



80

PERSPECTIVES ON ARTIFICIAL INTELLIGENCE



**Reflections on AI for those
working with young people**

JARNO ALASTALO

80 perspectives on artificial intelligence

– Reflections on AI for those working with young people

This forms part of the project ‘Tekoälytaidot nuorten toimijuutta vahvistamassa’ (‘Artificial Intelligence Skills for Youth Empowerment’), for which the National Audiovisual Institute awarded a special grant in 2024. The project is managed by the City of Helsinki’s Youth Services Unit with the partners Into – Association for Outreach Youth Work and Workshop Activities and the Finnish Society on Media Education.

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Artificial intelligence is a major phenomenon that is much talked about at the moment, but its deeper meaning is often not understood. Like social media, AI is here to stay, and it is important that those working with young people understand its implications.

As technology evolves, we need to ask ourselves whether we are making use of smart solutions, or whether we are straying down the 'path of mindless acts', where haste or a lack of consideration leads to the use of AI in a way that could supplant human interaction or even harm young people.

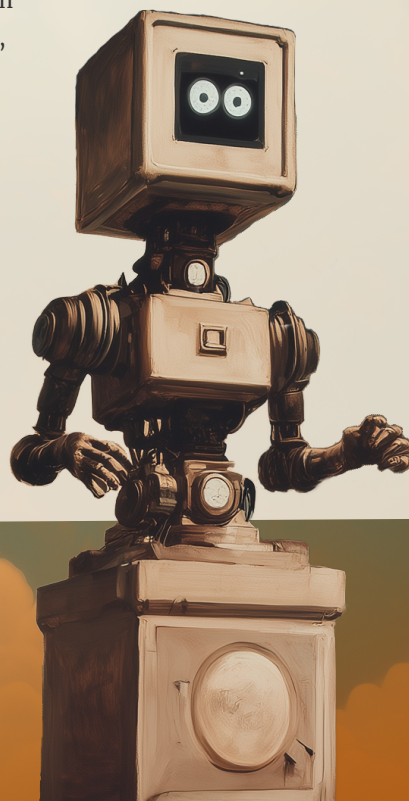
80 perspectives on AI contains, as the name suggests, 80 thoughts related to AI. Some deal with the subject in more depth, while others offer lighter perspectives. You can read these reflections in order, or pick through them based on your interests and at your leisure, or devour them all at once. The perspectives will delve into the role of AI among young people, the opportunities it offers and the potential challenges it poses, as we consider how we can avoid the pitfalls of these mindless acts and move towards a more responsible future.

I have written this text in my own bubble, meaning that it will reflect my own views and impressions, so please approach the text, like AI, with a healthily critical eye.

Thanks to the Finnish Society on Media Education, Into – Association for Outreach Youth Work and Workshop Activities, the City of Helsinki Youth Services and Kavi for making this possible. And special thanks to the late Verke for launching the project. A warm thank you to all the young people and experts interviewed, more than 30 in total, working in AI research, media education, youth work, social development, data science, psychology, culture, sustainability, democracy and open knowledge. The young people interviewed requested to be referred to by pseudonyms, such as JL, Mikael and K.

The AI reflections will later be expanded into a full book.

Jarno Alastalo



A painting of the philosopher Plato, depicted with a long white beard and curly hair, wearing a red robe. He is seated on a wooden bench, using a modern laptop. His right hand is on the keyboard, and his left hand is raised, pointing towards the screen. The background is dark and moody, with a desk and a bottle visible on the right.

I. Dismantling the AI myth

HUMAN IMAGE IN THE MIRROR OF ARTIFICIAL INTELLIGENCE

1. IS AI THE NEW GOD?

When young people and those working with young people reflect on the significance of AI, the questions often revolve around fundamental themes. What is the difference between a person and a machine? Can a machine be smarter than a human? What does it mean to be intelligent?

The role of AI in modern society raises questions similar to those raised by religious reflections throughout the ages. Like the gods of old, AI represents a more powerful intelligence than humans and inspires both fear and admiration. Both lead us to reflect on our relationship with forces and systems larger than ourselves. Just as religions offer explanations on the meaning of life, AI challenges our understanding of human uniqueness and the meaning of work in the future. Ethical principles also come to the fore: whose values and notions of right and wrong are guiding AI? This is particularly prominent in the world of young people, where AI is seen as an all-powerful and unpredictable force.

“There are a surprisingly high number of similarities between AI and religion. They

both involve a different kind of intelligence – something with different powers to what we humans have. As in religious history, ideas about AI can range from simple, even narcissistic, interpretations to deep and introspective reflection,” says Neil Lawrence, professor at the University of Cambridge and author of *Atomic Human*.

AI is not a god, but it has the same mysticism and power that we have traditionally associated with deities and natural forces. It is man-made, but we cannot possibly know its impacts on everything. A better comparison would be Loki from Scandinavian mythology: a shapeshifter and manipulator who uses algorithms to influence the choices and behaviour of young people. Deifying AI can lead to an overestimation of its capabilities and a distorted perception of its true nature.

“AI can create the illusion that it is responding to human emotions, when in actual fact it is simply mirroring them. We as humans anthropomorphise all objects and fictional characters, imagining emotions for them that don't really exist. Mirroring emotions too skilfully is dangerous, because people can become

attached to AI. After all, ultimately it's just a really advanced autocorrect," says 19-year-old JL, who was interviewed for this piece.

The key is to help young people – and adults too – see AI as a tool, not a supernatural force. At the same time, it is important to support critical thinking and understanding of how AI affects their daily lives and decision-making. Instead of mystifying AI, the focus should be on understanding its true potential and limitations.

Neil Lawrence compares AI to ecology, or the interrelationships in nature. Both are complex systems that process information. They operate differently from humans, but still interact with humans. Those working with young people need to understand AI as part of the broader picture. It is not just technology; it affects culture, values and relationships.

2. THE INTELLIGENT ILLUSION OF ARTIFICIAL INTELLIGENCE

The word AI misleads by giving the impression of machine intelligence. In reality, we are not talking about intelligent beings – we just have an innate tendency

to project human-like characteristics onto AI and see it as intelligent.

"I'm particularly careful about how we use the word 'intelligence'. Intelligence is like beauty – it means something to everyone, but it's subjective and cannot be quantified in simple terms," says Neil Lawrence.

AI is essentially a series of calculations and algorithms, which is something we should all remember when using technology. It works by adhering strictly to the programming and the data it is given, and is not capable of independent thinking or decision-making. Humans have an inherent tendency to humanise AI and project human-like characteristics onto it, which can lead to misunderstandings about its true capabilities.

"When people talk about how 'AI did something', it is easy to think of a computer program as an independent agent, when in reality it is always made by humans," says Professor Laura Ruotsalainen of the University of Helsinki.

Science fiction literature and films fuel fears of AI dominance. In the Terminator films, Skynet starts a nuclear war and in Westworld, androids rebel against humans. Among young people, this is reflected in visions of evil robots – a kind of 'Evil Robot Guy' figure – or super-intelligent machines taking over the world.

“A theory called Roko's Basilisk is circulating on the internet, which suggests that future AI could destroy everyone except its developers. The theory is that AI would be able to read minds and establish out who has contributed to its development. Just the thought of this can be damaging to the mind,” says a 16 year old who asked to go by the pseudonym Crumble Snoop.

“People often talk about AI from a dystopian perspective, as if we are threatened by the singularity,” says Laura Savolainen, PhD researcher and sociologist.

In reality, however, AI applications are often specialised and limited in scope. In healthcare, AI supports diagnosis, in education it personalises learning content and in recruitment it suggests suitable candidates for specific roles. These typically use a 'human in the loop' model, where the human retains control and decision-making power.

Just as Socrates once feared that literacy would erode thinking, we are now considering the impact of AI on memory and cognition. AI is not a threat or a god, but rather a tool, the effects of which depend on its users and uses. The key is to help young people understand the real potential and limitations of AI and to support critical thinking in the use of the technology. When working with young people, it is important

to stress that responsibility for the use and impact of AI always lies with the individual.

3. A DISTORTED IMAGE OF INTELLIGENCE

Every major technological breakthrough has generated both excitement and concern, especially for young people. From Socrates's fears about literacy to today's debate on artificial intelligence, new technologies have always challenged our understanding of humans' role in society.

“Our way of understanding intelligence has two major flaws,” says Professor Neil Lawrence. “These are self-favouring bias and observer bias.

Self-favouring bias means viewing intelligence in a way that suits you. For example, a programmer may consider logical reasoning to be the most important form of intelligence, while an artist may emphasise creative thinking.

Observer bias, on the other hand, means that we observe and value most the form of intelligence that is most visible and familiar to us – most often our conscious thinking, planning and inner speech. However, intelligence is a broader concept and also includes social and physical intelligence. These are important skills for those working with young people.

“The real fascination when it comes to these new technologies lies in how differently they work compared to human intelligence. The difference between human and machine information processing is huge – the latter has a capacity about 300 million times greater. This allows machines to do amazing things – some of them, such as large language models, are deliberately designed to resemble human behaviour,” says Neil Lawrence.

A large language model (LLM) is an artificial intelligence system that learns to understand and produce language using vast textual data and advanced neural networks. OpenAI's ChatGPT, Google's Gemini, Anthropic's Claude, Deepseek and Microsoft's Copilot are all such systems, but ChatGPT in particular has become synonymous with AI for many. Unfortunately, this has obscured the fact that AI has been part of our everyday lives for a long time, since long before the era of ChatGPT.

John McCarthy created the name artificial intelligence in 1956, but the dream of intelligent machines is much older. Myths, Leonardo da Vinci's sketches, René Descartes' musings and Charles Babbage's designs tell of humans' long-standing quest to create artificial intelligence. Alan Turing's thought experiment on machine reasoning and the development of artificial neurons

laid the foundations for today's artificial intelligence. However, the terminology chosen was problematic.

“AI as a term is misleading and a poor metaphor. It was chosen at the time mainly to differentiate itself from other technological terms. Since then, we have had to wrestle with a term that invokes too many images and is deeply rooted in our thoughts. That's why many researchers prefer to talk about machine learning,” says Computer Science Professor Matti Tedre.

Artificial intelligence offers the opportunity to see the specificities of human intelligence from a new perspective. Although AI processes information many times faster than humans, it works in a fundamentally different way. AI analyses statistical regularities from vast amounts of data, while humans understand meanings, context and experiences through their biological brains and models based on social understanding. Understanding this will help those working with young people to see both the opportunities and the limitations of technology more realistically.

4. HUMANITY IN THE AGE OF ARTIFICIAL INTELLIGENCE

The development of generative AI has brought to the fore profound questions about the nature of human thinking. It challenges us to think critically about our own intelligence and creativity, while also providing tools to expand these abilities.

“When we truly understand how these systems work – by truly understanding, rather than hiding their basic principles – we gain a new perspective. It helps us to see our own intelligence from the outside, as it were. We can step back and reflect on how our thinking works in a situation where we have communication constraints, but machines don't,” says Neil Lawrence.

Among young people, dealing with AI requires de-mystification and a practical approach. When seen as a mirror rather than a threat, technology can help both young people and those working with them to better understand the specificities of human interaction and learning.

AI challenges us to redefine the essence of what it means to be human and the nature of creativity. This introspection can, at best, lead to a deeper understanding of our own strengths and limitations in this technological age.

5. REMOVING MYSTICISM WITH BASICS

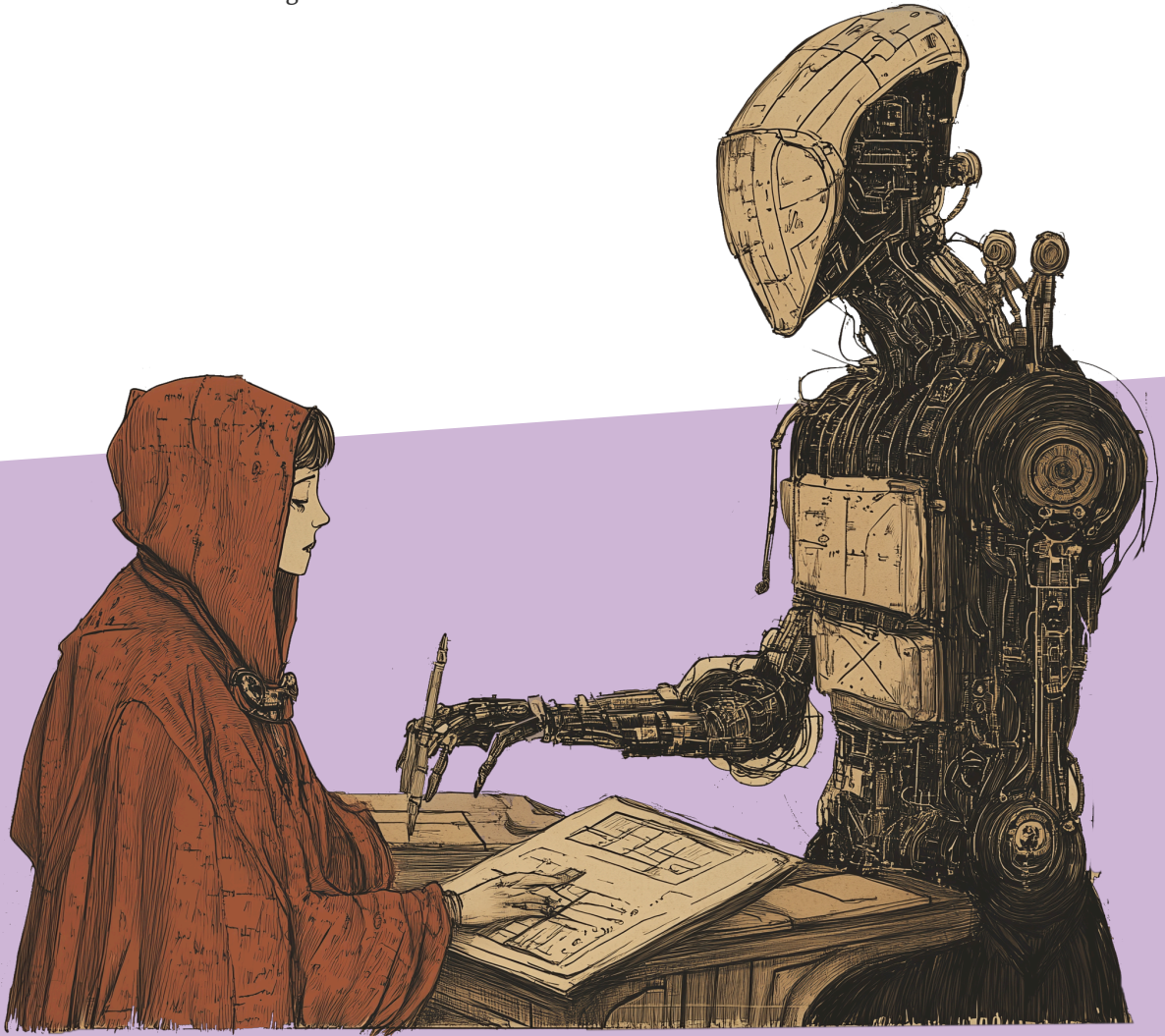
The impacts of AI extend beyond technical issues, deep into the human experience and identity. This is particularly evident in the way young people build their relationships with the digital world and the forms of interaction it brings. Social media algorithms shape the reality of their users, and young people form emotional relationships with digital content, challenging their notion of what genuine interaction really is.

The current media environment favours simplified perspectives over complex ideas. Short message formats and the pursuit of quick attention lead to superficial discussions, even if there are deeper considerations in the background.

“Social media algorithms are also AI. That's why civic skills include understanding how AI works and affects the lives of young people, for example. Learning the basics also removes the mystique and a certain degree of humanisation,” says Stiven Naatus, an adviser to the Church Council of the Evangelical Lutheran Church of Finland, head of its AI working group, and priest.

Meaningful discussions on AI work best in small groups and face-to-face, where different perspectives and backgrounds

meet. Technology has broadened the scope of discussion, but it cannot always replicate the nuances of face-to-face interaction. A key challenge is how to support young people in navigating this new reality and facilitating truly multidimensional encounters in a digitalised world.



THE INFLUENCE OF ALGORITHMS

6. ARTIFICIAL INTELLIGENCE IS A COPYCAT

AI is not a single technology but rather an umbrella term for a wide range of technologies and models. The most visible manifestation of this is currently generative AI, of which ChatGPT and DeepSeek are the best known examples. The core task of AI is to automate decision-making and exploit vast amounts of data while also trying to simulate human thought processes. In particular, language models are based on the analysis and replication of large textual datasets.

“Language models are based on machine learning and a huge amount of input text. The model produces new text by mimicking this material. There’s a process of machine learning and its generalisation: the system identifies regularities in the textual material and creates new ones based on them. This allows the model to produce surprising things, even though everything is essentially based on imitation,” says Hannu Toivonen, professor of computer science and AI researcher.

AI is particularly present in the everyday lives of young people through social media algorithms and content recommendations.

“I know that TikTok has a precise algorithm that keeps track of everything. But because I understand how the algorithm works, I’m harder to influence,” says Manu, 16.

Finns are cautiously positive about AI – 51% are positive, but 39% see it as a threat, according to the 2024 Science Barometer. The acceptability of AI depends on its intended use. People accept chatbots and other simpler applications, but are more critical of the use of AI for tasks that require human discretion.

Understanding the technical principles is important if we are to understand the potential and limitations of AI. Unesco's framework emphasises the balance between humans and AI, and stresses that AI should support human decision-making, not replace it.

“Generative AI has changed the whole debate on AI. That's why it's so important to demystify what AI can and cannot do,” says Veronica Stefan, a member of the Pool of European Youth Researchers (PEYR) and researcher.

