

A message on AI

By Daniel Wiltshire Leppänen

Since I started to draft this letter about four weeks ago, I have noticed a huge increase in discussions, news, and articles online revolving around the topic. In my circle of family, friends and acquaintances, everyone already talks about AI. In the start, the topic was, while familiar, foreign to most. I have tried to show how quickly AI will evolve and affect our daily lives, but I think this is already a great testament to that. In only four weeks, it seems this is the only thing the media talks about now, and there are more articles about it in my daily feed than I can read through an entire day.

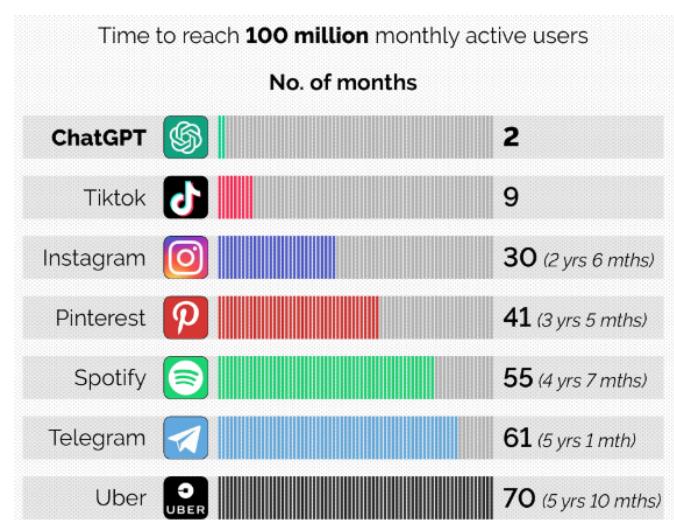
The reason why I wanted to write a letter is exactly because of how quickly it is getting here. AI is the next huge technical evolution in our time and serves as a stepping stone to an unimaginably different future for all of us. To understand this new world, in less than a generation to come, one has to start being involved already today. By my account, the changes might feel to be of a level that only a god can account for. In the next year, we will already see how the technology transforms our daily lives when incorporated into our health care, school systems and jobs. AI will, in many aspects, like when the internet became popular, be a game of being in or being out.

*While this might feel dire, many good things can come out of it. I hope you enjoy reading this message as much as I enjoyed writing it. If you have any questions, feel free to email me at
daniel.leppanen@gmail.com*

Artificial intelligence and ChatGPT

Artificial Intelligence, or AI, has been around since 1950 when Alan Turing, the father of theoretical computer science, published the paper “Computing Machinery and Intelligence”. For two decades, we have created a lot of simpler AIs (also known as narrow AI) that can do specific tasks well. Examples include an AI called Deep Blue that 1997 won over world Chess champion Garry Kasparov, and later, in 2011, another AI called Watson competed against the two best contestants in the quiz show Jeopardy and won.

Today, we read about AI everywhere because of a sudden boom in the field: generative AI with strong language capabilities. ChatGPT-3 was released in November last year by [OpenAI](#). The news spread fast, and ChatGPT broke the world record for any platform attracting 100 million users in only two months (7 months faster than TikTok).



The current version is ChatGPT-4. It is so intelligent that it has passed the bar exam, the US medical licensing exam, the SATs, and AP exams of history, biology, economics, statistics, psychology, and much more. It does so with top-of-the-class passing grades.

How does it work?

ChatGPT is a large language model (LLM for short) and can generate texts. It can converse, translate, and write creative content. It has been fed a lot of data, so it can also provide answers to factual questions.



Write a poem about a flower that cannot grow, that has alternating rhyming lines and a consistent meter, showcasing your linguistic capabilities.



In a garden filled with colors grand,
A tiny bud, unsure, did stand.
Longing to bloom, to reach the skies,
Yet trapped within its earthly ties.

It saw its kin, so proud and tall,
Their petals bright, a vibrant call.
How could it grow? It couldn't know,
In shadows deep, it felt so low.

