Commission’s target of 75% by 2030². There are, however, strong indications that this is likely to rocket in the coming years. In a recent extensive research report from the World Economic Forum, AI and Big Data emerged as one of the three top skills needed by organizations for the period 2023-2027, showing a massive climb in rankings compared to comparable surveys from previous years.

¹ ‘What is Industry 5.0 And How it Will Radically Change Your Business Strategy?’, Jeroen Kraaijenbrink, reported by Forbes, May 24, 2022.

² ‘Report on the State of the Digital Decade 2023’, European Commission, September 27, 2023.

Similarly, AI and Machine Learning specialists were amongst the jobs that were expected to grow the most during this period³.

So, let's assume that this vision will become a reality in the coming time. Where does that leave us in terms of skills?

Where Machines Outshine Humans

First of all, it is good to acknowledge that machines are quite simply better than humans at performing certain tasks. One of the best-known examples is the breakthrough in 1997, when the AI system Deep(er) Blue beat the world chess champion by searching 200,000,000 moves per second. This was an early example of Symbolic AI, as part of the Good Old-Fashioned AI (GOFAI) tradition, based on explicit encoding of human knowledge into computer systems. Since then, AI has come on in leaps and bounds. We have seen the rise of Machine Learning, which gives computers the ability to use data and algorithms to enable them to identify patterns, learn and adapt, without explicit programming of rules. And at the end of 2022, Generative AI exploded into our lives when ChatGPT took just five days to reach one million users, leading to a transformation in how content is developed, impacting many different professions and sectors (see Figure 2). Machines are excellent at processing and analysing massive amounts of data and learning from it. This makes them good at performing transactions, making predictions, generating content, and adapting as new data comes to light.

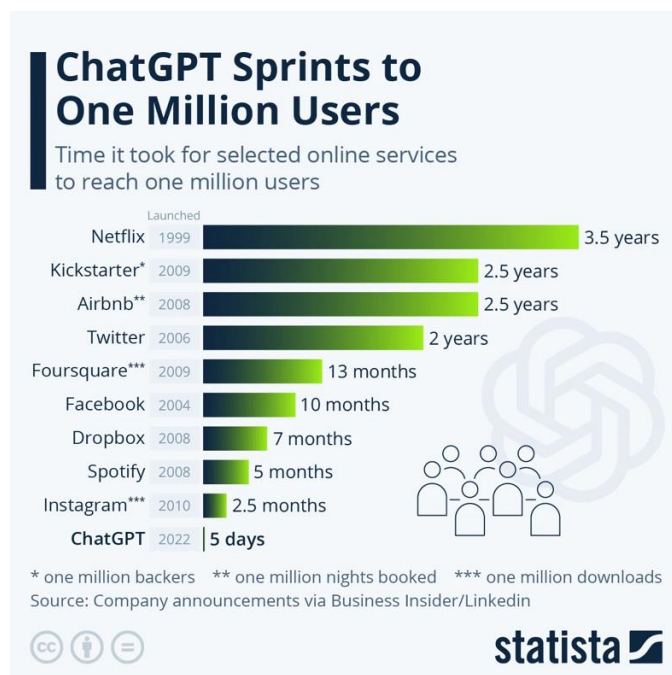


Figure 2. The Explosion of ChatGPT, Statista via Business Insider/ LinkedIn

What About 'Human' Skills ?

We should let machines do this heavy lifting as we will never be able to compete with them on this front. The good news is that we don't have to! As AI systems continue to develop, it may be that at some point they develop capabilities to rival and be undistinguishable from those of a human, including the nuances, sensitivities, and

³ 'Future of Jobs Report 2023', World Economic Forum, May 2023.

emotional intelligence that humans are capable of showing. This is known as ‘Artificial General Intelligence’ (AGI) or Strong AI, as opposed to Weak or Narrow AI which is prevalent today. This is still far away, with experts estimating that there is a 50% chance that AGI will occur by 2060. However, not all experts share this view. Rodney Brooks, a roboticist at the Massachusetts Institute of Technology and cofounder of iRobot, believes AGI won’t arrive until the year 2300; other experts believe it will never happen⁴. In the meantime, there are still certain skills that are better (or differently) developed in humans than in machines. This paper focuses on four of these: Leadership; Creativity; Judgement; and Empathy.