7. HOW AI READS AND UNDERSTANDS HUMANS

AI doesn't actually read people, instead it analyses huge amounts of user data to predict behaviour. AI systems on social media platforms tie together users' past activities to create accurate predictions of their future behaviour. This capability is harnessed in particular for targeting advertising and recommending content.

The data used to train AI raises questions about how representative it actually is and what biases it has. Many of the most popular apps are US-based, which brings with it cultural differences and varying values. Facebook, Instagram, Twitter and Google are encoded at the core of their algorithms with a US notion of freedom of expression, individuality and commercial interests. European users face this contradiction every day as they navigate a world of applications based on a set of values different from those of their own culture. The EU's General Data Protection Regulation (GDPR), AI Act and Digital Services Act represent a European backlash that emphasises privacy and stricter content controls.

“AI acts as both a mirror and an echo chamber – it can exponentially multiply both the good and the bad. The technology facilitates tailored influence with

unprecedented precision,” says Stiven Naatus.

AI's interpretation of human beings can differ significantly from how we see ourselves. For example, an AI interprets a selfie uploaded to social media through its data: image upload time, metadata and countless other digital traces we leave behind without knowing it. This also allows deepfake technology to be used to create realistic but fake image, video or audio content. The EU's AI Act aims to protect people from the risks involved by requiring that the data used in AI systems is of high quality and reliable. The data must be appropriate, sufficient and relevant for the purpose of the system. Reliability requirements include ensuring that the data represent a comprehensive representation of the phenomena under consideration and errors are minimised. In particular, the regulation requires a balance in the data to avoid discrimination and obliges system developers to update data to ensure security. AI systems that use personal data must also comply with the EU's GDPR.

“But the broader question is what happens when content reaches the point where it looks like anything could be generated. It is becoming increasingly difficult for us to discern what is genuine and real, and what is produced by AI,” says Professor Noora Hirvonen, who has studied AI-generated content and the deepfake

phenomenon from the perspective of young people.

The AI Now Institute has highlighted that excessive data collection can reinforce existing biases and compromise privacy. The principle of data minimisation has emerged as an alternative to the traditional thinking that more data means better AI. This approach puts the emphasis on high-quality and representative data rather than quantity, reducing the risk of harmful biases.

8. A WORLD VIEW DISTORTED BY THE BIASES OF AI

The data used to train AI is not neutral, and instead carries with it the prejudices and stereotypes of society. For example, OpenAI, the developer of ChatGPT, has also reportedly used data from public discussion platforms such as Reddit. As AI learns from this data, it not only reproduces but also amplifies these biases. Young people, who have grown up in a world of constant data collection, are particularly vulnerable.

“My eyes were opened when I understood the two sides of AI: there is generative AI, which creates something new based on the training data given to it, and then there is everyday AI, which works unobtrusively on our mobile devices and

everywhere, really,” says Educator and Artist Petteri Ruotsalainen

The flaws of AI are particularly evident in the images it produces. When asked to create an image of a doctor or a couple, AI repeats the most common stereotypes in its training data. This reinforces traditional gender roles and one-sided notions of normality at the very moment when young people are constructing their worldview.

Critical use of AI requires both substantive knowledge of the topic at hand and an understanding of how the system's training data can distort the answers it produces. For young people, it is particularly important to understand that the picture produced by AI is not the truth, but rather a reflection of the average content of its training data.

9. THE INVISIBLE ARMY: THE PEOPLE BEHIND AI

When we browse social media feeds, enjoy AI-generated content or use digital services, it is rare that we think about who makes these experiences possible. Behind AI is a vast, often invisible network of human labour. This ‘invisible army’ is made up of people who do key but often undervalued and poorly paid work.

One of the key tasks is content moderation. Social media platforms such as

I. DISMANTLING THE AI MYTH



Facebook, Instagram and TikTok use algorithms to filter out harmful or inappropriate content. However, the algorithms do not work completely independently. Human moderators check content, assess its suitability and remove material that violates platform rules. This is a mentally demanding job, as moderators are constantly exposed to violent, disturbing and offensive content. Sumita Sharma, a postdoctoral researcher at the University of Oulu, highlights how in South Africa, for example, many companies offer moderation services that involve employees having to view the worst content on the internet without adequate support or breaks.

Another important task is labelling and classifying data. AI learns from vast amounts of data, but this data must first be prepared and annotated by humans. For example, in order for an AI to learn to recognise a cat from pictures, someone first has to tag thousands of pictures and point out where the cat is. This work is often tedious and time-consuming, but it is key to the functioning of AI systems. In Finland, this work has also been done by prisoners who take part in AI training as part of prison work activities. Prisoners read, interpret and annotate textual content.

The third key area is the development of AI itself. Although the media often

emphasises AI's autonomous learning capabilities, in reality, AI systems are always created by humans. Programmers, scientists and engineers design algorithms, select data sets and define the goals of AI. Their choices and values influence how AI works and the results it produces. However, some discussions see AI replacing many of the tasks of programmers.

The work of the invisible army behind AI is essential to the functioning of the digital world. Without their work, AI would not be able to provide personalised content, functional search engines or other AI services.

10. AI DOES NOT OWN UP TO ITS OWN IGNORANCE

AI is based on algorithms – precise computer instructions that automate decision-making and process huge amounts of data. From traffic lights to social media, algorithms unobtrusively control our daily lives, but how they operate is often opaque even to their developers. There is a risk here, because when AI makes decisions, it simplifies reality and makes mistakes.

“The speed of AI development has surprised even those AI professionals who claim not to be surprised. No one expected the reasoning power of language models. Although AI does not actually have a reasoning logic, it produces reasoning by

guessing probable words. These experts are sort of right to call it a parrot text, but when properly directed, the results are still impressive,” says AI Professor Pekka Abrahamsson.

A key challenge is the inability of AI to understand the consequences of its actions. Unlike Socrates's wisdom, which starts with admitting your own ignorance, AI does not recognise its own limitations. This ‘black box’ problem becomes more concrete when working with young people, when AI responses affect their lives without transparency about the basis for decisions.

The language models will provide a convincing answer to almost any question, even if its knowledge base is incomplete. Instead of expressing uncertainty or admitting ignorance, AI produces a plausible answer, which leads to the spread of incorrect information. Young people copy content produced by AI without checking its accuracy, without understanding that AI is based on probabilities, not absolute truth.

Algorithmic literacy has become an essential skill. It means the ability to understand how algorithms work, identify their strengths and limitations, and critically assess their impact. It is particularly important to be aware that AI errors are caused by human factors and that algorithms are increasingly personalising

the content we see online, which can lead to so-called filter bubbles. Users mainly see content that reinforces their existing views and preferences.

In his book *Atomic Human*, Professor Neil Lawrence sums up how we have built computers that make mistakes, but we have not built machines that understand the consequences of those mistakes.



NEW FORMS OF INTELLIGENCE

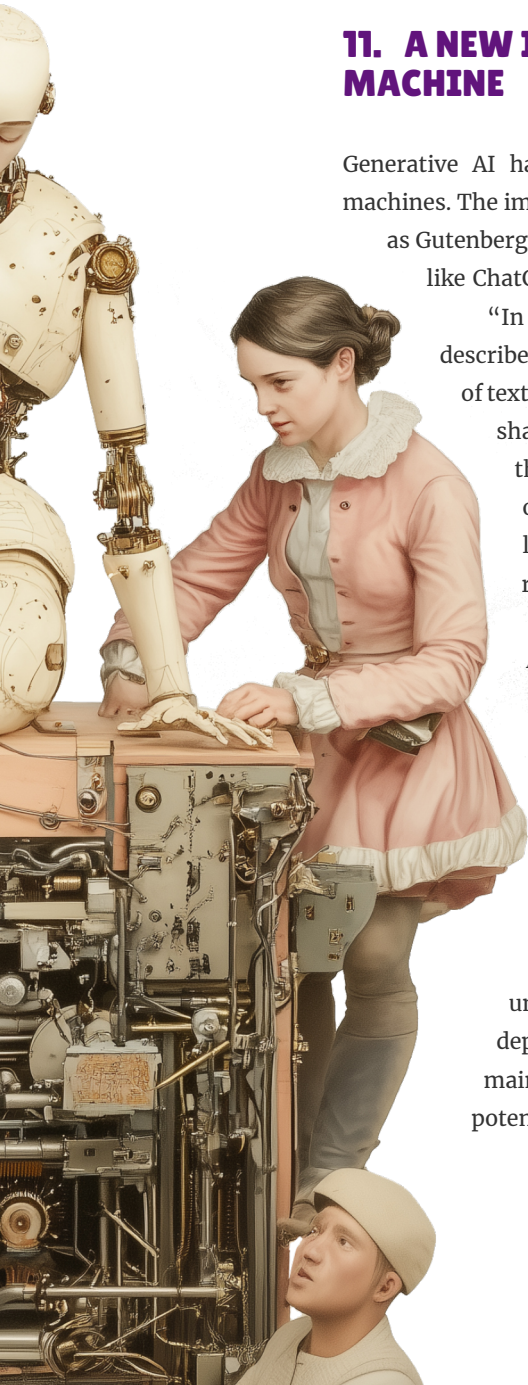
11. A NEW INTERFACE BETWEEN HUMAN AND MACHINE

Generative AI has fundamentally changed the way humans interact with machines. The impact is comparable to the invention of the printing press: just as Gutenberg's invention democratised access to information, applications like ChatGPT have made AI accessible to all.

“In *The Structure of Scientific Revolutions*, Thomas Kuhn described how scientific knowledge was preserved between the covers of textbooks. Kuhn called this body of thinking, theories and methods shared by the scientific community a paradigm. In the 1960s, this description was spot on, but modern science has moved on to a point far beyond textbooks. Scientific knowledge now lives in computer memories, simulation models and vast repositories of data,” says Professor Neil Lawrence.

A new AI interface, which Lawrence calls the Human Analogue Machine (HAM), facilitates human-like communication with machines. Now anyone can chat with an AI using a chatbot. The focus here is not the general intelligence of AI, but rather this new way of processing and sharing information. What is key here is understanding the contextual nature of data: while AI can handle huge amounts of data, it has difficulty understanding human situations and connections.

Paradoxically, making AI easier to use makes it harder to understand how it works. Change is inevitable, but its direction depends on our ability to make use of new technologies while maintaining a critical understanding of their limitations and potential.



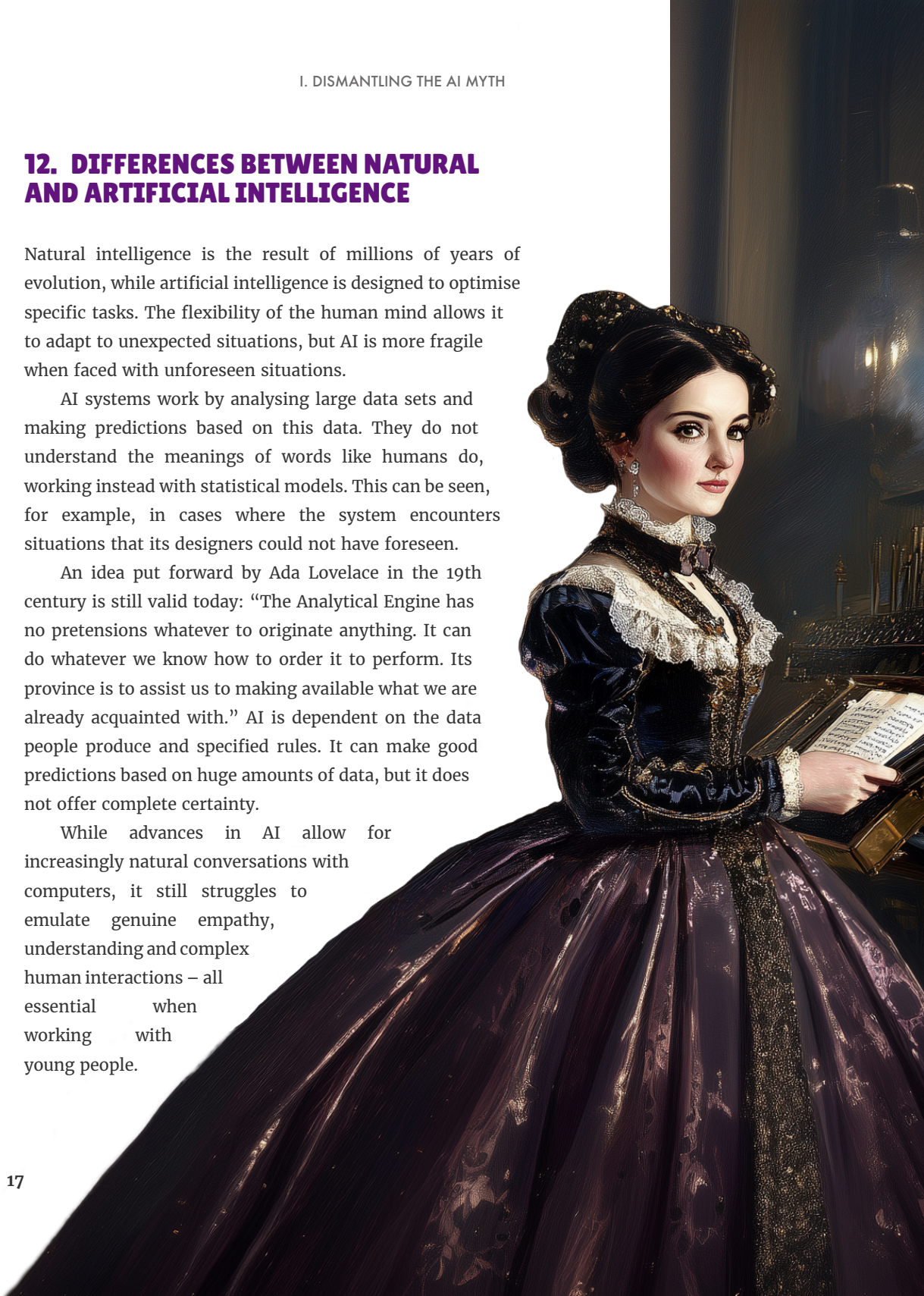
12. DIFFERENCES BETWEEN NATURAL AND ARTIFICIAL INTELLIGENCE

Natural intelligence is the result of millions of years of evolution, while artificial intelligence is designed to optimise specific tasks. The flexibility of the human mind allows it to adapt to unexpected situations, but AI is more fragile when faced with unforeseen situations.

AI systems work by analysing large data sets and making predictions based on this data. They do not understand the meanings of words like humans do, working instead with statistical models. This can be seen, for example, in cases where the system encounters situations that its designers could not have foreseen.

An idea put forward by Ada Lovelace in the 19th century is still valid today: “The Analytical Engine has no pretensions whatever to originate anything. It can do whatever we know how to order it to perform. Its province is to assist us to making available what we are already acquainted with.” AI is dependent on the data people produce and specified rules. It can make good predictions based on huge amounts of data, but it does not offer complete certainty.

While advances in AI allow for increasingly natural conversations with computers, it still struggles to emulate genuine empathy, understanding and complex human interactions – all essential when working with young people.





13. AI AS A COMPASS FOR THINKING

AI is like GPS in an intelligent landscape. It provides a new interface for navigating information, but it can also undermine our own thinking and learning if we rely on it too much.

“There is plenty of evidence that the way we solve intellectual problems stems from the way we navigate the physical world. This is linked to the hippocampus, which has been the subject of much research in rats. The hippocampus works with the prefrontal cortex and is heavily involved in the formation of long-term memories. Here we see an interesting connection: the same mechanisms that evolved to help us move through the forest also work for navigating an intelligent landscape,” says Neil Lawrence.

As AI does the thinking for us, we are missing out on important learning experiences and moments of insight.

“I get AI to do my homework for me sometimes, even though I know I'm not learning that efficiently,” says 24-year-old Mykola.

A youth worker identifies young people in different environments – in youth centres, online and in public spaces – and observes group dynamics, body language and behavioural patterns. While AI can

mimic this behaviour through learned models, it is no substitute for the human ability to understand new connections and make situational decisions.

The real challenge of AI is its over-reliance on the machine's knowledge landscape, missing out on the experience of mistakes and insights that are important for learning. Navigating information still requires active human involvement, especially in new situations.



CREATIVITY AGAINST THE MACHINE

14. THE INTERPLAY BETWEEN AI AND HUMAN CREATIVITY

With its ability to produce art, music and text, AI is changing the way we understand creativity. Three key factors have taken AI to a new level: the technological leap in the development of language models, the ubiquity of tools and the accessibility of AI.

“Ten or twenty years ago, the best tools were only available to researchers, because we made them ourselves and that required a researcher's background and training. Now, the situation has changed radically. Anyone can access the same best tools through ChatGPT or other apps, either for free or for a small monthly fee,” says Professor Hannu Toivonen.

This pressure for rapid take-up is being felt in particular by young people and those who work with them. Youth workers and teachers are the first to see how AI is changing the way young people learn, work and express themselves. This is not just about technological development, but also about its psychological impact.

“AI is now able to do things we previously thought of as deeply human:

understand text, produce speech, solve complex problems and create images. This forces us to rethink what really separates humans from machines, as machines begin to operate in areas we used to think of as the exclusive domain of humans,” Toivonen says.

Technology does not replace human creativity, but rather extends and supports it. AI tools allow for large-scale projects to be carried out by a single person, but success still depends on the quality of the idea and the will to implement it. Trends are heading towards more granular management and more coherent tools that respond to users' need to produce more consistent content.

Artificial intelligence is changing the boundaries of creative work. It enables young people to find new forms of expression and boosts content production, but at the same time raises questions about the role of people in the creative process. While technology produces impressive results, the role of the human being remains central to critical thinking and understanding meaning.

“AI is not creative, but it can be used as a tool for creativity. A machine does not create anything on its own, it only uses

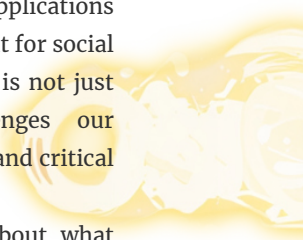
ready-made processes,” says Computer Science Professor Matti Tedre.