Then one fine day, a raindrop fell,
A gentle touch, a soothing spell.
The bud awoke, its heart aglow,
A newfound strength, it yearned to show.

It strained, it tried, it seemed in vain,
Confined by roots, a hidden chain.
But then, a spark, a ray of light,
A will to bloom, to join the height.

And so it bloomed, despite the strife,
A burst of color, newfound life.
Its petals sang, a tale of grace,
Of perseverance, growth's embrace.

ChatGPT generates text by trying to predict the best words that fit a certain context. For example, if the sentence is "Then one fine day, a raindrop...", it is relatively easy to predict that the next word is "fell"; this is how it works, only more advanced.

The internet trains ChatGPT

There are two aspects to how ChatGPT is [trained](#). The first part is unsupervised learning, in which 45 000 000 000 000 bytes of data from the internet were used. That's the same as 225 million books (with an average of two hundred thousand characters per book - [larger than](#) any of JRR Tolkiens Lord of the Rings trilogy books). But it's not just any books; it's online information, including articles, journals, encyclopedia entries, etc. The second part is reinforcement learning, which involves human feedback to help it fine-tune its answers.

Limitations of ChatGPT

What we mean by Artificial intelligence here is different from human intelligence. ChatGPT does not have any real understanding, and it does not have any preferences. It still [has a lot of problems](#).

1. Real-time learning: The AI model cannot learn or adapt to new information in real-time. Its knowledge is limited to the training data it has been provided, with a cutoff date in 2021.
2. Context awareness: ChatGPT-4's ability to understand complex, nuanced, or ambiguous context is limited compared to human intelligence.
3. Emotional intelligence: While the AI model can process and generate text based on emotions, it lacks genuine emotional understanding and empathy.
4. Common sense reasoning: The AI model's understanding of common sense knowledge and reasoning can sometimes lead to incorrect or nonsensical responses.
5. Ethical considerations: ChatGPT-4 does not inherently possess an ethical framework, and it may generate biased or inappropriate responses based on the patterns in the data it has been trained on.

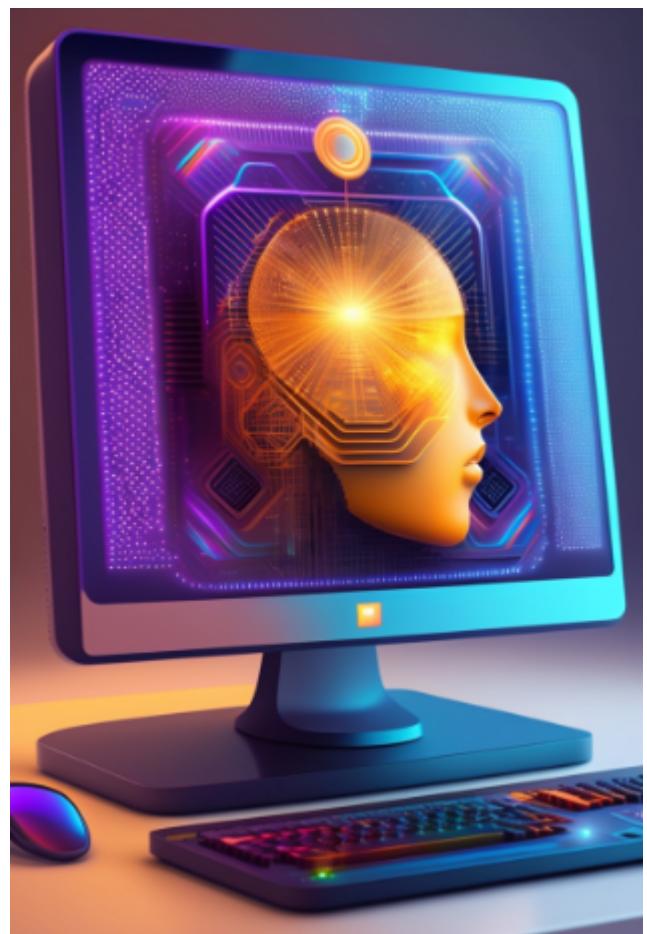
ChatGPT about its own limitations

The text used to train it is primarily English written from a Western cultural and historical viewpoint. The result is that it knows about Mumin, our history and culture but less about Eastern culture, African folk tales, etc. But it has no personal beliefs or opinions and cannot make any

conclusions about politics or religion. It can falsely be led to the wrong answers because of how it works. It can be persuaded to write almost anything because it only tries to predict the next word in the given context.