Leadership

There are many different types of leader and leadership styles. However, all good leaders have several things in common. They have a vision of where they want to go, they have the energy and determination to work at realizing their vision, and perhaps most importantly, they have the charisma and personal skills to inspire others to join them in realizing their vision. This use of charisma to influence and inspire others is, at least for now, a very human skill. A robot panel at the United Nations’ AI For Good Global Summit in 2023 claimed that they could be better world leaders than humans⁵ – but as yet, there are no true ‘robot leaders’.

Creativity

Since ChatGPT took the world by storm at the end of 2022, it has transformed the way that content is generated in many different contexts, making it more contentious than ever to claim that creativity is a ‘human’ skill. Nevertheless, this claim is valid! As machines learn from data, fresh (original) thinking is continually needed to make sure that the dataset which AI systems rely upon is both large enough and broad enough in perspective, to prevent bias amplification and closed system loops. In addition, whilst AI systems present many opportunities for business innovation and solving societal problems, creativity is needed to translate the capabilities of such systems into solutions which work.

Judgement

The sophistication of AI systems means that they are often better at making predictions than humans, and as such, they are often considered to be better at making decisions. However, this ignores the ‘nuances’ that humans can understand in making judgement calls. Humans will not only consider data but are also able to understand context, apply intuition, show empathy, and apply ethical reasoning, which allows them to consider subjective factors which AI may overlook. This is particularly useful in situations where there is a high level of uncertainty or ambiguity (which is increasingly the case in a VUCA world), and in cases where there are ethical perspectives to consider.

Empathy

Social interaction is a basic human need, and connecting with other human beings has been proven to improve health and decrease feelings of loneliness. Empathy is important in establishing these social connections. It is worth noting that AI can mimic empathy quite effectively. For example, the EMO AI desktop pet is a small robot which can display a range of emotions in response to its owner’s emotions, including excitement, boredom, happiness, sadness, irritation, and disappointment⁶. The initial results of experiments involving social robots are promising. A recent study by the University of Glasgow found that people interacting with social robots disclosed more about themselves over time, and they reported both improvements in mood and a reduction in feelings

⁴ ‘What is Artificial General Intelligence (AGI)?’, McKinsey & Company, March 21, 2024.

⁵ ‘AI robot panel tells UN press conference they could be better world leaders than humans’, published by NBC Washington, July 7, 2023.

⁶ ‘Top 4 Best AI Companion Robots of 2023’ by Jason Lau, reported by FangX, November 7, 2023.

of loneliness⁷. However, despite these advances, many people fear the ‘dehumanization’ of society if AI replaces human interactions, and as such there is still a strong need for humans to connect with other humans. Empathy is perhaps the most ‘human’ skill of all, by definition, as only another human being can truly understand what it is like to be a human being.

Which Skills Are Needed?

To thrive in a world where humans and machines work side by side, new skills will be required. This includes knowledge of technologies such as AI, although the form this knowledge takes will depend on the role you have. Certain technical roles will need highly specialized AI knowledge, business innovators will need to understand the opportunities of AI, and those in governance and risk management roles will need to gain knowledge of the ethics and compliance related aspects of AI.

There are certain skills which will be needed across the board, regardless of role. According to World Economic Forum research⁸, the top two skills organizations expect to need between 2023 and 2027 are Analytical thinking (a skill which is related to Judgement) and Creative thinking (see Figure 3). There is a certain irony here, as AI is also particularly good at both analysing and creating; but the way that AI applies these skills is different to the way that humans do. On the ‘human’ side, these skills are needed to be able to understand complex business situations (potentially with the help of AI), to use judgement and analytical thinking to assess how AI can be used to solve business problems, and to use creativity to translate the capabilities of AI into business solutions. Empathy and Leadership were also mentioned in the Top 10 required skills, showing that the aforementioned ‘human’ skills are very much in demand. Lifelong Learning was also in the Top 10, reflecting the need to continually learn and adapt in a fast-paced environment.

⁷ ‘Social Robots Could Be An Effective Tool To Combat Loneliness’, University of Glasgow, December 4, 2023.

⁸ ‘Future of Jobs Report 2023’, World Economic Forum, May 2023.