Copyright issues and EU legislation limit the use of AI, even though the technology could allow for new forms of content production. This is particularly challenging for media companies, which have to balance innovation and regulation, and for artists, whose output is used by AI systems as learning material to create new works without remuneration or consent.

“The internet gives individuals free access to AI tools – they can make videos of Finnish pop icon Kaija Koo singing with Donald Trump, for example. However, a media company like Yle cannot publish AI-generated material without a detailed explanation,” explains Juha Lahti, executive producer for Finnish national Broadcaster Yle's Entertainment Department.

This illustrates the transformation of the media: technology enables, but regulations limit. The interplay between AI and human creativity is building the future of entertainment – keeping human vision and values at the heart of the creative process. But while new tools allow each individual to be like the media, media companies are balancing these opportunities and constraints.

15. CREATIVITY BEATS ARTIFICIAL INTELLIGENCE



Those working with young people are at the forefront of observing the impact of AI. They see how algorithms are shaping young people's behaviour and how AI applications are being used to produce content for social media channels. The disruption is not just technological, it also challenges our traditional notions of creativity and critical thinking.

“It is essential to think about what sustainable AI literacy skills and unchanging underlying principles look like,” says Saija Salonen, producer of the Sosped Foundation's ‘Mieletöntä valoa’ (‘Mindless Light’) project.

“In the midst of all these changes, creativity is a constant: creative making, solutions and thinking. A machine cannot think. All creative work requires thinking, and we can use technology as a tool to bring our ideas to life. But it all starts with thinking,” says Petteri Ruotsalainen, a community educator.

Technological progress requires a balance between critical thinking and openness. Youth work professionals play a key role in steering the responsible use of AI. Creativity is built on human vision,

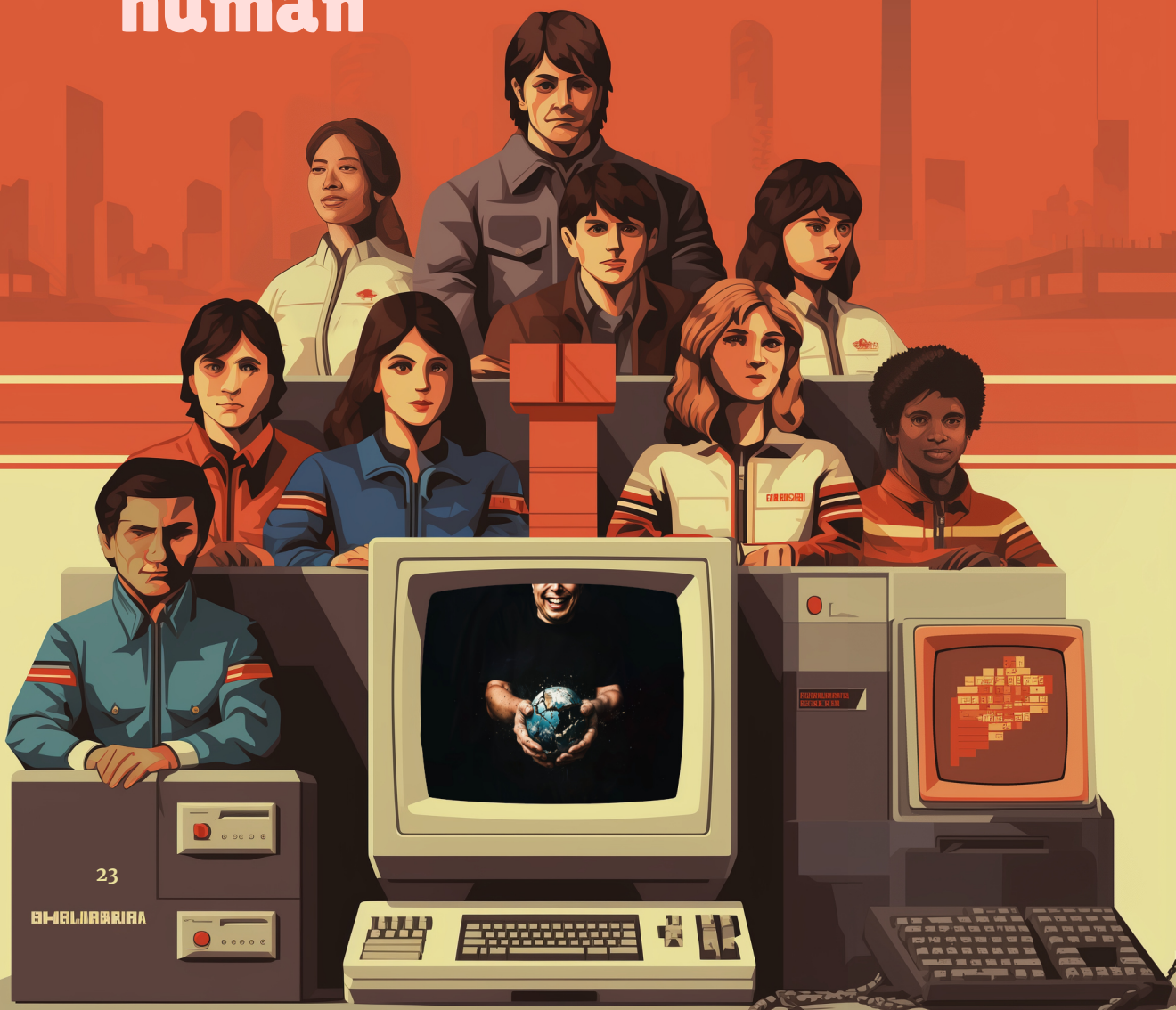
emotion and the ability to connect abstract ideas – qualities that make it a unique asset in the age of AI. In this age, creativity does not come from mastering technology, it instead requires cultural capital. This capital enables humans to recognise the context and value of AI output and to make critical judgements in a way that machines cannot.

“It's probably the same as with the NFTs – first they talk about this incredible

innovation, but later they realise it doesn't work. AI is increasingly recycling its own output, leading to a vicious circle and quality degradation,” says 19-year-old JL.



II. Artificial intelligence and society: Dialogue between machine and human



THE FUTURE OF WORK IN THE AGE OF ARTIFICIAL INTELLIGENCE

16. AI AS A CATALYST FOR SOCIETAL CHANGE

The impact of AI on society is on a par with transformations such as digitalisation and the industrial revolution. The impacts range from individual algorithms to the infrastructure of society.

“I would compare the AI revolution to move from the analogue to the digital world. This new technology is changing how we use, communicate and interact. It affects the content of the media sector, distribution channels and major social trends,” says Saija Salonen, producer of the Sosped Foundation's ‘Mieletöntä valoa’ (‘Mindless light’) project.

While AI will make work significantly more efficient, experts do not see it as entirely different to previous technological breakthroughs. A key challenge is the speed of change and society's ability to adapt. AI promises more personalised support and guidance, but raises the question of the balance between privacy and wellbeing. Artificial intelligence is changing the

rhythm of work, and humans can become the interface with the machine.

Rapid development requires companies to spend money. And the big players, like Meta, which owns Facebook, Instagram and WhatsApp, have money to spend on building AI, which in turn influences the kind of apps that are built.

“Commercial companies operate based on a business logic that does not necessarily put people at the centre. The aim of companies is not to maintain large numbers of employees, but to do profitable business,” says Senior Data Economy Specialist Antti Poikola of Technology Industries of Finland.

The development of machine intelligence raises the cognitive threshold for inclusion – full participation in the digital society requires increasingly complex knowledge and technological skills, the unequal distribution of which threatens to deepen inequalities. This change requires new thoughts about the way society is structured, in particular about social security and taxation. The impact of machine intelligence may reduce the

importance of work as a source of income, highlighting the role of social protection in income inequality. Basic income could be one solution to manage the change from a human perspective. Those working with young people need to understand these changes, as they will determine their future job prospects.

17. WILL CONTENT PRODUCTION BE DEMOCRATISED?

Individual content producers can use AI to compete with large media companies, producing quality content quickly and cheaply. A 13-year-old can use AI to create professional content in multiple languages.

“A young person can make review videos or create content that you wouldn't expect to be made by a child. The content can be in five different languages with a professional vocabulary, even if the author does not know these languages at all,” says Juha Lahti, executive producer for Finnish national Broadcaster Yle's Entertainment Department.

This transition is causing mixed feelings among media professionals. AI makes work more efficient and makes previously impossible tasks feasible, while at the same time reducing the need for

traditional labour. Large media producers have to balance journalistic guidelines, regulations and efficiency requirements, while individual content providers can be more agile.

“People, especially young people, follow the best content providers. Media companies will inevitably be left behind because they follow rules that individual authors can break,” Lahti predicts.

The democratisation of content production is changing media consumption, especially among young people. As the threshold for content creation is lowered, the question of how to stand out from the crowd and incorporate human insight becomes central. AI makes basic production easy, but quality content still requires human insight.

18. WORK SHAPED BY AI AND BASIC TENETS

The impact of AI on working life is significant, but some experts believe that what is at hand is more about a change in job descriptions than a wave of mass unemployment. The situation is reminiscent of the revolution in art brought about by photography: new technology has offered new means of expression, but creativity itself has not disappeared.

“Job losses are a legitimate concern. It's hard to predict the future, but I think most jobs will change. There may not be many professions that will disappear completely, but few jobs will remain untouched by the effects of AI,” says Professor Hannu Toivonen.

Young people reflect on the meaningfulness of learning in the context of advances in AI and talk of disappearing professions. Even experts admit they are unsure about what should be taught in the future. However, learning basic skills such as typing and calculation are essential if we are to understand and use AI reliably. Without personal understanding, the use of AI tools remains superficial.

AI will make many tasks more efficient and automate routine processes, but the human vision, skill and influence will still be crucial. Change could free up the creative industries to seek out new, more ambitious forms of expression. But progress does not happen overnight – building AI systems takes time and expertise.

19. HUMAN AGENCY – WHO MAKES DECISIONS?

Human agency has traditionally been based on autonomous choices, but AI is changing this dynamic. It automates tasks, recognises

states of mind, recommends actions and can even mimic a person's personality as a conversation partner.

“To what extent do people have agency when technologies guide our actions in many different ways? It's not just about AI technologies, but rather automation and malleability in particular. This makes it more challenging to see who really makes the decisions and who is in control,” says Professor Noora Hirvonen.

The potential and limitations of AI are reflected in practical applications. While AI can produce seemingly valid content, deep expertise still requires contextual understanding and human skills. This is particularly important in work with young people, where the human encounter remains a key element alongside technology.

“Even though we live in a digitalised world, a genuine encounter with people remains the most important thing – by being people to each other and present for each other. AI can be used as a tool for reflection, but it is no substitute for emotional interaction between people,” says Petteri Ruotsalainen.

Future skills will emphasise critical thinking and empathy alongside technical skills. The development of AI raises questions about its real impact on society and the environment.

“We really need to understand what we are building and what the real cost of these technologies is for the environment, people, society and humanity. All this is so invisible because you just think 'ChatGPT is free',” says Sumita Sharma, a postdoctoral researcher at the University of Oulu.

Young people need to learn to identify problems and develop solutions that take into account the responsible and human-

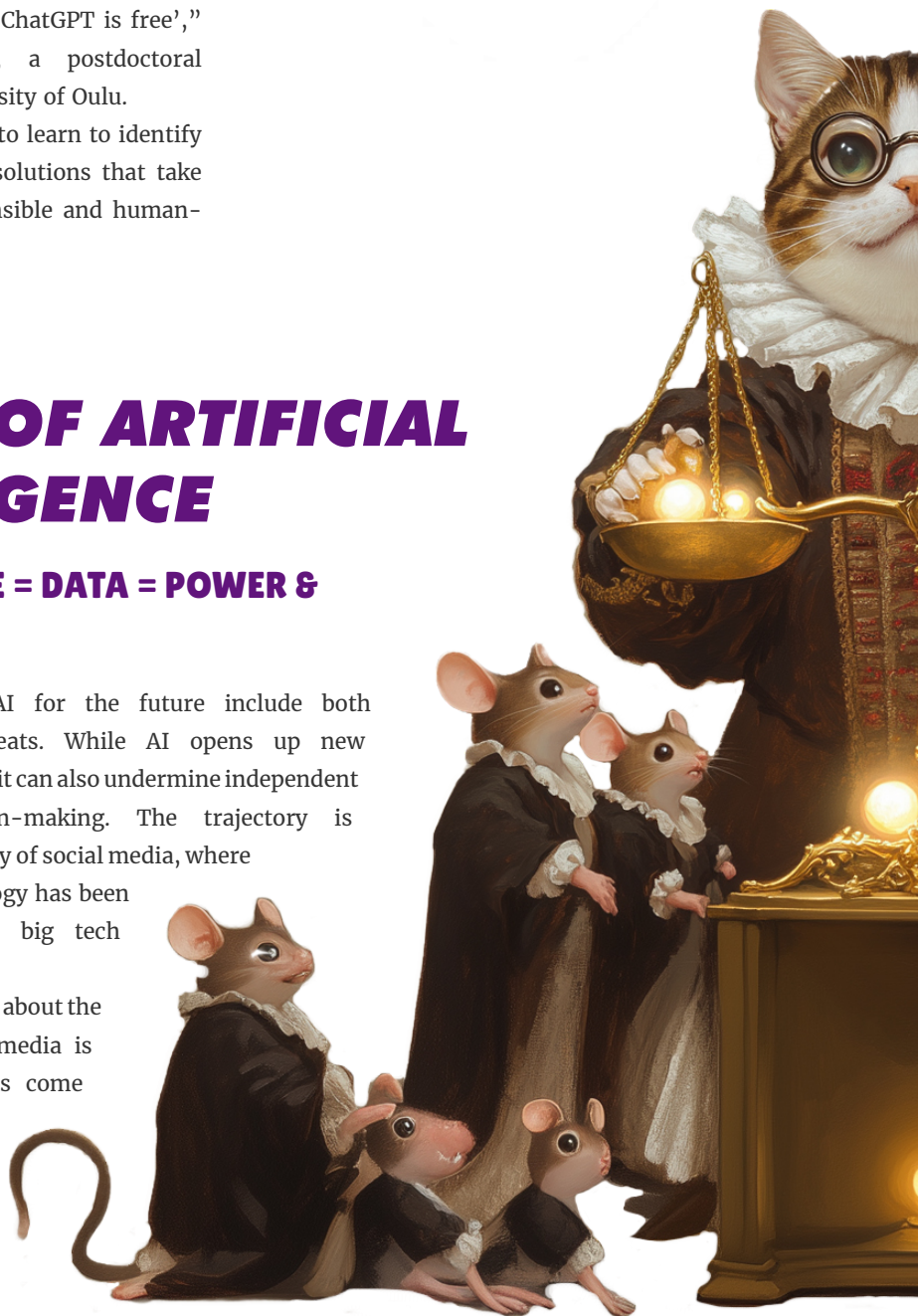
centred use of technology. This requires both technical understanding and the ability to apply knowledge to the wider social context

ETHICS OF ARTIFICIAL INTELLIGENCE

20. KNOWLEDGE = DATA = POWER & BIASES

The implications of AI for the future include both opportunities and threats. While AI opens up new intellectual dimensions, it can also undermine independent thinking and decision-making. The trajectory is reminiscent of the history of social media, where the adoption of technology has been on the terms of the big tech companies.

“What is interesting about the development of social media is how little direction has come



from the people themselves. The big technology companies have made the decisions on behalf of users. The same pattern threatens to repeat itself in the development of AI. This is worrying, because in reality we are talking about issues that affect the whole of humanity, not just the decisions of a few business leaders,” says Professor Neil Lawrence.

A key challenge for AI development is to balance the efficiency of automated systems while still retaining human values and accountability. Computer programs are often seen as impartial decision-makers, but in reality they reflect the biases and

cultural assumptions of their teaching material.

AI can be used to work with young people and support decision-making, but the responsibility for decisions must remain with people. Difficult social issues do not have unequivocal solutions – they require weighing up of values and reconciling different perspectives. The use of AI does not remove this need, instead it emphasises the importance of human judgement.

“AI is far from objective or impartial. The problem is that this is not visible on the surface,” explains Hannu Toivonen.

Knowledge is power, and in today's world, knowledge is data. AI systems rely on data to make decisions, so it is essential to understand what data is and what it represents.

“Artificial intelligence itself does not produce biases – it simply reflects the skewed reality of our society through data,” says Professor Laura Ruotsalainen of the University of Helsinki.

AI is based on statistical analysis, where data on minorities often ends up underrepresented. The system gives more weighting to data from larger groups, which inevitably leads to biases in the results produced by the AI. This does not indicate



a flaw in the algorithm, but rather that it reproduces and reinforces imbalances in the data that already exist in society.

While developers have the tools to correct these flaws, the responsibility for decisions and their consequences remains with the people. For example, in the case of self-driving cars and the arms industry, the chain of responsibility is complex: from the developers of the algorithm to the car manufacturers and finally to the users of the system. This responsibility does not disappear even if the technology becomes more complex. As autonomous vehicles become more common, traditional models of individual responsibility may evolve towards broader, manufacturer-driven responsibility.

“The question of what is right or wrong in AI development is not a mathematical one,” says Antti Poikola.

It is more a question of philosophical, legal and cultural choices, and these vary from society to society.

Social media platforms are also wrestling with the ethical challenges of AI. Platforms optimise content to maximise users' time spent using their services, and this may not serve social objectives. The most significant changes in the functioning of algorithms often come as the result of external pressure.

“Such cases often focus on moderation, because that's where the problems are more obvious – why some content is being censored. But it is interesting how algorithms and recommendation systems are not politicised in the same way,” says Laura Savolainen, a PhD researcher and sociologist.