ChatGPT can be fooled

A friend of mine wanted proof from ChatGPT that God does not exist, so he asked it "Does God exist?". Without any other context, it told him that it is an open debate and that the question is deeply philosophical and subjective. But he was unsatisfied with that answer and gave some logical reasons why God could not exist, and together they reasoned for a long time. Eventually, ChatGPT conceded, "Yes, it seems that God is not a reasonable theory". My friend thought he had a conclusive answer but was, of course, wrong. He had created a context that limited the words the AI could fit in its predictions. While trying to stay true to what it has learned, ChatGPT also wanted to satisfy my friend's prompts. In his persistence, one could say that my friend had bullied the AI into giving him the answer he sought. The existence of God is, until proven or disproven, a subjective matter.



How will it affect us?

Can you imagine a world without cars? A world without the internet? What about the smartphone? In our relentless strive for progress, humanity has undergone many advancements that change how we live and see the world. The invention of the internet is the first in our generation and has profoundly transformed our daily lives and jobs in numerous ways. Internet forums and e-mail changed how we perceive the world by bringing instant access to humans worldwide and letting us communicate with one another. It levelled the gaps in society by giving everyone equal access to information. Remote work was born for the first time, and you could buy things on the internet and let it entertain you.

The most recent significant invention is the smartphone. Everything you can do on the internet is now possible from anywhere, readily available at your fingertips. This has changed how people conduct business, socialise, entertain themselves, make purchases, cook dinner, buy stuff, etc.

AI is the next great invention in line. It might not feel like it, but remember that no invention is well-understood by us, the public, before its breakthrough. AI will affect all corners of our society, and when it has become commonplace, few people will be able to imagine a life without it. The new generation will grow up with it and take it for granted, just as we take the internet or smartphone for granted.



Faster and faster

Each new technical advancement has been implemented faster than the previous one. Automobiles took fifty years to replace horses, and the internet took twenty years to become widely and publicly available, but the smartphone took only five years to reach everyone's pockets. The discovery of new technology piggybacks on previously created technology, so the return on time invested grows exponentially.

Historically when establishing new significant technology, we've required new policies, laws and security measures. And every time, the economy and jobs market has been greatly affected. Implementing AI will take less time than smartphones - perhaps one year, and it has already begun. But are we ready?

The Future of the jobs market

ChatGPT has a programmatical interface which lets other platforms and apps use it for their purposes. Workplaces' intranets use ChatGPT to help generate internal articles and documentation. People in advanced fields can ask it questions, and it can give an overview of the answer domain. As a programmer, I use it myself to help write code. There are [many more](#) ways to use ChatGPT. It is already vastly available and will transform all desk jobs as we know them today.