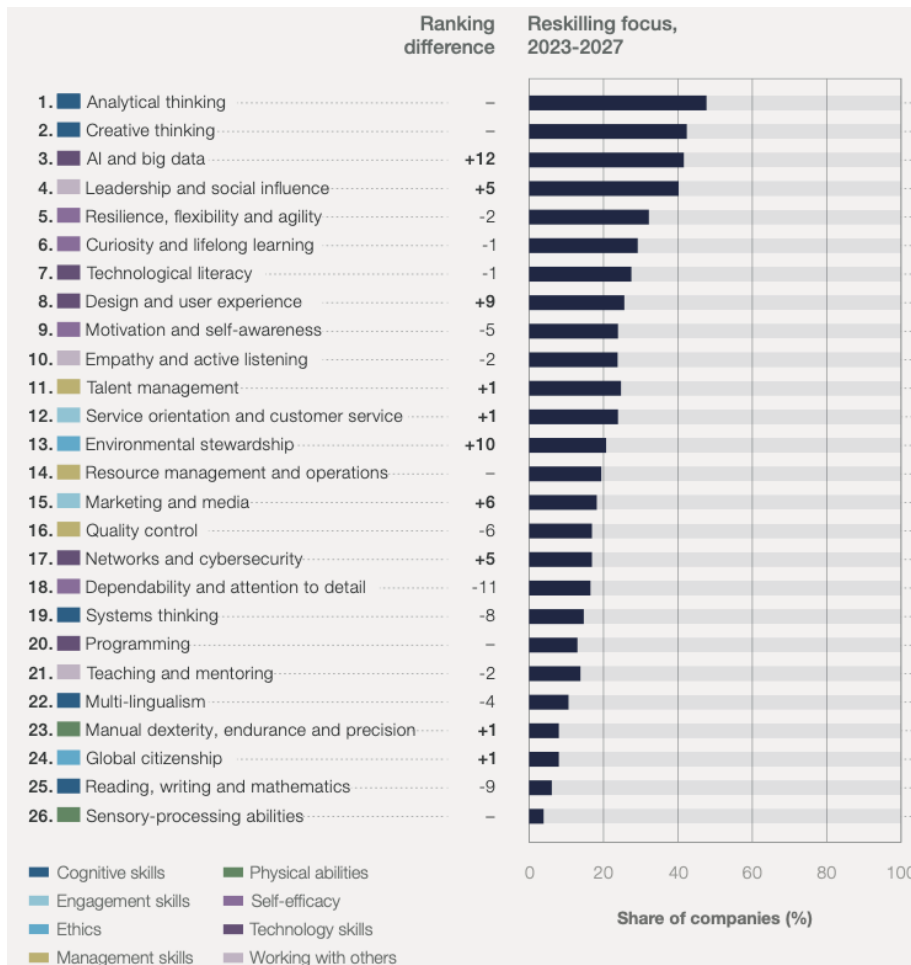


Figure 3. The Top Skills Needed for 2023-2027, Future of Job Report 2023, World Economic Forum, May 2023

Opportunity or Threat?

This leads us to the million-dollar question: Should we see AI an opportunity or a threat? It is certainly the case that it will transform the labour market, albeit gradually. This is nothing new; there have been many points in history where new innovations have impacted jobs. For example, in the 19th century, English textile workers formed the Luddites movement (named after their leader, Ned Ludd) to oppose the mechanization of the textile industry. Before then, the textile industry was largely a cottage industry, with skilled workers using hand-powered machines such as the spinning wheel and handloom. Their jobs were threatened by the invention of the spinning mule and the power loom, which greatly speeded up the spinning and weaving process, and did not require skilled labour to operate. From 1811-16, the Luddites carried out clandestine raids, often destroying the machines they saw as a threat to their jobs and burning down factories⁹. This coined the term “Luddite”, which is still used today to refer to those opposed to industrialisation, new technologies, or even progress in general. More recent times have also witnessed the gradual disappearance of certain jobs, such as switchboard operators, factory workers, agricultural workers, and shop personnel as a result of the upsurge of e-commerce.