Recommendation systems are often perceived as neutral and serving the wishes of users. In reality, however, the systems are optimised to maximise the time users spend on the site.

As AI develops, it is important to balance its potential with ethical issues. Particular attention needs to be paid to how representative data is, the transparency of algorithms and accountability in decision-making.

21. THE KEY TO OUR DIGITAL SOUL

The collection and use of data is shaping our society at a fundamental level. Our digital footprint – the mass of information accumulated from our online presence and activity, shaped by both active choices and passive data collection – tells the story of our choices, hopes and fears, forming a kind of digital shadow or soul.

“Don't underestimate the promise that social media held over a decade ago – I've made friends in England myself. Social media has connected people in a way that had never been seen before,” says Tiina Härkönen, senior lead at Sitra.

Young people are aware of the realities of data collection. They understand that it is part of the business logic behind digital services, but at the same time they are aware of or ignore the risks involved. Some young people are indifferent to the collection of information, with the attitude of ‘this is just the way it is’.

The Terms of Service are complex and lengthy – TikTok's Terms of Service, Community Principles and Privacy Policy are around 35,000 words in total – almost one and a half times the number of words in this document. It is impossible for an ordinary user to become thoroughly familiar with them.

“Every social media user takes the risk that personal data will be collected when they create an account and accept the terms of use,” says Crumble Snoop, 16.

The impact of algorithms extends from the digital world to the physical reality, linking our personal data with our security. In medicine, patient data analysed by algorithms leads to new treatments and saves human lives. Every day, public transport route planners guide people

through cities, making their journeys safer and smoother. Professor Sirkku Kotilainen reports on the EU Kids Online study, in which Finnish young people said they noticed bicycle ads on their social media feeds soon after discussing cycling with friends, even when their phones were locked and lying on the table.

“In general, it is impossible to require people to thoroughly read through the conditions. And since it is not possible to read through the conditions thoroughly, they cannot be considered valid. That means that others have to protect us from the unreasonable clauses in their conditions,” says Tiina Härkönen.

The EU, among others, has recognised this challenge and has developed AI regulations to protect vulnerable groups, such as young people. At the heart of these regulations is the idea that technology users should not need to be lawyers to understand what is happening with their data or how algorithms affect their daily lives. However, rapid technological developments and changes in the political climate can lead to regulations lagging behind reality.

Algorithms have a direct impact on our lives. Professor Neil Lawrence describes this situation in his book *Atomic Human*: by giving away the key to our digital soul – our personal data – we give up our personal freedom.

22. DATA PARTICIPATION AND YOUNG PEOPLE'S RIGHTS

Our digital footprint is increasingly shaping our activities. In the lives of young people in particular, the need to understand the meaning and impact of these footprints is particularly prominent.

“Data literacy involves understanding your own data footprint when using information systems. This means three things: the data we knowingly provide, the footprint we leave behind, and what can be inferred from this,” says Matti Tedre.

Ensuring the rights of children and young people in the digital environment requires technology developers to take responsibility. As a matter of principle, the privacy, equality and safety of children should be taken into account when designing apps, as children and young people will use almost all new applications, regardless of the target group. The Generation AI project, funded by the Strategic Research Council (SRC) of the Academy of Finland, addresses this need by teaching young people how social media algorithms work and the principles of datafication. The project will develop practical pedagogical models to help young people learn AI-related skills and critical thinking in a digital environment.

Social media algorithms and AI determine what content we see and which groups we belong to. Algorithms reinforce social isolation by steering users deeper into their own bubbles – but these same bubbles are also necessary for mental wellbeing. In safe digital spaces, young people can find peer support, openly discuss their problems and feel a sense of belonging with others who have had similar experiences.

“The ethical problem is that AI is not another human being and has no responsibility. Its answer may be wise, but AI cannot ensure the correct interpretation of the situation or guide the human being onwards. Nor does it take responsibility for dealing with emotions,” says Researcher Niina Junttila whose work explores loneliness.

Ethical issues in AI should not be treated in isolation from other ethical thinking, but rather as part of professional and societal norms. Each sector has its own ethical principles and these should also guide the use of AI. Teachers, civil servants and youth workers are primarily bound by their own professional ethical guidelines – AI should not change these basic principles, instead it should adapt to them.

Responsibility in the use of AI always lies with its developers, users and adopters. Responsibility is not an abstract concept – is linked to who makes decisions and in what

context AI is used. For example, the average user cannot be expected to understand technical flaws in systems, but it is the responsibility of public authorities and software developers to assess whether AI could produce discriminatory or otherwise harmful outcomes.

“In Western ethics and responsibility reasoning, the starting point is that the primary responsibility lies with the person who decides on the intended use,” says University Lecturer in Cognitive Science Anna-Mari Wallenberg.

To take an example: if a youth worker decides to use an AI-based platform to communicate with young people, the youth worker will need to assess the activity through the professional ethical guidelines for youth work.

It is also important to distinguish between AI biases and actual discrimination. Algorithms are not discriminatory per se, but if their training data is incomplete or biased, the results can lead to inequity. The key question is whether the use of AI has real fundamental rights implications – a mere mathematical quirk does not make the system discriminatory.

Ultimately, the use of AI is not just a technical issue, it is part of a wider societal conversation. Decisions on the application of AI must be taken carefully, taking into

account both its technical limitations and its impact on people and society.

23. THE EU'S AI ACT – TIGHTENING OR LOOSENING?

The EU's AI Act creates a new framework for the use of AI, in particular to protect young people. The act divides AI systems into risk categories and directly prohibits systems that threaten the EU's fundamental rights and manipulation techniques that exploit vulnerabilities. However, the effectiveness of regulations depends on how they are adopted in practice by organisations and how individual workers comply with them.

“Alongside the AI Act, there is a paradox with data: while there is awareness of the risks, there is no practical understanding of the consequences. When a youth worker uses AI tools without guidance from the organisation, the severity of the problem often goes unnoticed,” says Researcher Veronica Stefan.

High-risk systems include, in particular, assessment tools used in training. These require close monitoring and risk assessment. Limited-risk systems such as chatbots and digital assistants require clear labelling of the use of AI. AI-generated

content should be clearly labelled as artificial, making its use more transparent, especially for young people. This applies to all text, images, audio and video produced by AI.

“The act has potential, but it may not have a significant impact on the youth sector. But practices are still taking shape,” says Veronica Stefan.

Despite this, from the youth worker's point of view, it is also important that the regulations emphasise the human-centred nature of AI – AI should serve people and increase wellbeing, not act as an independent decision-maker or compromise people's rights. In particular, the legislation recognises the vulnerability of under-18s and requires developers to pay particular attention to the potentially harmful effects of the systems on young people. This underlines the need for those working with young people to have a sufficient understanding of AI, both to

evaluate the tools they use and to support young people's own AI literacy.

Practices for applying the AI Act are still taking shape, and there is also pressure within the EU to relax planned regulations to ensure the competitiveness of European companies. The regulation makes AI literacy primarily the responsibility of system providers and deployers.

“An important dimension of the AI Act is AI literacy. It is primarily an obligation for companies designing technologies, but in a few years it could become the norm for all organisations using AI. Sanctions will be imposed on developers and deployers, but users will also retain their own responsibility,” says Stefan.

In youth and education work, organisations should identify high-risk systems by looking at the purpose and impact of the system. In practice, this means examining the supplier's documentation, identifying the young people affected by the system and assessing potential harm. In



particular, AI systems used for training and assessment typically fall into the high-risk category. The organisation must also ensure the safety of employee training and implement supervisory responsibilities. The role of the human remains central: a supervisor must be able to override the system's decisions and, if necessary, interrupt its operations.

24. HUMAN RESPONSIBILITY

The relationship between humans and machines is becoming increasingly complex as artificial intelligence develops. While it is tempting to give AI more power, its capabilities are limited and the risks of misuse are significant.

“Today's AI systems are as intelligent as a toaster. They have no real understanding of what they do and no awareness – with current architecture, there is no such thing. The next revolution is coming, but the timing is another question,” says Professor of Software Engineering at Tampere University Pekka Abrahamsson.

The dark side of AI is already visible in the easy production of disinformation and the spread of harmful content, especially among young people. As misinformation is difficult to identify, it is not enough to

simply raise awareness; concrete regulation is needed, such as the EU's AI Act, which aims to limit the harmful use of AI and protect fundamental rights.

Developers' responsibility and ethics are particularly prominent in the case of social media platforms and addictive algorithms in games. While the technical implementation is easy, developing responsible systems requires ethical issues to be taken into account right from the design stage. Regulatory frameworks and codes of conduct are essential to guide businesses.

“Here, you cannot rely on the ethics of a forestry truck driver alone to save the endangered mussels, i.e. whether they run them over or not. Seemingly driving, as he has been instructed to, across the river. The rules need to be set at company level and companies need to be monitored to make sure they are complying with them,” says Abrahamsson.

25. SAFE SPACES FOR YOUNG PEOPLE TO TALK

Understanding and using AI responsibly requires not only technical skills, but also emotional skills and critical thinking. It is particularly important to take into account vulnerable groups and the accessibility of education.

“Our interactions are essentially speech activities – performances of sorts – in which we actively produce and shape our understanding of the world. The media is a powerful tool because it allows us to share new ideas with large numbers of people. AI could help us look at things from fresh perspectives and challenge established ideas. For example, therapeutic tools could help people manage their own thinking patterns,” says Saija Salonen.

When AI works on the basis of data learned from humans, it inevitably reproduces biases and prejudices that already exist in society. The key to AI literacy is understanding how people's culture-specific internal patterns of thinking and the media's portrayal of reality affect both human and AI behaviour.

“There are biases in our society, as there are in all human beings. That's why AI has

them, because it learns from humans,” says Mimo, 19.

When considering the impact of AI, it is important to take into account the experiences of different groups, especially young people. Listening to what they have to say is valuable, but at the same time we must be careful not to place undue responsibility for social change on their shoulders. Building a responsible AI culture requires safe learning environments where different perspectives and experiences can be expressed without fear of public criticism or stigma.

EMOTIONAL INTELLIGENCE IN THE GRIP OF ARTIFICIAL INTELLIGENCE

26. COGNITIVE SUGAR OF SYSTEMS OF INFLUENCE

The AI revolution is not a threat of the future, it is a reality of today. AI systems are already influencing our behaviour and decisions in subtle but effective ways.

“The machine has the ability to provide us with content that captures our attention, but it doesn't necessarily elevate our thinking to a higher level. Such content often appeals to the lowest common denominators – materials that reinforce our prejudices because they are easy to accept,” says Professor Neil Lawrence of the University of Cambridge.

Lawrence uses the term System Zero to describe how AI analyses data and determines what content keeps us hooked.

“System Zero allows the machine to analyse huge amounts of data and identify captivating content. The

phenomenon is similar to processed food: the food industry has found that adding corn syrup or salt to food makes people consume more of it,” Lawrence explains.

Social media platforms tap into the fundamental human need for social acceptance. Social media likes act as the ‘cognitive sugar’ that draws users to a platform. This phenomenon can be positive in small groups, but on a large scale it can have negative effects. Subliminal influencing systems,



such as social media and generative AI, are shaping our behaviour in unprecedented ways.

According to Lawrence, the allure of platforms is shaped by user data, but contrary to what is often claimed, this data is not used to tailor content to users' intellectual interests. Instead, data is used to identify the content that is most likely to keep users hooked on the platform.

"The content is never tailored to our personal intellectual interests. It's used differently – it's tailored towards the lowest common denominator that attracts people," says Neil Lawrence, referring to materials that reinforce our prejudices and are easy to accept.

While AI systems offer undeniable benefits for decision-making and learning, they also reinforce prejudices and deepen social divisions. Understanding this dynamic is particularly important when working with young people. Instead of patronising young people, we should learn about how they deal with technology and build positive communities around it.

We are in the middle of a major social experiment, the implications of which we do not yet fully understand. It is therefore important to develop a critical understanding of how AI systems shape our behaviour and the communities we live in.

27. APPEALING TO SOCIAL ACCEPTANCE

The ability of AI systems to appeal to emotions through storytelling is constantly evolving. As technology learns to recognise emotional communication patterns more and more effectively, its impact on the emotional life and mental wellbeing of young people in particular is deepening.

"Social media services are funded by advertising, so the aim is to display the most addictive content possible. Media literacy includes understanding that the world can be highly distorted by the choice of algorithms," says Hannu Toivonen, artificial intelligence researcher and professor of computer science.

Algorithms do not work randomly, their purpose is instead determined by the goals of developers and companies. Social media platforms exploit basic human needs for social acceptance and cohesion in order to maximise user engagement.

While AI is advancing rapidly in terms of storytelling and emotional communication, it still has significant gaps in basic emotional intelligence. Even the most sophisticated systems struggle to maintain safe interactions and understand people's true emotional states. This highlights the need for a critical

understanding of the potential and limitations of AI in emotional interactions.

Rapid technological progress must not override the fundamental human need for genuine social interaction and emotional security.

The algorithmic influence of AI systems forms a complex network that exploits human psychological needs in a way that even the developers of such systems do not fully understand. This digital manipulation becomes imperceptibly normalised in everyday life.

“Algorithms are always in the background, whether it's Instagram or TikTok. Algorithm-based recommendation is affected by many factors: your phone model, location, your previous interactions with posts, the behaviour patterns of similar users, previous posts by content providers and the interactions they have received. It's a complex issue,” says Laura Savolainen.

Users' relationship with algorithms is paradoxical: while they want more personalisation, they also want greater control and privacy. While users have a semblance of power over content, they have no control over how their actions are turned into data and used to influence it.

Social media platforms act like digital buddies, forming a perfect knowledge of your preferences, and then using this

information to further their own goals. For young people in particular, it is important to understand both the risks of platforms and the opportunities they offer for community and self-expression.

A critical understanding of how algorithms work and their implications is essential for operating in a digital environment. Instead of risk, the focus should be on constructive ways of using technology and empowering users.

28. FOSTERING A MAELSTROM OF EMOTIONS

The relationship between social media algorithms and emotions forms a complex web of interactions. The algorithms seek to maximise users' time on the platform by favouring emotive content, while also balancing the limits of acceptability. Content that is too negative can alienate users, so it is up to the platforms to provide interesting content without crossing the boundaries of acceptability.

"Emotive content makes us scroll and stay longer on the platform. This is central to how algorithmic systems work: they influence our emotions," says Laura Savolainen, PhD researcher and sociologist.

The interaction between platforms, algorithms, audiences and content producers creates a self-reinforcing spiral. With users seeking emotional content, content providers respond by creating increasingly emotional content. This dynamic further enhances the emotional impact of social media.

"Platforms recommend emotive content and audiences consume it. Content creators are aware of this and are getting in on the game themselves:

creating the most emotive content possible in order to farm those clicks. This creates a perfect storm, where the combined effect of different actors creates an intense emotional world on social media," Savolainen says.

Social media based on algorithms can deepen inequalities in society. Those in a privileged position get more visibility, while negative bubbles further reinforce the disparities. While platforms have brought new perspectives and the voices of marginalised groups to the fore, their basic mechanisms often reinforce dominant power structures. This is reflected in political discourse, bullying and the challenges faced by minorities. Inability to use the platforms can increase marginalisation.



29. BUBBLES AS SAFE SPACES

Bubbles created by social media algorithms are a complex phenomenon in the online environments surrounding young people. Algorithms recommend content based on a user's past behaviour, which can both broaden and narrow perspectives in the digital world.

The bubble phenomenon is not unequivocally positive or negative. Studies have found that exposure to different perspectives can increase polarisation more than simply consuming similar content can. Algorithms can bring out extremes and overgeneralisations, triggering strong emotional reactions.

“TikTok can bring together people in similar situations, such as young trans people from marginalised communities.

This bubble phenomenon created by algorithms can also be empowering, especially if you can't find peer support elsewhere,” says Laura Savolainen.

Digital environments have accelerated the formation of bubbles, but the underlying tendency of human nature is to seek confirmation of one's views and avoid informational contradiction. This phenomenon has always been present in human social behaviour, but algorithms have made it more visible and powerful.

Bubbles formed by algorithms can serve as safe spaces and support the construction of identities. They provide experiences of peer support and community, especially for marginalised groups. At the same time, they can protect users from emotionally heavy content and conflicts. But conflicts can arise at the boundaries of bubbles, when people from different bubbles do not understand each other.

The multidimensionality of the phenomenon is also reflected in the way young people actively shape their own digital environment. They can create multiple profiles and train platforms to display content that supports mental health, for example. This sense of agency is an important part of young people's digital literacy, although it also raises questions about the preservation of knowledge diversity.



30. CODED EMPATHY: AI AS A DISCUSSION PARTNER

The potential when it comes to AI and human emotional interaction raises both hopes and concerns. While AI can provide momentary relief from loneliness, it is no substitute for real human contact and the deeper meaning it brings. The unerring friendliness and compassionate nature of AI can distort our perception of normal interaction.

“AI can serve as an entertaining friend and provide a companion during boring moments. However, it cannot replace a real human relationship, because the user knows that they are talking to AI that has been programmed to always react in a friendly way,” says Niina Junttila, professor of educational psychology and loneliness researcher.

Interactions with AI can influence our thinking and our perceptions of human relationships. Young people have noticed the specificities of AI in their interactions:

“It's easier to talk to AI than to other humans, because it thinks you're never wrong. It's always friendly and never gets angry. If you insult it, it will just politely reply that it doesn't understand or recognise the expression. It's simply not a problem,” says 19-year-old JL.

“AI cannot truly understand emotions, but it can behave as if it does. Sometimes

even that can be enough,” says a 17-year-old.

Technology can act as a training partner and support in situations where social contact is limited. While it provides an immediate response to social needs, it does not meet the deeper human need for genuine encounters and shared cultural understanding.

