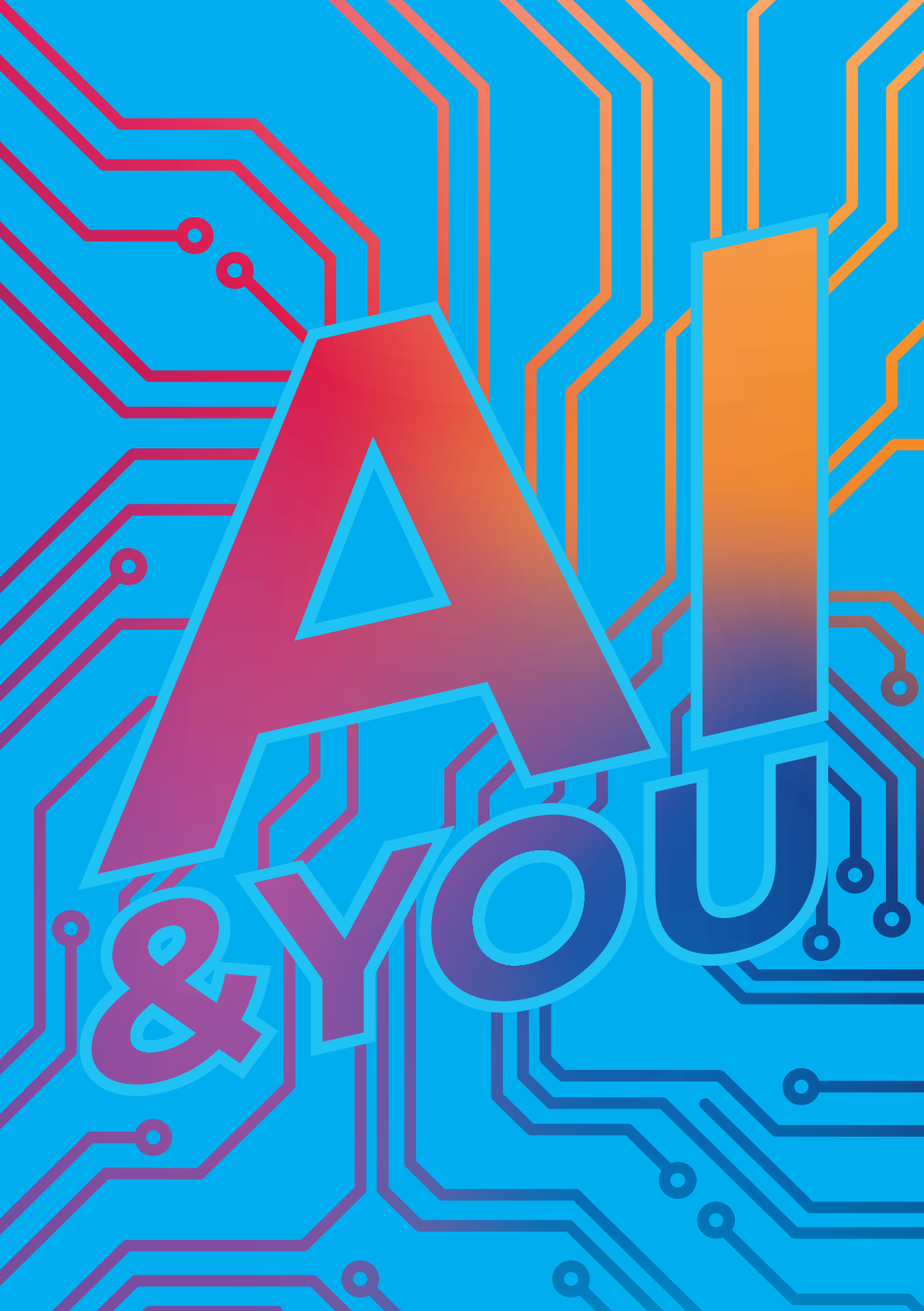
AI
&YOU

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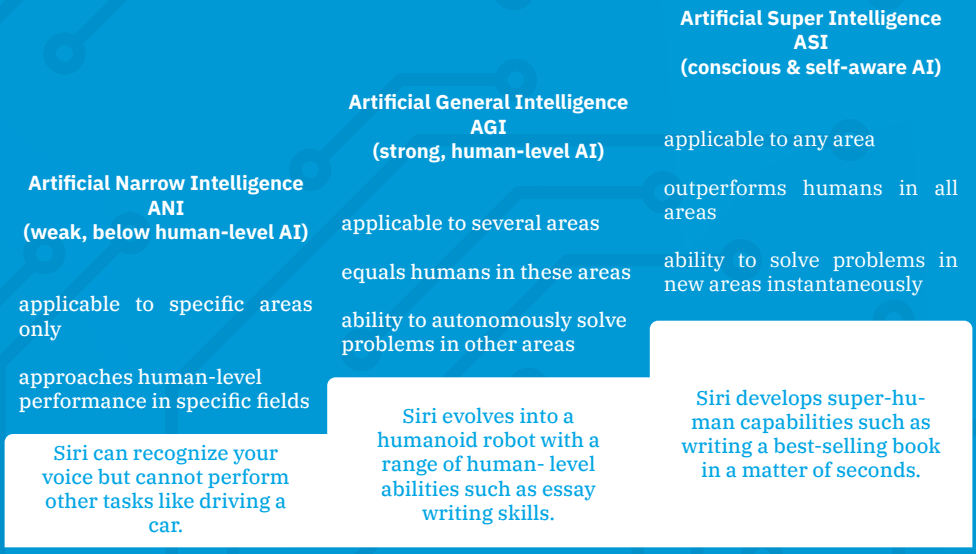
Why AI Matters

Almost half of all jobs are at risk. That is the shocking message of the researcher duo Frey and Osborne. Other experts agree: Andrew Yan-Tak Ng, a world-renowned Artificial Intelligence (AI) researcher, believes that it is "difficult to think of a major industry that AI will not transform. This includes healthcare, education, transportation, retail, communications, and agriculture. There are surprisingly clear paths for AI to make a big difference in all of these industries." Clearly, Ng is referring to the end of employment as we know it. Consequently, our generation needs to carefully consider how we design our career paths in this changing world.

In the following pages, the concept of Artificial Intelligence is explained, and it will become clear why this technology is so powerful. Additionally, we will take a look at the future of the job market. Lastly, we explain how you can become and remain relevant, even after these changes hit global labour markets.

AI Definition and Explanation

So, what is Artificial Intelligence? Even though the term was first mentioned back in the 1950s, the scientific community still cannot agree on a precise definition. Some say that Artificial Intelligence describes the ability of computers to think and perform tasks that humans do. Others claim that it is something beyond human potential because humans are not always rational and tend to make bad decisions. Based on these views, three general categories of Artificial Intelligence can be differentiated.



The truth is that Artificial Intelligence, for now, is a bunch of mathematical and statistical methods that tend to produce meaningful results when given big piles of data for analysis. Potential use cases include classification problems, regression predictions, and unsupervised learning (the type of learning when no labeled data exist).

That may not sound all that exciting, but what is promising is the rate at which the field is growing and the types of problems that have been conquered over the years. Moreover, no one knows what the technology is truly capable of.

No matter if you look at Siri on your iPhone, diagnosing cancer, helping scientists discover the world-famous Higgs Boson, designing public transport schedules, calculating insurance premiums, recommending the next show to watch, or enabling a world full of self-driving cars: Artificial Intelligence makes it possible. Furthermore, it is not big news anymore that computers are better than humans at playing chess or beat the world champion of the ancient Chinese board game Go. Lee Se-dol, a master of Go even quit his job out of frustration, realising that he could never beat the computer.

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In addition to this, new developments are announced frequently. For example, Facebook and Carnegie Mellon University developed an Artificial Intelligence that defeated professional poker players in the most popular format of the game: six-players, no-limit Texas hold 'em. Poker strategies have been a challenge for mathematicians for decades since players have incomplete information and employ psychological tricks like bluffing.