⁹ <https://www.worldhistory.org/Luddite/>

There is no doubt that technology enables innovation, but in the end, it is always people that make the difference. The opportunity of AI lies therefore in the ‘golden combination’ of Human + Machine, where AI is not replacing humans in the workplace, but instead complementing them to strengthen industry and help solve societal problems. If we look closer at what this combination of Human + Machine might look like, there are three key areas where AI can strengthen our human capabilities:

Embodying

An example of embodying is surgical robots. For example, the Da Vinci surgical system allows surgeons to perform delicate procedures with more precision. The robots are controlled by surgeons, who are in the lead and use their judgement honed by experience; but the robots offer steadiness and accuracy that enhance the surgeon’s capabilities¹⁰. Embodying can also be applied in dangerous environments, for example performing tasks in space, entering extremely cold or hot environments, or using military robots.

Amplifying

AI can be used to amplify our own human capabilities. An example of amplifying is the Dreamcatcher AI software from Autodesk, which is used to amplify creativity in the design process. A designer provides Dreamcatcher with criteria about the desired product - for example, a chair which can support up to 100kg, with a seat 40cm off the ground, made of materials costing less than €50, etc. Dreamcatcher utilizes AI algorithms to create design outputs based on the input parameters, churning out thousands of designs that match those criteria, often sparking ideas that the designer might not have initially considered¹¹. The designer can then guide the software, leading to a new round of designs, and can also tweak the design and add their own flavour. The designer is still using his or her creativity, but these human capabilities are enhanced and amplified by the AI software.

Interacting

AI systems can also be used for interacting. For example, the charity CALM (Campaign Against Living Miserably), a UK based suicide prevention charity, used AI-enhanced chatbot QBOT to reduce queue times during the pandemic, when many people were struggling with mental health issues. This helped them 24 hours a day to direct calls to those most in need, who would then speak to a human (showing empathy), to help them through the crisis. Within the first year, it handled more than 26,000 connected users and 1 million messages, proving that it is a solution which can be scaled¹².

Conclusion

By embracing the possibilities of the golden combination of Human + Machine, we can take advantage of the opportunities of AI instead of seeing it as a threat. For this, we need to develop knowledge of AI as it relates to our specific role - and continue to hone the ‘human’ skills that enable us to add our unique value and make the difference in an ever-changing world.

The Artificial Intelligence Skills Alliance (ARISA) and EXIN are both committed to delivering AI knowledge and skills so people can understand, design, and make use of human-centred, trustworthy AI-based solutions.

¹⁰ ‘Embodied AI: The Future of Robotics and Autonomous Systems in Healthcare’, Emily Lewis, reported by LinkedIn Pulse, September 13, 2023.

¹¹ ‘Innovative Design Evolution: A perspective on generative design’, Arpitha S, reported by Parametric Architecture, October 14, 2023.

¹² ‘Mental Health: AI chatbots that charities use to save lives’, Ben Wodecki, reported by AI Business, November 22, 2021.

About the Author



Suzanne Galletly is Digital Skills Director at EXIN, where she is accountable for the design and positioning of EXIN's certification portfolio for digital skills, in line with societal & business trends. Calling on more than 18 years of experience in the field of digital skills development, she helps ensure that EXIN is at the forefront of industry developments. She contributes to a number of industry forums and boards, including the Artificial Intelligence Skills Alliance (ARISA). Suzanne is passionate about everything concerned with the human side of digital, including lifelong learning, workforce transformation, and digital ethics.

About EXIN

EXIN empowers professionals worldwide to excel in the digital domain. Founded in 1984, its portfolio includes relevant industry topics such as SIAM, Project Management, Agile Scrum, AI, Data Analytics, and Information Security. With a global partner network, and multiple ways to help you prepare for your exam, EXIN independently assesses and validates competencies in the digital realm, ensuring that our certifications carry a seal of excellence. In 2021, EXIN joined forces with the Software Improvement Group (SIG) to amplify its impact and build a healthier digital world.

About ARISA

The Artificial Intelligence Skills Alliance (ARISA) fast-tracks the upskilling and reskilling of employees, job seekers, business leaders, and policymakers into AI-related professions to open Europe to new business opportunities. It is a four-year transnational project funded under the EU's Erasmus+ programme. For more information, contact info@aiskills.eu | aiskills.eu