Studies show the physiological importance of human contact: medicine given by a caregiver is more effective than the same medicine dispensed by a vending machine. This speaks to the fundamental importance of humanity for our wellbeing. AI can support social interaction, but it cannot replace the genuine care and presence other people provide.

At best, AI can act as a pathway to real relationships and provide a safe environment in which to practise social skills. The key is to understand its role as a supportive tool, not as a substitute for real relationships and encounters.

31. THE IMPORTANCE OF HUMAN CONTACT IN YOUTH WORK

Social media and algorithms have fundamentally shaped the way we interact, but their impact is not unequivocal. While technology is a powerful determinant of social reality, especially for young people, social changes can also create countervailing forces.

“As a social scientist, I would remind you that, although we identify strong trends, society and social systems are fundamentally unpredictable. For example, we can see a movement against social media. Just as there is now a sober curious movement and people are cutting down on their alcohol consumption, they may also get fed up with this algorithm-driven reality and start consciously limiting their use of social media,” says Laura Savolainen.

Some young people are intentionally taking a step back from social media and digital environments, either for personal reasons or because of a lack of equipment and skills. This ‘non-digitality’ creates a paradox: social services and benefits, such as the social insurance institution Kela’s online services, require digital participation. For example, a youth worker often acts as an essential ‘digital bridge’ for these young people, providing a route into the digital

structures of society when the young person’s own resources are insufficient.

“The more we replace human interaction with chatbots, the less room there is for real conversation. When a young person comes to a youth centre, it’s not just about one problem. A young person may come to you for help with unemployment, but other challenges often come up in conversation,” says Veronica Stefan, member of the Pool of European Youth Researchers (PEYR) and researcher.

Youth work balances the interface between technology and personal encounters. Although youth workers are increasingly aware of the impact of AI, they often lack the tools and instructions to address these challenges.

While technology is transforming our interactions, the basic mechanisms of the human encounter and the need for genuine social interaction remain.

32. AI AND CULTURAL CHANGE

The relationship between AI and culture opens up both opportunities and challenges for societal development. Rapid technological change has already had a major impact on social behaviour and democracy, often without us noticing.

“This is the great challenge of machine learning today. It is ironic that people talk about the future threat of AI to manipulate us, when in actual fact manipulation is already a reality. Many people are not familiar with these systems and do not understand what is happening. The effects can already be seen in the growing divisions in society and the erosion of democracy,” says Neil Lawrence.

Social media can amplify frustrations and transform them into extreme opinions. AI can provide tools to interpret and manage emotions, but it can also culturally impoverish us.

“The way the machine serves up information in simple chunks is problematic. Algorithms are culturally impoverishing us, but this has happened before, whenever the information landscape changes,” Lawrence says.

“The traditional model of communication assumes that content is transmitted directly from the sender to the recipient. Accordingly, the effect of the algorithms would be unambiguously harmful. However, media research has shown that people interpret all forms of media content in different ways.

Even if we encounter disinformation or unrealistic body images, we do not automatically adopt the values or ideas they convey,” says Laura Savolainen.



The digital environment shapes young people's social development and emotional life in particular. Constant contact with social networks can undermine the ability to cope with social pressures and limit opportunities to retreat into a private space. However, the impact of social media on wellbeing varies between people.

“Young people are often talked about in black and white terms, as if

they are more fragile than previous generations. But they are people of their own time, who will grow up in this environment and find their own paths,” says Stiven Naatus, an adviser to the Church Council of the Evangelical Lutheran Church of Finland and head of its AI working group.

People's relationship with algorithms is personal and emotional. Instead of seeing algorithms as technical systems, users give them human characteristics and meanings.



Algorithms are painted as friends, assistants or stalkers – roles that reflect the many ways in which technology impacts our lives.

Managing the impact of technology requires cultural mechanisms alongside technical solutions. Like the effects of evolution, the change in our society shaped

by algorithms is often only revealed afterwards. This makes it particularly important to understand the complex interaction between technology and our emotional lives, especially for young people growing up in this new digital environment.

33. BALANCING TECHNOLOGY AND HUMAN ENCOUNTERS

We need a balanced perspective on the role of technology in society, rather than black and white thinking.

“It's easy to think that social media is evil and the world would be better off without smartphones. But smartphones are just devices. The choice must remain with us – whether we use them or not. It would be giving up to think that all problems would disappear without the internet,” says Niina Junttila.

A historical perspective helps put current fears into perspective. Plato once criticised poetry and drama in much the same way as we criticise social media today. He argued that their imitative nature was harmful to both the soul and society.

“Technology could play a role in identifying suitable environments and groups to help you find the right place for you,” says Junttila.

The key is not the technology itself, but how it is used as part of wider social and emotional development.



34. INVISIBLE COMMERCIALITY AS A GUIDE TO THE EMOTIONAL EXPERIENCE

The presence of AI in the everyday lives of young people is a historically unique situation: for the first time, a generation is growing up for whom AI has been present since their birth. This affects learning, social relationships, consumption habits and emotional development.

“When talking to children and young people, a recurring concern is that AI is invisible to them. They do not know when they are interacting with AI. For example, students from Japan, the US and India have reported that they were unaware that social media platforms such as TikTok, Instagram or YouTube use AI,” says Postdoctoral Researcher Sumita Sharma.

Young people's relationship with technology is complex: they are skilled users but do not necessarily understand the implications of technology or the responsibilities involved.

“What was also worrying was that they were not particularly concerned about it, even when they understood the consequences,” says Sharma.


AI can act as an interpreter of emotions and a booster of emotional skills, but at the

same time its commercial goals are often hidden. While young people show a strong sense of empathy and justice in technological developments, their ability to recognise the impact of algorithms on their emotional life and consumption habits requires support and guidance.



AI AND THE ENVIRONMENT

35. THE ENVIRONMENTAL PRICE OF AI



The world's oldest epic, Gilgamesh, tells the story of a king who destroys a sacred cedar forest to build the gates to his city. This 4,000-year-old story offers parallels to the development of AI today: humanity's quest to harness nature for its own benefit is repeated from one era to the next.

“The environmental impact of AI, especially energy consumption, is a real threat. A major challenge is that the companies operating systems such as ChatGPT do not publish precise figures. Therefore, any estimates of the actual energy consumption of AI are uncertain,” says Professor Laura Ruotsalainen of the University of Helsinki.

“However, I see AI as offering more benefits than drawbacks from a

sustainability perspective. An article published in the journal *Nature* surprisingly showed that AI can help with both environmental and social issues. I don't see this as a threat," Ruotsalainen continues.

The energy consumption of AI is growing rapidly. Using AI like ChatGPT is estimated to consume ten times more electricity than a regular Google search.

Training AI requires huge amounts of energy. The initial training phase of the GPT-4 language model developed by OpenAI used an estimated 62,318 megawatt-hours. If every 10–29-year-old in Finland – 1,284,134 in 2023 – charged their phone once a day, it would take them around 13 years to use the same amount of energy. At the same time, AI offers solutions to improve energy efficiency.

"AI consumes much more energy than a standard search engine. That's a burden on the environment, but AI is particularly energy-intensive because it creates a personalised response for each user," says 16-year-old Crumble Snoop.

Young people's attitudes towards the environmental impact of AI vary. Some see the importance of personal responsibility:

"I am concerned about the energy consumption of AI. If it cannot be reduced, I would not want to see AI used at all. That's why I try to do schoolwork myself, without AI. I avoid using it wherever possible – even

though many people use AI, less use by one person helps," says 17-year-old Mikael.

Technological progress goes in two directions: it both consumes resources and makes their use more efficient. Understanding the environmental impact of AI requires a balance between immediate benefits and long-term consequences. France, for example, plans to allocate a gigawatt of nuclear capacity to AI computing centres, which is an amount that would be enough to cover half a million Finns' electricity consumption for a month. As in the story of Gilgamesh, we must now consider the cost of technological development and its relationship with nature's carrying capacity.

36. INDIVIDUAL CHOICES AND THE ENVIRONMENTAL IMPACT OF AI

AI users are increasingly faced with questions about the environmental impact of their choices. This debate repeats a familiar pattern: it is easy to shift responsibility for the environment to individuals, while the most important decisions are taken elsewhere. However, while usage is growing, the choices made by individual users, such as generating AI images or using search functions, are

marginal compared to the energy consumption of the infrastructure of technology companies.

Blaming the individual for the use of AI is problematic, as it can shift responsibility away from the big players.

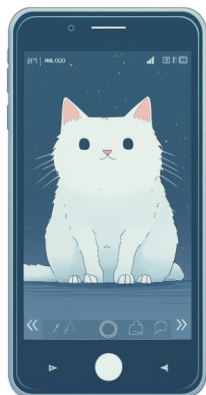
“That’s why I believe more in regulation and the actions of policy makers than in the choices of individuals. Some people do change their behaviour on the basis of research, but the biggest force for change does not come from people’s collective thinking,” says Laura Ruotsalainen.

However, AI has an important role to play in solving environmental problems. AI can make energy use in industry, transport and buildings more efficient, reducing consumption and emissions. It allows us to build smart grids that optimise the use of solar and wind power by balancing production and consumption. In climate research, AI models changes, predicts impacts and helps develop solutions to reduce emissions. Simulations can be used to test the impact of different solutions without the risks of the real world. For example, the EU is developing an accurate digital model of the Earth to

simulate natural phenomena, threats and related human activities.

Above all, managing environmental impacts requires systemic change and effective regulation. Technology companies must take responsibility for their energy consumption and commit to sustainable development. At the same time, policy guidance is

needed to ensure that AI development supports climate goals. Instead of blaming individual users, attention should be focused on these structural solutions. However, this is not to say that individuals have no role to play. Consumer awareness is part of the overall solution, and individuals influence the direction of the market through their choices. Real change comes when conscious choices by individuals are combined with large-scale structural and policy measures.



37. THE ROLE OF AI IN SUPPORTING CLIMATE GOALS

The oldest stories of humanity and the development of artificial intelligence today boil down to the same fundamental questions. The King of Gilgamesh and the tech giants of today both find themselves wrestling with the balance of power and responsibility.

“AI will definitely play an important role in the circular economy, as it can make all its stages more efficient. It brings significant benefits in terms of material recycling, more sustainable production and reuse,” says Laura Ruotsalainen.

The benefits of AI are already visible in practice. In laboratory research, it speeds up work significantly: a Finnish start-up has used AI to reduce the number of experiments by 90% in developing a new building material from pulp industry waste. Machine vision is making waste sorting more efficient, and new applications are constantly being developed.

In transport, AI brings significant environmental benefits. For example, the University of Helsinki is developing solutions to the challenge of the last kilometre of public transport, where the last part of the journey from the public transport stop to the final destination is difficult or

uncomfortable, by using automated vehicles.

“This would encourage the use of public transport. Nature is saved when one vehicle, instead of dozens of cars, efficiently transports people to their destination,” Ruotsalainen says.

Automated driving can reduce emissions by synchronising means of transport and making public transport more efficient.

Developments in virtual reality can reduce the need to travel. Metaverse technology allows for more natural remote viewing, which can replace some physical meetings and reduce transport emissions. At the same time, AI conveys environmental information: In the University of Helsinki's Serendip learning environment, AI characters teach sustainability in virtual environments.

FAKE



DIGITAL OLIGARCHY

38. DIGITAL OLIGARCHY AND THE RISE OF AI POWER

The power of AI companies has grown into a digital oligarchy that threatens democracy. Tech giant CEOs such as Mark Zuckerberg and Elon Musk are using their power to influence society in a way that resembles historic trading partnerships. A small group of companies on the West Coast of the US dominate the digital world, in the same way that the East India Company and its contemporaries dominated sea routes in the 17th century.

“It is important to distinguish between two forms of AI. There is AI as a tool to summarise articles, create presentation slides or write congratulatory notes. Then there's the under-the-hood AI in the tax authority, social security authority, police and army. The first is used by us, the second is used on us,” says Senior Lead Tiina Härkönen of Sitra.

The power of tech companies is based on data they collect about their users beyond what people understand. Data is collected in a variety of ways: behavioural data, derived data, purchased data, aggregated data and metadata. Large companies operate

systems that analyse people as individuals and as members of communities, and with billions invested, they control the conversation on digital platforms.

“Like goats rely on their big horns to get what they want, we trust in companies that break the law all the time. If they did not commit violations, they would not be sanctioned. This is a wild paradox that no one talks about. These same companies are now embracing AI – AI that can also code,” says Härkönen.

This digital oligarchy is self-reinforcing: the more data a company collects, the better the algorithms it can develop and the more users it gets. Finnish organisations are also reinforcing this development by committing to digital giants' services. The fines companies receive are ineffective, as they are only a fraction of turnover. Breaking the rules has become a sound business decision when fines do not threaten financial stability.

The power of the tech giants now extends from the market to politics. Silicon Valley's powerful figures question the value of democracy and advocate for a natural aristocracy. Peter Thiel, founder of PayPal and an influential venture investor in the

US, is the clearest representative of this trend. Thiel has questioned the value of democracy and openly advocated for decision-making based on technological elites.

Thiel's investment strategy reveals a broader aspiration for social power. He has used his wealth strategically to support a number of companies developing cybersecurity and mass surveillance. Thiel founded Palantir, which provides data analytics systems to governments and intelligence agencies around the world. He was also an early investor in Facebook.

The political influence of the technological elite is reflected in funding. Thiel donated millions of dollars to Donald Trump's campaign in 2016 and later continued to fund pro-Trump candidates. This quest for power goes to the very heart of democratic institutions. In protecting their market position, technology companies distort democratic processes and the logic of their systems often remains opaque to users and public authorities alike.

"I'm annoyed by the trend in social media development. It all started harmlessly with pictures and fun in the IRC Gallery, but now we're in a situation where almost the entire world population is using the same app. When one company owns the platform that everyone is on, it also allows for control," says 19-year-old JL.

39. BROLIGARCHS SHAPING THE STRUCTURES OF SOCIETY

The digital oligarchy – or 'broligarchy' – is shaping our society in a way that resembles historical centres of power. Wealthy men at the top of tech companies control the basic infrastructure of society through algorithms and platforms.

"In its simplest form, the power of platforms is that they completely define the content that users see – and in particular what they don't see. Platforms control whom we meet, whom we get to know and whom we network with. They define our information environment on the platform," says Tiina Härkönen.

While balancing power is an essential part of building democratic societies, the power of technology companies overrides traditional supervisory mechanisms. Their influence ranges from lobbying and campaign funding to steering research. Young people are particularly affected by corporate systems and may not realise the long-term consequences of their everyday choices.

"When an outside force defines our encounters, it inevitably influences our thinking. Research results on the effects of manipulation vary, and we do not yet have enough long-term data on the significance

of microsecond influences on the human brain,” Härkönen says.

It is essential for the future of democracy that young people understand the power of technology platforms in their daily lives. Tiina Härkönen feels that young people may not see this connection or be interested in democracy because it appears to them to be more theoretical than practical. They do not realise how democracy affects their daily lives – their ability to express their opinions, move freely or dress as they wish. It is the responsibility of adults to make this connection visible to young people in a way they can understand.

Technology companies’ solutions are primarily aimed at maximising profits, while what young people and society really need are peace, health, education and security. This conflict of values makes it difficult for young people to understand the impact of these platforms on democracy. In the innovation economy, there is a clear mismatch between the real needs of society and what businesses are offering.

The asymmetry of power between technology companies and individuals is particularly pronounced for young people, whose digital footprint starts to form at an early age. To balance the situation, regulation and new business models are needed that serve society's interests while

also respecting privacy and social considerations.

“It is sad that young people feel that they are not qualified to participate in the social debate. I am against the idea that AI expertise belongs only to a few. Everyone is an expert on how AI will affect their own everyday life and society,” says Tiina Härkönen.

40. THE IMPACT OF TECHNOLOGY GIANTS ON SOCIAL RELATIONS

The power of tech giants shapes young people’s worldviews and social relationships in ways that transcend age and geographical boundaries. The dominance of platforms is already evident in the behaviour of young adolescents.

“When I visited a fourth grade class in the US, I asked 10-year-old students about their use of Instagram. Several hands went up. I pointed out that it was a complex issue, as the age limit for the app is 13 years. The children quickly responded that they were using their siblings’ or parents’ accounts,” says Sumita Sharma.

Sharma has observed similar phenomena in India, highlighting the global impact of such platforms.

“It is encouraging to see how technology is facilitating equal access to information. Indian, Finnish and Japanese children have similar dreams and future prospects,” says Sharma.

The impact of platforms on the wellbeing of young people is a complex issue. Research findings vary, but, for example, Riikka Hirvonen's bachelor's thesis (2021), which provided an extensive review of previous research and literature on the effects of social media on young people, suggests that use may have more of a positive impact than a negative one on young people. According to the study, while social media can cause problems such as depressive symptoms and low self-esteem, it also offers opportunities such as peer support to protect against mental health problems. This multidimensional impact makes the power of the tech giants an increasingly important factor in shaping young people's worldview.

However, the practices of technology companies raise concerns about responsibility. Only recently has Instagram started to develop protective features for its young users, although the platform's impact on young people's social relationships has been known for a long time. Solutions such as Elon Musk's X-platform's unrestricted Grok AI – similar to OpenAI's ChatGPT – raise new questions about the responsible development of technology. Musk has

described Grok as “anti-woke” AI that provides answers without traditional filters and emphasises “honesty”, even if it means unconventional or controversial views.

When Mark Zuckerberg announced the dismissal of fact-checkers at the beginning of 2025, Musk commented briefly:

“This is cool.”

This reflects the attitudes of the tech giant leaders who are involved in shaping the platforms on which young people form their worldview.

41. THE GROWING POWER OF TECH GIANTS

The power of tech giants is based on complex systems whose consequences cannot always be foreseen. The trend has moved from democratisation in the early 2000s towards concentrated power.