Computer experts even look at us humans for inspiration. Researchers are trying to mimic the workings of our brains, leading to the creation of 'neural networks'. Image recognition algorithms are based on the biology of human eyes. Text recognition methods use conceptual ideas of our memory to approach their tasks. It would take the entire pamphlet to name all the branches of science and life where Artificial Intelligence is already making an impact today, and there is far more that awaits us in the future.

The Impact on the Job Market

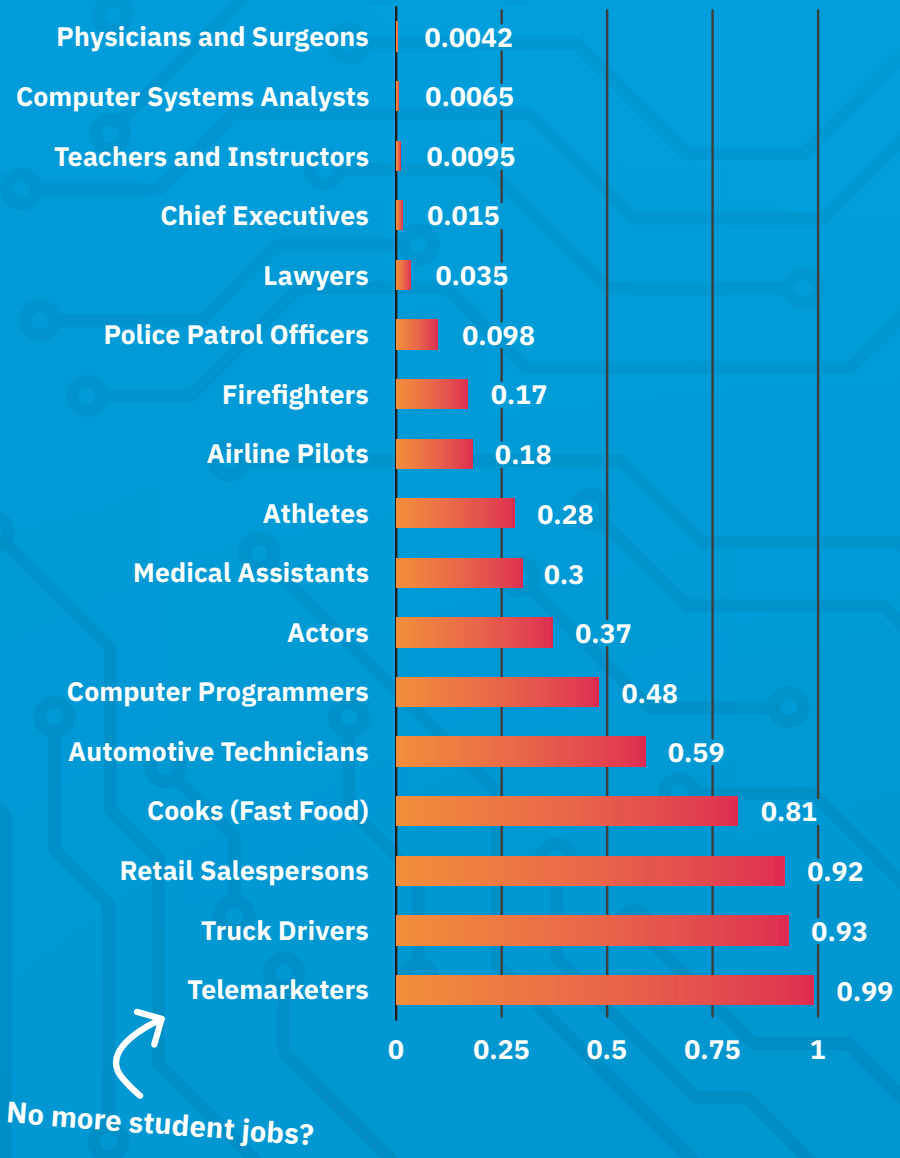
The world of employment will drastically change due to Artificial Intelligence. However, these changes will not affect all jobs equally. Some professions will disappear completely, while others we have not even heard of today will be created. Of course, no one knows for sure how a specific job will be affected by the rise of Artificial Intelligence. Nevertheless, experts have looked at different occupations and predicted their likelihood of being affected by this mega-trend.