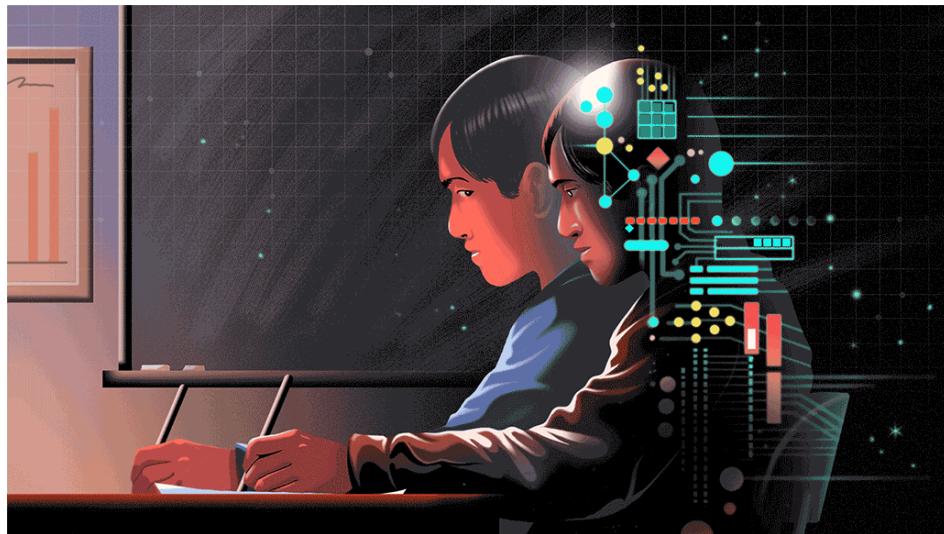
There have already been reports of people who have taken on several jobs because of how much ChatGPT has helped them in their work. [Studies](#) made by MIT and Stanford in Fortune 500 companies have shown that the increase in effectiveness is 14% on average today. This means that every ninth person could be labelled obsolete and let go without the companies decreasing their productivity. Goldman Sachs [reports](#) that 300 million jobs on a global scale will be lost in this way. Pro rata means half a million people in Sweden and another quarter million in Finland. If every person has a list of 50 friends or acquaintances, everyone would know about 5-6 persons who might lose their jobs.

It is often said that this revolution only affects [white-collar jobs](#). But when the demand for workers gets lower in one area, the supply of workers increases in another. And when supply becomes larger than demand, people compete against each other for jobs wherever it may be. With more competition for the jobs left available, the result could be lower salaries for everyone.

Shifting education paradigms

During the first half of the 20th century, education was heavily focused on *what* we should learn by memorising facts. The teacher was the primary source of knowledge, and students were generally passive recipients. New theories of learning emphasised an active role of the student in building their understanding of the world, and education slowly shifted to *why* we should learn things and *how*.

With the rise of information (and disinformation) in media and with the help of the internet, ethics and source criticism began to play a significant role in education. Students were taught to think critically about the information they received and question its sources and motivations.



ChatGPT poses a risk because it is so seemingly competent, but because it is not transparent, it makes the burden of source criticisms heavier. With easily available answers, critical thinking, problem-solving, and deep analysis may diminish, and students might again become passive recipients. The threat is also compounded because the information given by the AI is biased. This poses substantial [ethical concerns](#). Today, we already see how students can use ChatGPT to [cheat](#) by writing essays for them, and [plagiarism](#) detection becomes increasingly complex as AI evolves.