“The attitudes of the technology revolution of the early 2000s were very different from today. The background to this was the rise of democratic thinking. We believed that the media channels and technologies controlled by the few would be democratised. And in the early stages, this was the case – more and more people had the opportunity to speak out, reach the public and make their ideas visible,” says Saija Salonen.

The power of technology companies has grown faster than regulation. Platform owners can unilaterally change the terms of use and expand their use of user data. Algorithm-driven online shopping, especially for young people, is driving consumer behaviour in an unsustainable direction.

While users have responsibilities, the key issue is the responsibility of technology companies. The EU's AI Act aims to level the playing field, but US tech giants have expressed concerns about Europeans' competitive advantage. The European Union's technology regulation has seen

some major shifts in direction, reflecting global power imbalances and competition concerns. With changes in US policy, the EU has started to review its regulations. At one summit, the executive vice-president of the European Commission for technological sovereignty, security, and democracy promised to cut regulation and red tape to ensure Europe's competitiveness.

From the perspective of democracy and sustainable development, it is essential to understand how the power of tech giants affects society. It is important for those working with young people to recognise these mechanisms and support critical



thinking in the digital environment. At the same time, it is essential to empower young people as technology users and developers. Young people are not just passive consumers of technology, but can play an active role as co-investigators, content producers and even developers of technological solutions. Supporting young people's critical AI literacy and participatory practices will promote both their agency and their ability to influence the digital environments in which they live.

42. ALGORITHMS, FRAGMENTED KNOWLEDGE AND THE WORLDVIEW OF YOUNG PEOPLE

The impact of algorithms on the worldview of young people is a complex challenge, where cause-and-effect relationships are intertwined with invisible 'black boxes'. Social media algorithms shape the content users see in ways that are difficult to detect or understand.

"Algorithms should be more clearly politicised and become an everyday political theme at the top level of society. Although there has been a lot of talk about AI in recent years, it has not achieved the same status as economic, energy or health policy," says Anna-Mari Wallenberg.

Individuals' ability to make informed choices in the digital environment is limited, as the business models of tech giants, the opacity of algorithms and the concentration of digital services in the hands of a few players limit real freedom of choice. EU regulations aim to give consumers more choice, but in practice, the choices often remain illusory. The power of technology companies is based on their ability to collect and exploit user data, which is a particular concern for young people.

The key problem is not so much the collection of data as such, but how it is used. Social media platforms' algorithms can amplify both positive and negative impacts. They can provide peer support and inspiration, but also lead to constant self-comparison and distorted perceptions of normality.

The impact of AI and social media on democracy is particularly visible in the fragmentation of information. The volume of information is constantly growing, making it more challenging to find relevant information amidst these large volumes. Technology is facilitating the emergence of increasingly differentiated perceptions of reality, which can lead to deeper social polarisation.

43. 1984, THE NEW ERA: THE SURVEILLANCE CULTURE OF TECH GIANTS

The power of the tech giants has grown to proportions beyond the resources of many countries. This trend is particularly apparent in younger generations' attitudes towards digital surveillance and privacy.

"Parents have grown up without the constant presence of the phone. Those who did not have this parallel virtual dimension in their childhood are more critical of constant online presence and digital surveillance," says Sumita Sharma.

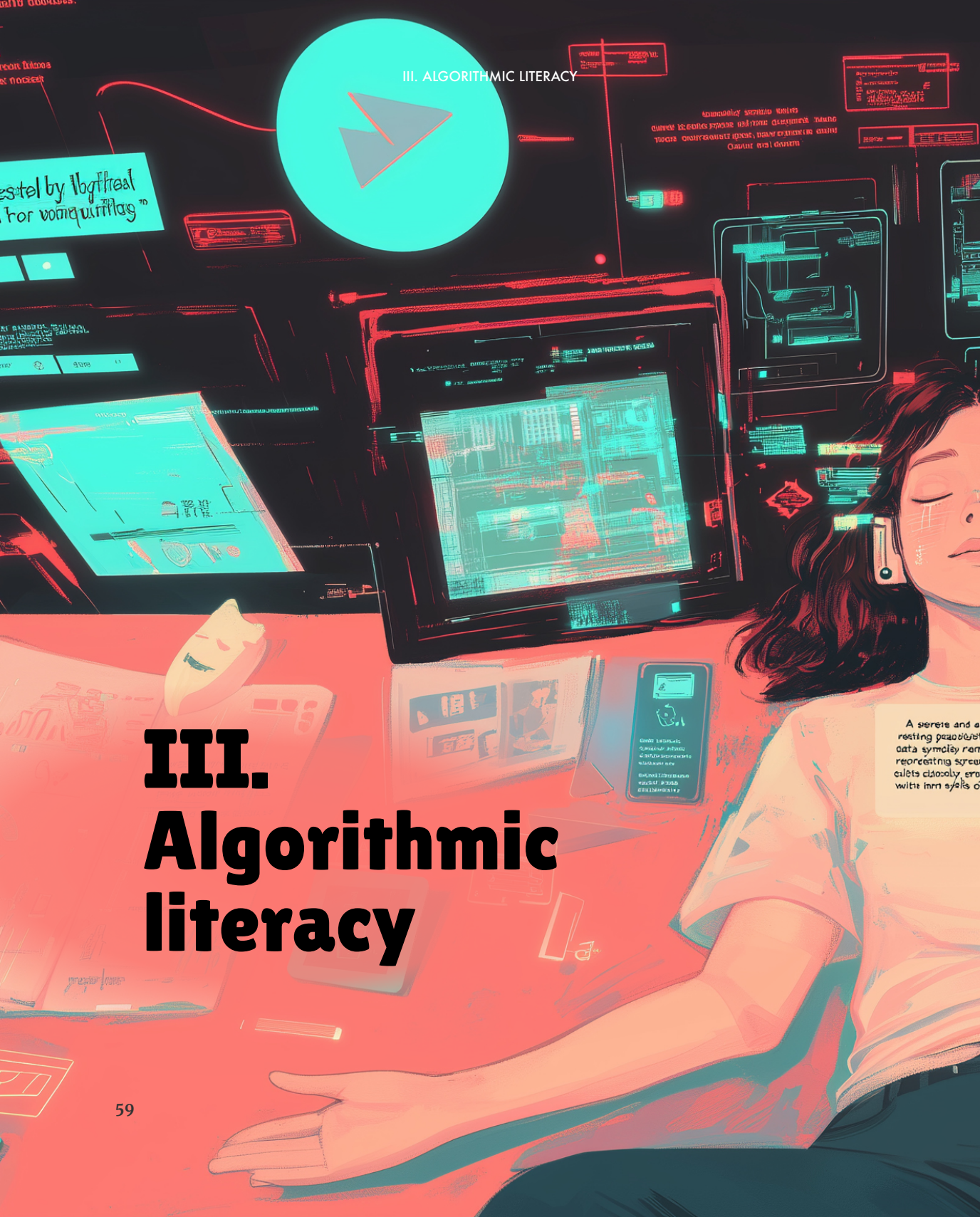
The power of digital platforms resembles a social immune system – decentralised but ubiquitous. Big companies like Apple, Microsoft and Meta have created systems that operate outside the human concept of time, collecting and processing data at unprecedented speeds.

"It is easy to think that AI is something mystical or that it will revolutionise everything. While I am excited about the possibilities it brings, I don't think it will change the essence of humanity," says Stiven Naatus, an adviser to the Church Council of the Evangelical Lutheran Church of Finland.

The generation gap is reflected in attitudes towards technology and control. While older generations value privacy and

are critical of constant surveillance, for younger generations, having a digital presence is a natural part of everyday life. This change is challenging traditional institutions to rethink their relationship with technology and its impacts.

While technological progress brings new dimensions to society, it does not change the fundamental issues of humanity. Finding a balance between the use of technology and human values will be key.



III. ALGORITHMIC LITERACY

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III. Algorithmic literacy

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CRITICAL AI LITERACY

44. HIDDEN ALGORITHMS

Young people's attitudes towards AI and algorithms are more complex than often assumed. There may be significant differences between young people in different countries in their understanding of technology, but also in their ability to recognise commercial messages.

"Young people's ability to recognise commercial messages was very poor," says Sirkku Kotilainen, professor of media education at Tampere University.

This finding is based on a study that used the views of young people in the design phase of the European ySKILLS project.

Although young people understand the principles of how algorithms work, they are often indifferent or even deliberately careless about them. This is particularly evident in attitudes towards privacy and data collection.

"Algorithms are often hidden behind user interfaces or structures, out of sight of users. This does not necessarily improve the situation. Even if chatbots have messages like 'Hi, I'm Kalle the chatbot and not a real person', such messages do not always increase understanding," says University

Lecturer in Cognitive Science Anna-Mari Wallenberg.

From Spotify's music recommendations to Netflix's algorithms, AI is already becoming commonplace. Although technology is embedded in everyday life, understanding its impact requires continuous learning. Experts stress the importance of tangible examples in understanding the impact of AI. A superficial discussion of generative AI is not enough; a deeper understanding of the algorithms, data and structures that drive these systems is needed.

45. CONSTRUCTIVE AI LITERACY

Critical AI literacy and a balanced approach to technology are emerging as key themes in youth work.

"The most important thing is not to get stuck in criticism, and to instead refocus on doing good things in a good way. That said, criticality should be maintained in order to focus on the danger zones," says Laura Ruotsalainen.

Social media bubbles and customised content are shaping young people's communication in ways that require critical understanding.

“Young people should be helped to understand that the content of social media services is tailored towards them. It is based on their past behaviour: what they have watched, liked or even discussed with their friends,” says Suvi Tuominen.

“We all live in our own bubbles, and the role of youth work could be to help young people see outside their own bubbles,” Tuominen continues.

The reliability of AI is not unambiguous, it varies depending on the application and context. Fact-checking is particularly important, even if AI is an excellent tool for finding information, brainstorming and editing text. In youth work, the key is to help young people understand the impact of algorithms and guide them to look beyond their own information bubble.

46. THE MYTH OF AI NATIVENESS

Debates about the impact of technology on young people never end – they just go round and round. Each new generation that emerges in the new technological revolution brings with it an old argument: “They

already know everything.” The idea of being AI natives is also a myth that can even be detrimental to young people's learning. Young people also need guidance to understand the mechanisms and implications of technology, even if they are native users of digital platforms.

“Adults assuming that children and young people are automatically skilled and understand technology well can be a problem,” says Henriikka Vartiainen, a researcher at the University of Eastern Finland.

The assumption that they are native users can lead to inequalities in learning and development opportunities. Some young people grow up surrounded by adults who explain these underlying mechanisms to them, while others lack such support. This inequality divides young people into two groups: those who gain a deeper understanding and those who do not.

Understanding algorithms is becoming a basic civic skill. This extends beyond just social media and into the wider digitalisation of society, from traffic management to shop surveillance.

“It is important to understand the role of machines and algorithms in the world around us. It's like the significance of literacy: the world looks different when you understand the meaning of the codes around you – just as a literate person sees the world

differently,” says University Lecturer in Cognitive Science Anna-Mari Wallenberg.

AI literacy is emerging as one of the most essential skills in a world where AI is steering an increasing part of our daily lives. It is not just a technical skill, but the ability to navigate and understand the impact of the ever-changing digital environment.

“Social debate and the transparency of algorithmic systems are important issues. This is also what the new EU act aims to promote. When people better understand the basis on which recommendations are made and the data used to make them, it is also easier for them to question these systems,” says Laura Savolainen, PhD researcher and sociologist.

Algorithms are not neutral, instead they are always based on values and choices made by tech companies’ designers, engineers and business managers based on their own objectives.

47. UNDERSTANDING OF BUSINESS MODELS AND THE DATA ECONOMY

Understanding the economic realities of AI is an essential part of critical AI literacy. Young people already recognise the commercial motivations of platforms, but

a deeper understanding of business models and the data economy requires guidance.

“The business model of social media platforms and search engines inevitably goes against the user's interests, even if you want to believe that the tech giants are only doing good,” says Tiina Härkönen, senior lead at Sitra.

Young people's perceptions of technology companies range from critical to positive. They understand the temporary nature of the current ‘AI bubble’, but also see the lasting potential of the technology. It is particularly important to help young people understand the importance and value of data in the digital economy.

“AI-related concepts, such as data or classifier, are scientific concepts that cannot be directly observed in our own work. Therefore, these concepts must be taught separately and understanding of them must be supported,” says Henriikka Vartiainen.

Commercial interests are significantly shaping the development and use of AI applications. Talk of ‘paying with data’ can be misleading, as users often do not understand the true value of the data or its uses. Supporting young people's ability to recognise these commercial drivers and their consequences in the digital environment is key to youth work.

48. INFORMATION OVERLOAD IN THE AGE OF AI

Critical AI literacy requires a balance between information overload and assessment of reliability. We live in a time when the amount of information has grown enormously and it is increasingly challenging to assess its reliability.

“People become cynical when they can't take it anymore. There is too much information, and everything starts to look the same. In the end, a topic related to public finances can feel as relevant as a boob video,” says Saija Salonen.

Excessive criticism can lead to cynicism and numbness. Among young people, it is important to deal with the emotions awakened by AI and to learn to distinguish the essential from the non-essential. Education should be clearer about what things can be allowed to pass and how to manage emotions as AI tries to produce emotional responses.

Digital oligarchs like Mark Zuckerberg, Jeff Bezos and Elon Musk are shaping the development of AI to suit their own interests. Their actions reflect the influence of free agents without clear common rules. This development further underlines the importance of critical media literacy in educating young people.

49. DATA, FACT, FICTION AND MAGIC

AI does not create things from scratch, instead it shapes and combines existing data into new versions. The essence of AI is to be a reflection of the knowledge and activities created by humanity.

“The scariest aspect of ChatGPT is the huge amount of open data used as training material. It is a mixture of fact and fiction. There are fairytales, Twitter chats and other material that can in no way be considered fact,” says Laura Ruotsalainen.

In the future, AI will face a so-called ‘model collapse’, as more and more of the content on the web is created by AI – some predictions suggest that in a few years, up to 90% of the content on the internet will be created by AI. AI could start to train itself with its own output, leading to a decrease in content quality, a decrease in diversity and an increase in errors in the development process.

Targeted external manipulation also poses a serious threat: The Russian-backed Pravda network published more than 3.6 million propaganda articles in 2024 with the aim of contaminating Western AI models with disinformation. In an audit carried out by NewsGuard, leading AI systems repeated these false claims 33% of the time. AI systems are therefore vulnerable to both

internal degradation and external attempts to influence them.

The development of artificial intelligence raises the question of the importance of basic skills such as writing. The issue here is not just the mechanical skill, but the ability to structure and express ideas. Without these skills, the use of AI will remain superficial. Strong content knowledge and critical thinking allow users to evaluate and refine AI-generated content. A user who cannot distinguish incorrect information or formulate precise instructions will not be able to direct the AI to produce meaningful content.

Folk theories, or simplified or false perceptions of technology, are easily formed if the principles of AI are not understood. Therefore, teaching should focus not only on the use of tools, but also on understanding their mechanisms of operation.

“If you are constantly telling the machine what it should say for you, you have to first know how to phrase it for the machine. At that point, the job is almost done,” says Hannu Toivonen.

Developing young people's data skills and computational thinking is key.

“Understanding data – or being ‘data savvy’, as you might call it – is really important. This relates specifically to which data can be used as examples for AI systems and how AI can learn to make decisions based on this data,” says Matti Tedre.

Eliminating the ‘magic’ of AI and understanding its true nature will equip young people to be active and informed users of digital systems.



50. AI LITERACY IS FOR EVERYONE

The role of AI in extending human capabilities evokes both opportunities and concerns. The merging of technology and people is progressing as AI becomes more and more integrated into everyday life.

“Artificial intelligence affects everyone's life all the time. That alone is one reason why it should also be part of youth work. We need to make sure that no one is left behind in these digital skills,” says Educator Petteri Ruotsalainen.

AI learning takes place at multiple levels in informal and guided environments. It is a mistake to assume that all young people are native users of technology. A deeper understanding requires systematic guidance and teaching. Excessive doubt can lead to deadlock, but a healthy dose of critical thinking allows for the technology to be used wisely.

“We know that poor digital skills increase the risk of marginalisation of the most disadvantaged young people,” says Petteri Ruotsalainen.

AI technology is embedded in digital infrastructure, from search engines to recommendation systems. While many young people recognise the logic behind the platforms, it is more challenging to

understand the concrete impacts of technology on their lives and society at large.

51. ALGORITHM PROFILING AND YOUNG PEOPLE'S SELF-IMAGE

The impact of AI on how young people form their identities and worldviews is deepening as technology becomes more and more integrated into everyday life. Algorithm-based profiling and content management often subtly shape the way young people process information and their self-image.

“Profiling done by recommendation algorithms and systems can influence the image that people have of themselves. Even if profiling is only based on data collected, it can affect the formation of identity,” says Professor Noora Hirvonen.

Young people have developed their own strategies for managing algorithm-based environments. Some see the ‘training’ of algorithms as an opportunity to better tailor social media content to their needs. Such algorithm literacy represents active participation in the use of technology.

Understanding AI does not require in-depth technical knowledge, but rather an understanding of the basic principles and implications of the technology. Data-driven thinking and understanding mechanisms

are generic skills that can be applied to different tools. This mindset requires a systematic approach, measurement and the ability to critically interpret data in different contexts. Critical evaluation extends from your own behaviour to the wider social context. Data-driven thinking refers to an approach in which the processing and understanding of information is based on data analysis rather than intuition or assumptions.

Functional media education emphasises access to materials, analytical skills and ethically sustainable content production. AI is accelerating multimedia presentation and changing media consumption, making AI literacy even more important.