On the one hand, repetitive jobs or ones that can easily be broken down into small, routine steps are easier to replace. On the other hand, jobs that require unpredictable movements, a high degree of creativity, or social/soft skills are more difficult to replace.

Based on these criteria, Frey and Osborne (the 'almost half of all jobs are at risk' guys) have assessed the likelihood that a profession is going to be replaced by an artificially intelligent system in the next 40 years. A value close to one means an almost certain replacement, while low values indicate a lower probability of computerisation.

The graph below shows some common jobs according to their probability of computerisation (from least- to most-computerisable) (based on Frey & Osborne, 2013).

Job Loss Graph



Outlook

Spoiler Alert: The next decades are probably going to be rough. In the first wave of automation that is currently ramping up, easily replaceable jobs are likely to disappear. These occupations can be quickly and cost-efficiently automated. Telemarketers and truck drivers are just two examples. Retraining thousands of middle-aged truck drivers will be a major challenge: Should they all become computer systems analysts?

Once artificially intelligent systems become better at controlling robot movements, many manual labour jobs could be slowly replaced. Your back-up plan of working in the kitchen of a fast-food company or for the car-repair shop around the corner will probably be no more.

The second wave of automation will only start if the remaining bottlenecks of creative and social intelligence are worked out. For this to happen, machines would need to be able to convincingly participate in human interactions and generate useful ideas or objects. If this were the case, any job would be at risk. The only upside: You would no longer have to write your school essays yourself, Siri could easily do it for you. However, most experts believe that this is a highly unlikely event in the near-term future, as the current challenges are particularly difficult to solve.

Remaining Relevant

If you aren't completely freaked out by now and still reading this – congratulations! You are probably asking yourself: How can I ensure that I will not be replaced? Here are three golden rules that can help you remain relevant:

1st, education is key. Jobs that require academic degrees are linked to a lower threat of computerisation. Just look at the previous graph: The occupations most at risk are easily computerisable and require no secondary education. The top five 'safe professions' are mostly staffed by individuals who have completed higher-education programs. Key takeaway: 'Don't do drugs and stay in school.'

2nd, jobs that are easily described by repetitive procedures are more likely to be replaced. Just compare Jamie Oliver who writes cooking-books for a living and you, trying to follow his instructions. Who is more replaceable?

3rd, there is one ingredient that artificially intelligent systems struggle with the most: humanness. Today's systems lack human-level empathy and some experts believe that this will not change in the future. Out of all 702 jobs that Frey & Osborne (2013) assessed, they assigned the 'recreational therapist' the lowest risk of replacement. While some of their job activities are routine, recreational therapists need a great deal of compassion and other social skills. It is safe to assume that patients will always value human assistance in helping them improve their physical and emotional health.

Thus, when you consider your future job, make sure that it is based on a solid education and requires non-routine tasks, in addition to your unique abilities as a human being. This combination will secure your position in a drastically changing labour market.

Video Recommendations

CGP Grey – How machines learn (8:54)

TEDx & Andy Chan – Artificial Intelligence and the Future of Work (15:24)

TEDx & Volker Hirsch – AI & The Future of Work (18:20)

Sources and Further Reading

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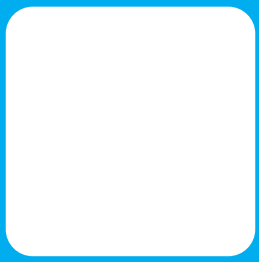
Choosing your job will be one of the most important decisions of your life. Therefore, you should be aware of how Artificial Intelligence is going to affect your future career. In this short pamphlet, you will learn how future-proof the professions you are interested in are. Additionally, you will receive some tips on how you can make sure that artificially intelligent systems will not one day replace you in the labour market.

Online-PDF



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