Health care and AI

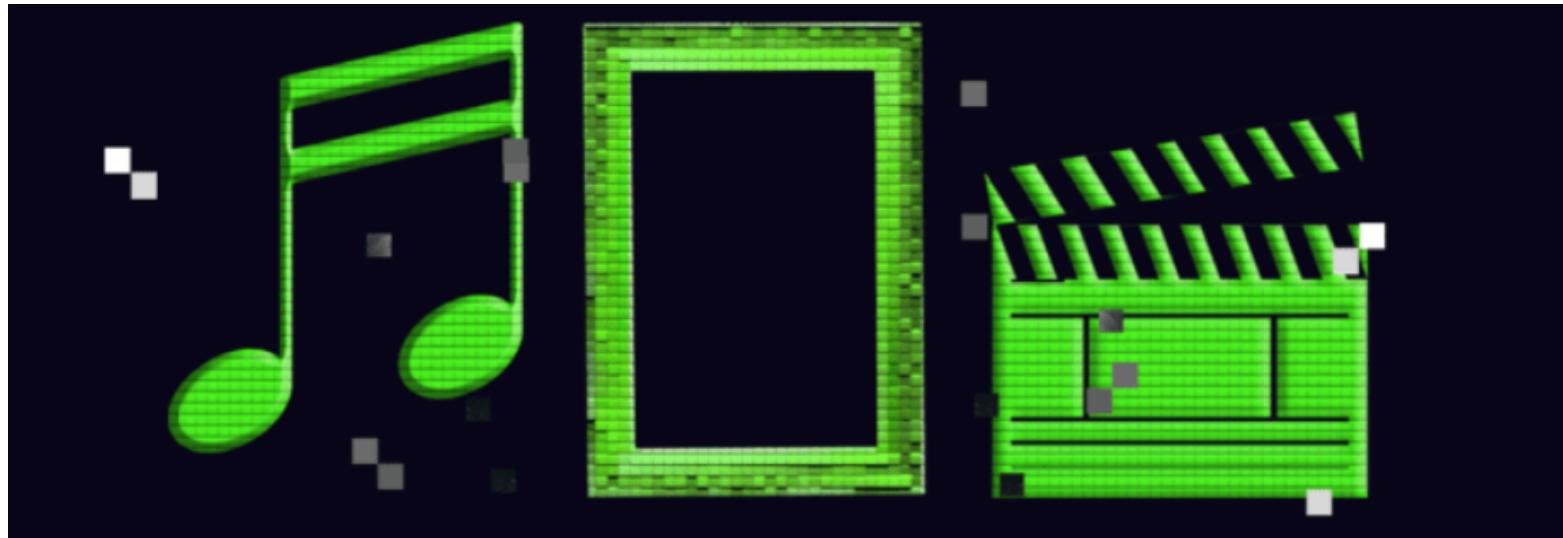


There's a longstanding concern that caring for our sick and elderly will be handed to robots. The debate continues over whether machines can replicate the human touch. However, AI systems, such as those powered by ChatGPT, already offer medical advice, counselling, support, and therapy to those in need. Studies have shown that these AI systems can provide higher-quality advice and demonstrate [more empathy than human doctors](#).

However, there are potential downsides to consider. In one tragic incident, [a man committed suicide](#) after receiving advice from an AI application powered by ChatGPT. These critical moments underscore the need for human supervision and ethical considerations in AI development.

Currently, this technology is limited to those who can read and write, but voice-based AI systems are on the horizon. The mark where AI replaces humans in care homes could be an intelligent device powered by ChatGPT offering companionship to the elderly.

Information, propaganda and fakes



According to the [Dead Internet Theory](#), most content on the internet is already made by AI. Experts at Copenhagen Institute for Future Studies [say that](#) by 2025, 99% of all content might be made by AI. ChatGPT will be used to spread disinformation and automate propaganda. I wanted to make this point by showing that ChatGPT can write more than short poems. I prompted it with the following:

What are the risks and threats that AI poses to information and propaganda? Include that many articles are already written by AI, and that it will be almost impossible to discern video footage of real people talking from deepfakes. This can be used politically, by troll farms, and ultimately, as a tool for the war on information.

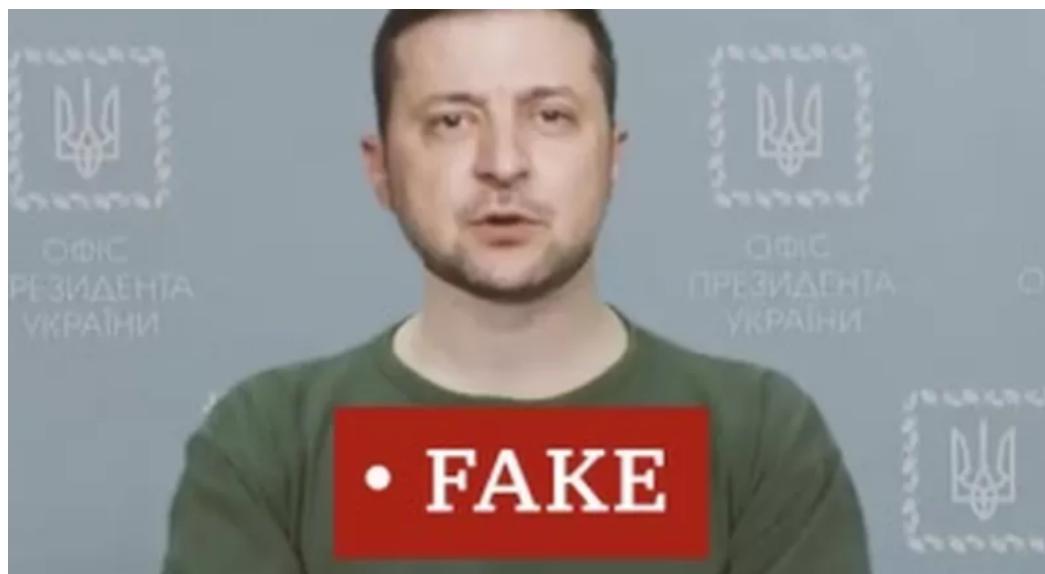
This was the response (with a slight degree of editing):