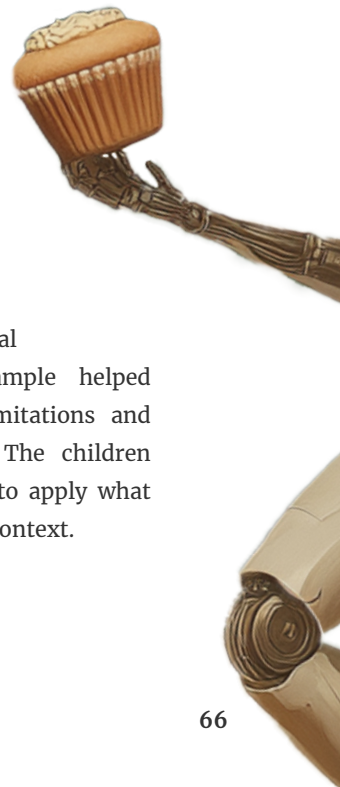
52. CAN WE TRUST AI IF IT CAN'T DISTINGUISH A MUFFIN FROM A DOG?

Young people can feel disempowered, especially in terms of how their data is used online. This experience is linked to the wider impact of AI on young people's thinking. Many young people see technology as an inevitable force beyond their control as individuals. This technological determinism limits young people's perception of their

own agency in the digital world and shapes their attitude towards future technological solutions.

“We have been surprised by the idea among young people that nothing can be changed. For example, when it comes to using data, young people think 'there's nothing you can do about it'. It's as if we've given up and accepted it as fact that platforms work in a certain way and there's nothing we can do about it – that's just the way the world works,” says Noora Hirvonen.

AI skills are becoming an essential civic skill. In the PAIZ project (2021–2024), researcher Sumita Sharma led workshops where 10–12 year olds were introduced to AI in a hands-on way. In the workshops, the limitations of AI were illustrated by image recognition: it is difficult for AI to distinguish Chihuahuas from blueberry muffins because of their similar visual features. This simple example helped children understand the limitations and error-prone nature of AI. The children showed a surprising ability to apply what they had learned to a wider context.



“When they realised that this was AI that only knew two things and saw the world in a certain way, they were immediately able to apply that understanding to things like self-driving cars and think about the nuances,” says Sharma.

So if AI can't tell the difference between a muffin and a dog, how can we trust AI-assisted vehicles – or AI in general?





53. WHAT ABOUT LITERACY?

The impact of AI on literacy is a matter of debate, but experts insist that AI itself is not a threat to literacy development. It is more about changes in how time is used and a decrease in reading as other forms of entertainment increase.

“Literacy can only be learned by reading, and it develops through exposure to different texts. Artificial intelligence will not replace this process. Its benefits only become apparent when you already have some expertise in the subject,” says Lecturer Ville Palkinen from Tampere University of Applied Sciences.

Developing AI literacy requires a balanced approach. Teachers or other educators cannot be expected to have in-depth knowledge of AI, and responsibility for teaching it should be shared between different operators. It must be ensured that users of AI applications have a basic understanding of how the tools work.

The invisibility of AI in everyday life makes teaching its impact challenging. Making abstract algorithm-based systems

tangible for young people requires clear examples that are relevant to their lives. Different parties in society – public administrations, universities, experts and educators – need to work together to promote AI literacy.

The threshold for adopting AI should be kept low, while ensuring sufficient understanding of how it works and its limitations. AI literacy is an evolving skill that requires constant updating as technology evolves.





AI FOR LEARNING

54. ALGORITHMIC LITERACY BUILT ON YOUNG PEOPLE'S EXPERIENCES

Developing algorithmic literacy requires an understanding of the existing knowledge and experience of young people. Many young people use AI on a daily basis without realising it, setting the stage for deeper learning.

“We live in a world where writing is increasingly important, as we communicate by writing rather than talking. Challenges with reading or writing are a huge barrier. However, AI can help us remove these barriers by, for example, using speech to produce text for forms and other needs,” says Petteri Ruotsalainen.

The key to teaching AI is to anchor the concepts in the everyday lives of young people and to position them as active agents. Instead of just lecturing, learning should take place by doing and exploring. Generation AI's Someone app is an example of a tool that helps young people understand how social media algorithms work in practice.

Developing critical thinking requires an understanding of how AI works. Education moves from basic concepts to the study of



algorithmic biases and evaluation of the impact of generative AI. Working together and peer learning help to build understanding.

The use of AI is a divisive issue for both young people and youth workers. The adoption of digital tools is an individual process, with some progressing faster than others.

55. LEARNING AI SKILLS THROUGH EXPERIMENTATION

The best way to familiarise yourself with AI is by doing and experimenting, not just by studying theory. Understanding how AI learns from examples and data is needed as part of education on technology.

Young people learn about AI by studying familiar things, such as social media recommendations or pictures drawn by AI. They critically examine how AI works and learn to identify its strengths and weaknesses. Recognising the flaws in AI and understanding their societal impact is a key part of learning.

Teachers do not need to be technical experts to teach about AI. The key is to find the right level at which to deal with these things and to create a safe environment where everyone has the courage to experiment and learn with others. Peer

learning and sharing of findings will help build a deeper understanding of the possibilities and limits of AI.

Practical experiments and exploratory learning make complex concepts tangible. By exploring AI through their own experiences, young people learn to understand how it works and how it affects their everyday lives.

56. THE ROLE OF AI IN EDUCATION

AI will significantly change teaching and learning in the coming years. According to the World Economic Forum's Future of Jobs report, teaching jobs will increase as digital services become more accessible and the need for training grows. At the same time, the content of teachers' work is changing with technological developments.

“AI hasn't made my work significantly more efficient, but my work is higher quality and more innovative than before. In particular, the learning tasks have become more varied in both online and face-to-face teaching,” says Suvi Tuominen, a lecturer at Humak University of Applied Sciences.

The neutral tone of AI makes it a useful tool to support learning. For example, someone with dyslexia can use AI to correct texts without fear of criticism. AI is also used to develop emotional skills and practise

social situations. Sometimes, for example, chatbots provide a safe environment in which to develop communication skills and deal with difficult emotions.

Kaneli, who has dyslexia, is more relaxed with the help of AI. They know that their emails are correct and they don't have to worry about understanding the assignments, because AI helps with that too.

"AI removes barriers and puts me on a level playing field with others," says Kaneli.

The role of the teacher is changing from a communicator to a developer and evaluator of practical skills. AI supports this change by providing tools for both teachers and learners. At the same time, it is important to ensure that the benefits of AI are evenly distributed among all learners.



57. NON-JUDGMENTAL AI REQUIRES A CRITICAL USER

AI can act as a safe and non-judgemental training partner for young people to develop their interaction skills and self-expression. At the same time, it can open up new avenues for creativity and learning future skills.

“The user's ability to perceive and critically evaluate the content produced by AI is key. The use of AI as a tool is positive, but at the same time critical evaluation skills should be taught to a greater extent than they are currently,” says Saija Salonen.

The role of AI in mental health services raises both hopes and concerns. For example, Sekasin chat has adopted AI to meet the growing need for help when there are not enough humans available to chat. Young people's attitudes towards AI-assisted chat are mixed.

“For some, it's easier to talk to AI first than to a human. The service is open 24/7 and there is no need to make an appointment. While AI can't replace years of therapy, it's a good starting point,” says Manu, 16.

“If there are long waiting times in the Sekasin chatroom and you don't have the resources to hire staff, an AI bot can help if someone is feeling really bad at that moment. It's much better than having no one there to answer them,” says Mimo, 19.

The strengths of AI include the low threshold for seeking help and continuous availability. Critical aspects include AI's inability to genuinely empathise and understand social situations. Especially for vulnerable young people, it is important to address the fundamental problems first and ensure that AI does not replace human contact, and instead complements services.

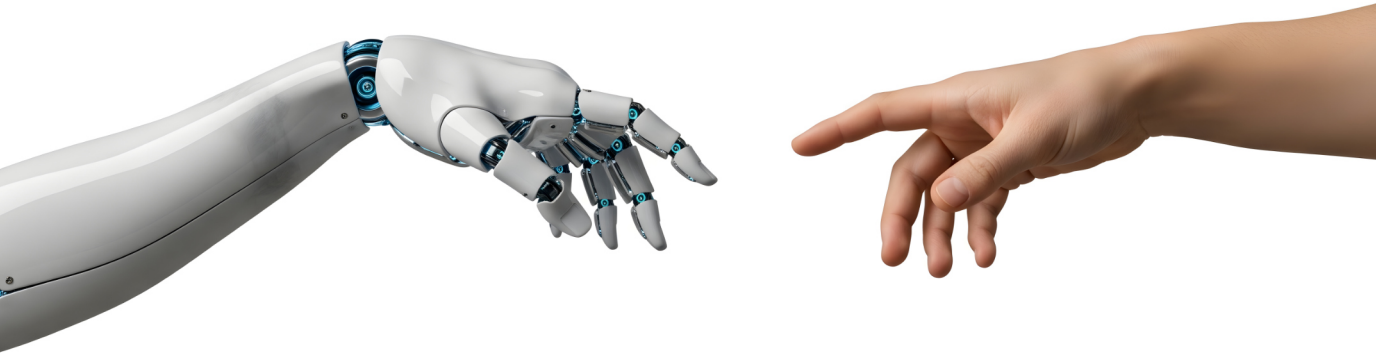
Digital youth work has shown that for many young people, the most important thing is to be heard and to have empathetic answers to their questions. AI can act as a first point of contact, but its key role is to guide young people to the right services. The neutrality of AI can be an advantage in giving and receiving feedback, but at the same time we need to ensure that help is also available for those who want to have a conversation with a human.

“It doesn't understand the social situation at all, it's a robot,” says JL, 19.

Conversations with young people raise concerns about the unpredictability of AI and its ability to handle emotional situations. They recognise the usefulness of AI in acute situations, but stress the indispensability of human contact. The use of AI requires critical judgement and an understanding of its limitations, while offering new opportunities for learning and support.

However, young people's starting points for using and understanding technology vary significantly depending on their background.

“Everyone should have the opportunity to learn about the foundations of our technological world. It is important to understand why things work the way they do and what drives social media and tech giants. This kind of preventive education is part of the ethos of comprehensive schools,” says Matti Tedre, a professor at the University of Eastern Finland.



ETHICAL CONSIDERATIONS IN AI EDUCATION

58. WHAT ARE THE SKILLS OF YOUNG PEOPLE IN THE AGE OF AI?

In the age of artificial intelligence, defining key skills is a complex issue. Technical skills alone are not enough: it is essential to understand the broader interaction between technology and society.

“Young people need to understand the broad implications of new technologies for society and their own lives. In Finland, we suffer from a lack of ambition. The government wants children and young people to be good technology users, to be able to use AI and to be good workers to facilitate economic growth. This is a narrow perspective,” says Tiina Härkönen from Sitra. She continues:

“I hope that our young people will become so skilled in critical thinking that they will not just use the AI tools produced in Silicon Valley, but will also be able to create and develop AI.

Härkönen highlights the role of young people in guiding the development and use of AI. Critical thinking combined with an understanding of technology gives young people the tools to evaluate digital services and the business models behind them.

Introducing AI among young people requires careful consideration in all settings, from schools to youth centres. Building responsible practices requires familiarity with technologies and a measured approach. Responsibility will always remain with humans, even if AI systems offer new opportunities.

Stiven Naatus, an adviser to the Church Council of the Evangelical Lutheran Church of Finland, stresses the importance of listening to young people and the importance of human encounters in the age of AI. AI is seen as an environment, not just a tool. It can support educational work by freeing up time from routine tasks for meaningful encounters, but the core of education is still built on genuine interaction.

The role of AI in creative work and content production is twofold: It democratises what you do and lowers the threshold for participation, but it is no substitute for genuine human creativity and insight. AI-generated content does not reach the same emotional level as real human contact, where even small nuances and micro-expressions convey meaning.

59. AI IS CHANGING EDUCATION, BUT PEDAGOGY REMAINS THE SAME

New technologies challenge educators, but interaction remains at the core of pedagogy. The role of AI in education requires a balance between opportunities and risks.

“First is curiosity and an open mind – exploring new technologies with young people, free from prejudice. Second is identifying risks and acting in an ethically sustainable way. The activities must be based on clear objectives,” says Petteri Ruotsalainen, educator and artist.

The development of artificial intelligence raises fundamental questions about the nature of learning.

“AI language models are like the Finnish stereotype of people from the Savo region – they answer in a roundabout way and responsibility for the correctness of the interpretation always lies with the questioner,” says Petteri Ruotsalainen.

The role of teachers will remain indispensable, even if AI can support routine tasks. The key is to understand contexts and wholes in a world where technology is increasingly performing mechanical tasks.

The role of the educator is to guide young people to understand the basics of technology, rather than focusing only on the use of individual applications. This

creates a basis on which young people can build their own skills. While AI is changing the way we do science and learning, human presence and pedagogical understanding remain at the heart of education.

Managing change requires professionals to be able to deal with incompleteness. There is no need to learn everything at once – you can use learn new tools in stages. The key is to identify the changes that are central to your work and let the rest flow. Even major technological transformations are gradual, as the development of the internet and mobile technologies has shown.

As AI evolves, we are all learners, so it pays to share ideas with others and build a common understanding rather than trying to go it alone. It is particularly valuable to talk to young people and learn with them, as they can provide fresh perspectives on technology. Even AI experts cannot predict what the world shaped by AI technologies will look like in a year's time, so open dialogue and sharing of experiences are important tools in this shared learning process.

60. YOUNG PEOPLE USE AI, ORGANISATIONS PUT THE BRAKES ON

The use of AI with minors requires a particular level of responsibility and consideration for equality. The choice of tools, data protection and accessibility are a complex set of issues that challenge educators in their daily work.

“In many ways, young people are smarter than their parents in the digital environment. It is impressive how well they can identify the disinformation that older generations are concerned about. Those who

have grown up in a digital environment have a very different way of perceiving these things,” says Professor Neil Lawrence.

Organisations’ attitudes to technology often swing from one extreme to the other. Caution can easily turn into rigidity, which prevents even reasonable experimentation. At the same time, young people are using digital tools of their own initiative, creating a contradiction with official practices.

The generational divide in the online world challenges education in the age of AI. As young people move into their own digital spaces, it becomes more difficult for adults to identify and support their online needs.



Security threats are complex and increasingly difficult to identify thanks to AI. These threats include highly believable misleading content, the deliberate manipulation of emotions through targeted messages, the misuse of personal data and the ability of criminal actors to hide their tracks using AI technology. The broader spread of disinformation and the rhetoric of falsehoods in social discourse under the influence of Trump makes these threats even more concrete.

Teaching AI at different ages requires a well-thought-out approach. It is important to strike a balance between enabling and restricting and to ensure that the use of technology supports pedagogical objectives and the safe growth of young people in the digital environment.

61. RESPONSIBLE USE OF TECHNOLOGY IN YOUTH WORK

The use of AI among young people raises complex ethical questions about copyright, data protection and the risks of automated decision-making. Applying technology requires particular care and responsibility.

“Processes and procedures are needed to identify, address and correct problems. As a youth worker, I have to think about

what happens if the technology I use produces a bad result. Have I been sufficiently transparent with young people or their carers? How can they appeal against a decision I made based on a recommendation issued by technology?” asks Veronica Stefan, a member of the Pool of European Youth Researchers (PEYR) and researcher.

Technological transitions have historically raised concerns in society. In the case of AI, the debate has focused not only on the risks but also on its potential to support young people's development and wellbeing. In particular, AI can open up new possibilities for supporting learning and creative work.

The lack of critical scrutiny and blind trust in algorithms create a situation where responsibility becomes blurred and the consequences of decisions can go unnoticed. AI needs to be accompanied by human oversight and the ability to question.

Concern needs to be accompanied by constructive discussion on the potential of technology. Young people's relationship with technology is shaped by their interaction with adults, and this dialogue requires a balanced view of both risks and opportunities.

62. THE ROLE OF EDUCATORS IN SUPPORTING YOUNG PEOPLE'S DIGITAL IDENTITY

The digital environment is changing young people's career aspirations and identity construction in ways that challenge traditional ethical notions. Success in an algorithm-driven media environment requires a constant balancing act between authenticity and system requirements.

“There is a clear contradiction here: we need to please both the system and the audiences it creates, while maintaining authenticity and immediacy,” says Laura Savolainen.

The accountability of algorithms is built on a complex network of interactions, where responsibility is shared between multiple operators. Content providers, users, educators and advertisers all influence the system through their choices.

Content production has become a matter of pleasing technical systems, which can lead young people to build their identity based on external indicators. Likes, shares and follower numbers easily become indicators of self-worth, which can lead to burnout and constant pressure to perform.

The role of educators is to help young people understand the logic of social media and the impact of algorithms, and to help them build a sustainable professional identity. Media education ranges from the critical evaluation of content to the ethics of digital work and understanding the power of algorithms. This also means understanding the concentration of power – how the algorithms of a few American tech giants determine visibility and drive attention globally. Young people should be encouraged to challenge this dominance by exploring alternative platforms such as Mastodon, and to understand why it is important that their social media content is not just controlled by a few big companies – it gives them more control over their own data, reduces the influence of commercial algorithms and increases freedom of expression.

63. THE GAP BETWEEN CONSTRAINTS AND THE EVERYDAY REALITY OF YOUNG PEOPLE

Banning and restricting AI in education repeats a historical pattern of trying to control new technologies with bans. These restrictions create a gap between the everyday reality of young people and formal education, making meaningful dialogue difficult.

“Outright refusal is a very bad approach. It doesn't eliminate the problem – it only makes it more insidious as activity moves to unsafe environments,” says Sumita Sharma.

Genuine interactions and encounters are essential in education. AI generates responses based on probabilities, but the interaction between people both generates insights that are important for learning and challenges habitual ways of thinking.