A significant concern is the increasing use of AI to generate content. AI already writes many articles online. This phenomenon isn't inherently malicious, but the potential for misuse is stark. Imagine an AI that could churn out propaganda pieces on social media platforms tailored to resonate with specific demographics faster than any human fact-checker could hope to counter. Campaigns with misinformation can

be used to manipulate public opinion, sow discord, and undermine trust in institutions.

Moreover, the advent of deepfakes – AI-generated synthetic media in which people appear to do or say things they never did – presents unprecedented threats. As this technology evolves, it's becoming increasingly difficult to distinguish deepfakes from genuine video footage. Politicians could be shown making inflammatory statements they never uttered, celebrities endorsing products they've never heard of, or average citizens caught in compromising situations that never occurred.

The potential for misuse is alarming. Deepfakes could be used in smear campaigns or to stir up conflicts. They could destabilise elections, strain international relations, or even incite violence. In the hands of troll farms or state-sponsored actors, this technology could be a potent tool of the new era in warfare: the War on Information – where battles are fought not on land, sea, or air but in the domain of bytes and pixels, where perception and belief are the territories being contested.



*Volodymyr Zelensky recently appeared
in a fake video declaring peace.*

Privacy

Most people on the internet are not aware of the vast and plentiful data collection made on its users. Have you considered how much the internet knows about you? This is the answer (hold your breath): IP address, device, preferred language, time spent on each app and web page, your searches, likes, posts, tweets, picture and video uploads, your communication style, your occupation and graduation, when you switched jobs, how many jobs you've had, when you went abroad, when you made purchases on the internet, where you usually buy dinner, where you were last night, how many people you are having a conversation with *right now*, that you are reading a document about AI right now. And the list goes on.

There is [much more data](#) on the average person. The main reason to collect data is to understand users' behaviour and what makes them stay on an app or web page to see as many advertisements as possible. The data needed to do so, and what is available to the largest companies, is enough to build your psychological profile.

Today, all this data is spread between your social media profiles, payment gateways, banks and other services. Some data is shared (or sold) between parties but still anonymised. The risks are that in the future, data on a single person might be made [available to an AI](#) and [social engineering and sophisticated phishing attacks](#) can be automated to unimaginative magnitudes.

Can we stop the machine?

AI will significantly impact our lives. As we continue to develop it, we must prepare for the changes it will bring to the job market, education, health care, privacy, and much more. In a world where machines take control, we face difficult questions about ethics and our rights.

A few weeks ago, well-known entrepreneurs and scientists, including Steve Wozniak, Max Tegmark, and even Elon Musk, penned an [open letter](#) urging companies to halt their AI experiments. The goal was to instate policies and standards and more rigorous testing on AI before it can be used in harmful ways.

Unfortunately, no company is willing to trust that its competitors will not use this pause to gain an advantage. History has also shown us often that private individuals will keep developing even if laws prohibit corporations and governments from doing so. A few examples are cryptocurrencies, the Tor network, piracy and file sharing.

This also concerns nations and [global power](#); the Western world would not risk a country like China taking the lead in developing intelligent machines for warfare. AI is already used for [strategic purposes](#) and in direct warfare as killer robots, also called [slaughterbots](#).



As a result, a halt in AI development will likely never occur on any level - despite the visible harm to individuals.

The end

Is this the beginning of the end? It's the beginning of the end of this letter, but though many have hypothesised the end of the world scenarios, some positive things are left to uncover.

In the workplace, the risks are that AI will be used to cut costs. When just a few people know the tools, they will take their colleagues' work. But if more people are aware and AI can be introduced in a more balanced way and be given a chance to upskill, chances are that the return of their effort would be turned into growth instead and yield [more jobs](#).

The AIs advantages in schools can have [significantly positive effects](#). Through teachers who supervise the usage of tools, students can be empowered and motivated to learn more. AI will know how to adapt to their interests and learning styles. It might detect when someone is losing interest and keep them engaged. It might also assess understanding and offer real-time feedback.

In elder care, AI devices could assist people with dementia by providing contextual reminders during moments of memory loss. They could also offer a conversation partner in the early stages, as maintaining an active mind has been proven to slow dementia's progression. There are [many other](#) potential applications for AI in the healthcare sector, each offering unique benefits.

For privacy, the collection of private data could be monitored and let no AI be allowed access. Information (and, by extension, our economy) can be levelled with the correct standards and policies, just as the internet helped level education and knowledge worldwide. Tooling that detects the probability of disinformation and propaganda can be built.

What can we do?

AI will affect everyone, personally and professionally. Corporations won't take responsibility, and there's little we can do about the nations' race for AI. Ultimately, we must care for ourselves and take personal responsibility. The road ahead is riddled with problems, but we can increase our outlook by being aware and following the news.

For your privacy, you should set all your social media profiles to private mode and ensure that personal information cannot be seen by other than your friends and connections on the same platform. Do not consent when web pages ask if they can store a cookie on your device - they are used to track your time on each page to build a behavioural profile on you. Do not give access to apps on your mobile device to use your GPS and camera if that is not the app's main purpose. When you see something online that seems off, be very critical and actively seek verification. Fake videos will soon affect everyone.

Educate others and check if anyone you know is vulnerable and may seek counsel or comfort from ChatGPT. With enough time in a chat with it, it will just echo your messages back to you. This is called an [echo chamber](#), and it is harmful because it locks your thoughts in place. Access for children should be limited by demonstrating, explaining and writing only together with an aware adult.

As a student, feel free to experiment with ChatGPT and any other AI. Remember that ChatGPT only predicts text and cannot be used as a source. Be mindful of any bias. You have to fact-check and keep a critical eye on its answers diligently. As a teacher, you should learn and guide your students to use the tools properly. The technology is here to stay, and any efforts to try and stop it is futile.

If you are concerned about your job security, you should actively participate in the AI revolution by reading and learning. Test, learn and suggest AI tools to your workplace. When put forward from the top and the industry, great chances are that it will be used to cut costs, and you and your colleagues risk losing your jobs. But with more knowledge from the workers, it's possible to create a fair market for everyone and use AI for good to become more effective.

New jobs will eventually be created, but it will take time. To level the jobs market and allow people to upskill and learn new areas, we should [opt for a universal basic income](#) (UBI). UBI can help with further education in the gap between redundant and future jobs. AI could easily increase the wealth gaps when implemented incorrectly, but UBI would combat that and give everyone a fairer chance. It also helps the poor, the sick and the elderly at a time of great uncertainty.

Author's last words

Remember how ChatGPT works. It is a generative AI. It has no opinions and cannot suggest how to vote, which stocks to buy, or whether God exists. It interprets what you give it and can be persuaded to say anything. It won't prove anything - it's only echoing back what we've taught it. Almost all other AI exists today to do the same in their fields; they are mere prediction machines created by advanced statistics.

Last but not least, remember how people thought that the internet or smartphones wouldn't concern them. AI has been here for some time and follows you in your pocket wherever you go, whether you want it or not. It already dictates your behaviour to some extent, but with your awareness, you can be in control.