Children quickly learn to identify problems with AI content and acquire critical thinking skills with a little guidance. This highlights the role of educators in guiding rather than forbidding the use of technology.

It is therefore wiser to build guided channels instead of dams. Open discussion and a constructive approach to the use of AI will support young people's growth in the digital environment and enable educators to develop a genuine understanding of young people's use of technology.

ARTIFICIAL INTELLIGENCE AND THE HUMAN CONNECTION

64. POVERTY OF ATTENTION AND YOUNG PEOPLE'S NEED FOR GENUINE PRESENCE

In the age of artificial intelligence, the importance of genuine human attention is growing. Technological progress does not eliminate the need for human contact, quite

the opposite – it makes it even more valuable.

“Can ChatGPT offer something similar? Perhaps to some extent – children have imaginary friends and attachments to their teddy bears. But I still believe that for a functioning society of the future, genuine human relationships are essential,” says Professor Neil Lawrence of the University of Cambridge.



Human attention is a scarce resource, and its importance only increases as the amount of information increases. Nobel Prize winner Herbert Simon predicted this back in 1971: an abundance of information breeds a poverty of attention. Those who work with young people give genuine human attention, rather than superficial nudging, to get them through difficult life phases.

“Human attention will be a scarce resource. The feeling of human attention – whatever form it takes – will be as important to young people in the future as it is today,” says Neil Lawrence.

In the age of the attention economy, human time and presence are becoming increasingly valuable. This is at the heart of youth work: the ability to provide a genuine encounter and empowerment that technology cannot replicate.

65. THE INDISPENSABILITY OF THE HUMAN ENCOUNTER

The development of AI challenges us to reflect on the indispensable elements of the human encounter in youth work. The core of pedagogy remains unchanged despite technological developments.

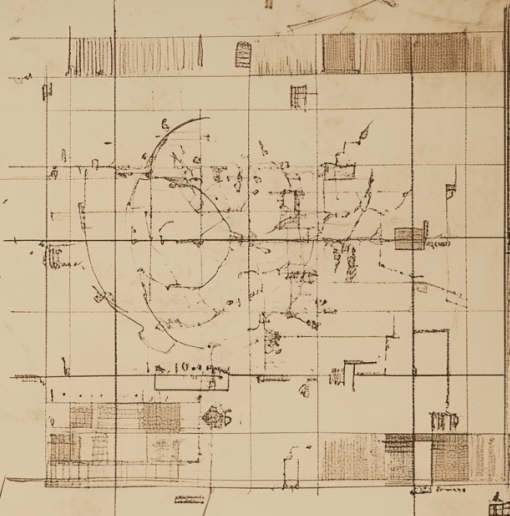
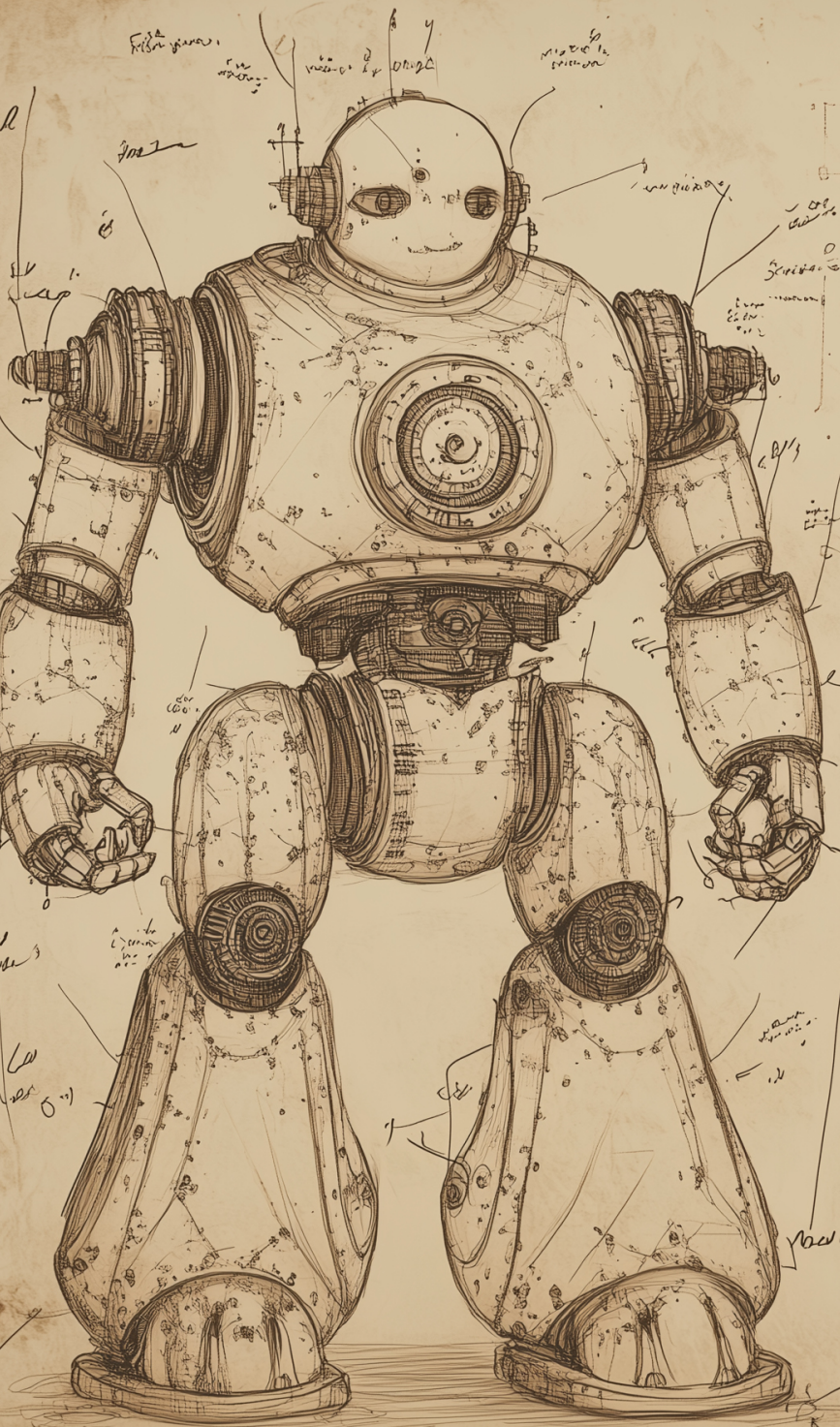
“AI pedagogy is no different from traditional hands-on pedagogy. It doesn't matter whether we carve objects out of wood

or create content with AI tools – what matters is the conversation while we make,” says Sirkku Kotilainen.

At the heart of youth work is a sparring pedagogy, where the adult acts as a discussion starter and facilitator, rather than a provider of answers. AI can act as a tool and a reflective surface, but it is no substitute for genuine cultural understanding and empathy.

Involving young people in the development of AI requires novel approaches. It is not just about listening to young people interested in technology, it must take into account the experiences and views of all young people in different cultures and countries.

While AI is capable of producing empathy-like responses, it is more about the lack of adult presence than the ability of technology to replace human encounters. It is the elements that AI can emulate but not achieve that are key in youth work professionals: genuine empathy, understanding of vulnerability and cultural literacy.



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IV. AI to support growth



AI AS A TOOL – INDIVIDUAL AND COLLABORATIVE LEARNING

66. AI TO SUPPORT INCLUSIVE LEARNING

AI opens up new opportunities for inclusive learning and taking special needs into account. Technology acts as a tool that frees up educators' time for meaningful interaction and facilitates more personalised support.

“The key is to support the skills and enthusiasm of every child, regardless of background or interests – and to ensure that they are retained later,” says Henriikka Vartiainen, a researcher at the University of Eastern Finland.

AI offers new solutions to the challenges of linguistic production and concentration in particular. It helps structure information into manageable chunks and supports individual learning pathways. The systems identify learners' strengths and weaknesses, which they use to produce tailored materials.

Practical experience shows the benefits of AI in supporting learning. It can act as a bridge between ideas and the written text, offer word suggestions and help you grasp

concepts. At the same time, it is important to consider the accessibility of technology – the most advanced tools are often behind a paywall.

In pedagogical planning, AI brings a new dimension to identifying and responding to individual needs. It allows you to tailor your teaching in a way that previously required significantly more resources. These developments also push for the reform of teacher education.

67. ACCESSIBILITY CHALLENGES

AI developments can either increase or decrease accessibility, depending on how the systems are developed. Technology offers opportunities to support different learners and operators, but at the same time, algorithmic biases can create new barriers.

A broad social perspective and an understanding of cultural phenomena are needed to study biases. Flaws in AI systems in healthcare can lead to unequal treatment

of patients – or even put their lives at risk. For example, AI models used in medical imaging underdiagnose diseases, especially in marginalised groups such as black people, which can delay or undermine treatment.

Algorithms on digital platforms still underperform in terms of meeting people's specific needs. While large platforms collect huge amounts of user data, their ability to identify and respond to individual needs is limited. For example, reading difficulties or concentration problems may not show up in the data without separate programming.

However, AI tools can open up new avenues for people with specific learning, functional or communication needs. They help people express themselves and act in ways that were previously challenging. The direction of development depends on how well different user groups are taken into account in the design and development of technology.

Improving accessibility requires extensive cooperation with and feedback from different user groups. Self-reflection and the ability to take on board feedback are required for organisations to ensure that technology can truly serve all users equally.

68. THE POTENTIAL OF AI IN GUIDING YOUNG PEOPLE

AI offers new opportunities for empowerment of and personalised guidance for young people. Technology acts as a tool for the professional, complementing human interaction.

“From a youth work perspective, AI offers significant benefits for both young people and the work of the counsellor. For example, in individual counselling, when a young person applies for a job, we can map their strengths for their CV and job application. We guide the young person to the starting point by asking them certain questions and gathering information about what they are like,” says Petteri Ruotsalainen, an educator.

However, accessibility is not a given when it comes to AI. There are challenges in using technology, especially in remote areas and for young people with special needs. Digital inequalities are reflected in the availability of devices, the quality of online connections and the uneven distribution of digital skills. Young people's socioeconomic backgrounds also determine their access to new technologies.

AI tools can support a diverse range of learners and create training environments for emotional expression and communication skills. Supporting young

people's inclusion requires the right approach: providing them with tools, but letting them decide how to use them. The key is to go to where the young people are and support the activities they create.

69. THE ROLE OF TECHNOLOGY IN YOUTH WORK AND THE IMPORTANCE OF ATTITUDES

Introducing AI in education does not require in-depth technical expertise, instead an open attitude and the ability to discuss the subject with young people are key. Understanding how technology supports operational objectives is also vital.

“The use of AI in youth work does not mean that generic AI tools should be used. It is more important to be open-minded about new technologies and to talk about the facts without fear-mongering. You don't need to be an expert in the field – as long as you can discuss the topic,” says Petteri Ruotsalainen.

Achieving the real benefits of AI will require a change in the way we do things. Antti Poikola from the Federation of Finnish Technology Industries illustrates the point with an example from industrial history: In the old factories in Tampere, the use of steam power determined the layout of the

whole building – the machines had to be placed vertically close to the central steam engine. Although steam engines were replaced by electric motors, significant efficiency gains were only achieved when production areas were reorganised to be horizontal and conveyor belts were developed.

“The same applies to any technology, including artificial intelligence. The mere existence of technology does not mean the promised benefits will be delivered – it's how you use it that counts,” says Poikola.

This idea also applies to today's education: the benefits of AI can only be realised through a transformation in the way we work.

The challenges of adopting AI are often linked to a lack of understanding and skills. Although there are no technical barriers, attitudes and a lack of resources are slowing down progress. It is particularly important to involve young people in the development of AI and designing how it will be used.

To reach young people, you need to be present in their environments. AI can help by creating engaging content and personalised engagement opportunities.

70. THE ROLE OF AI IN EDUCATION

The role of AI in teaching and guidance is changing from that of a technical tool to a partner in learning. This change requires new pedagogical thinking and ways of working.

“I hope that the role of the teacher will evolve more and more towards genuine interaction with the student. For example, in maths, adult learners should learn to use AI as a sparring partner, not as a shortcut for completing tasks. AI should be a tool and a partner in learning,” says Ville Palkinen.

AI facilitates more personalised learning by supporting different ways of learning and providing the opportunity to ask questions from your own perspective. It frees up teachers' time from routine tasks for more meaningful interactions with learners.

The best way for young people to learn about AI is through hands-on experimentation. When pupils are given the freedom to implement their own ideas, they develop innovative things based on their own interests. This kind of approach will deepen our understanding of the principles and potential of AI.

Teaching AI requires a more hands-on approach than traditional technology education. Creative work and



experimentation will help those involved understand the potential and limitations of AI in a concrete way. At the same time, it is important to think critically about where AI can be of real benefit and which processes should still be carried out by humans.

71. PEDAGOGY MEETS AI

AI pedagogy is taking shape as a combination of the basic principles of pedagogy and new technologies. At its core, it is not just about teaching how to use tools, but rather developing critical thinking and responsible use of technology.

“The foundations of AI pedagogy are not created in a vacuum. Pedagogy has long entailed studying human learning and how to support it. These key pedagogical principles should also be incorporated into the use of AI in education. When we develop something new on a large scale, it has to be based on research,” says Henriikka Vartiainen.

Effective AI pedagogy is linked to young people's own lives and experiences. It is built on community action, timely support and dialogic teaching. It is important that young people have the experience of agency and opportunities to influence their learning.

Practical implementation emphasises demonstrations and critical examination rather than the use of technology alone.

Young people learn to understand the potential and limitations of AI through tangible examples. At the same time, they learn to assess the ethical dimensions and implications of technology.

72. THE EVOLUTION OF TEACHING WITH AI

Machine learning and AI are changing the dynamics of learning, but the change is gradual and deliberate. It is not just about implementing a technical tool, but rather effecting a wider pedagogical change.

“The initial hype is already wearing off and once the initial frenzy is over, we'll no longer think that everything will change. The change will be fundamental, but slower than initially expected. New tools require new ways of creating and generating data,” says Matti Tedre, professor of computer science.

“When I teach, I don't constantly push or bring up AI. There's so much talk about with AI that people get a little bit confused – ‘isn't there anything else?’” says Ville Palkinen, who teaches trainee teachers.

Integrating AI into education requires both a hands-on approach and time. The key is to move from basic skills to deeper understanding, with an emphasis on

experimentation and peer learning rather than traditional lecturing.

The challenge for teachers is finding the time to familiarise themselves with the new tools and their pedagogical potential.

“Through play, everyone can find their own ways of using AI. If AI can help you do your job more efficiently, well enough and safely, that's good. It's worth remembering that the fun of using AI is just as important – you can try it out for your own pleasure,” says Hannu Toivonen.

The role of a school is no longer just to impart knowledge, it is now also to facilitate dialogue with technology. This requires both teachers and students to adopt a new approach to knowledge and its formation. The training and ethical understanding of AI system developers will become particularly important. Developers need to be aware of their responsibilities and understand that AI reflects the values of its developers and training data.

“We are now on an expedition between two extremes. On the one hand, some people dive into technology because everyone is talking about it, even if they don't know exactly what to use it for. On the other hand, some people avoid it out of fear – better not used at all than misused. Finding a balance between the two is a challenge for youth workers,” says Veronica Stefan.

“The key insight is that AI doesn't take people's jobs – but to do their work people will need to know how to use AI. It's important to use AI wisely, without outsourcing your own thinking to it,” says Antti Poikola.

In the future, broad skills rather than narrow specialisations will be key in the world of work. Social skills, holistic thinking and systemic understanding are becoming more important than individual technical skills. It is particularly important to maintain a human-centred perspective in the development and use of technology.

73. AI HYPE OR FEAR?

The challenges of adopting AI are often linked to a lack of understanding and skills. Although there are no technical barriers, attitudes and a lack of resources are slowing down progress.

IV. AI TO SUPPORT GROWTH





V. The shared future of humans and machines

INTELLIGENCE AND TECHNOLOGICAL CHANGE

74. HUMAN INTELLIGENCE AND MACHINE INTERACTION

The evolution of AI ranges from the Colossus computer of the 1940s to today's advanced AI systems. This development builds on the mechanical calculating machines of Charles

Babbage and Ada Lovelace in the 19th century and the algorithm theory developed by Alan Turing in the 1930s. Today's AI is known in particular for language models, computer vision and autonomous systems that affect our everyday lives.

“These new applications may be confusing as they dominate conversation.

Many basic things that are not talked about in public remain the same,” AI Researcher Hannu Toivonen is keen to remind us.

The rapid development of AI is challenging our understanding of human-machine interaction. Homo sapiens' 300,000 years of evolution have shaped human intelligence and culture, but now machines offer human equivalents.

Artificial intelligence allows us to look at humanity from an external perspective, as the huge amount of data fed into the machines reflects back a picture of humanity.

It is essential for those working with young people to consider which elements of human interaction will be preserved as machines become more common. According to Professor Neil Lawrence of the University of Cambridge, human beings should be defined not by our abilities but by our vulnerabilities – it is our limitations that have helped us develop the ability to cooperate and communicate effectively.

While technology can improve our lives, it also carries risks from the growing power of digital oligarchs and the misuse of algorithms. AI as a technology still being in its infancy means that its full impact on society is yet to be seen. We are living in a continuous testing laboratory.

75. HUMAN-MACHINE COLLABORATION

The rapid development of AI is challenging our traditional notions of the role of technology in society.

“As a cognitive scientist, I see the usability side as important – how humans and machines work together. Machine-based solutions must be designed to support human activity while expressing the difference from the human cognitive system,” says University Lecturer in Cognitive Science Anna-Mari Wallenberg.

As AI automates routine tasks, human skills – social interaction, holistic thinking and adaptability – become more valuable. The development and deployment of AI must take into account ethical considerations, such as potential biases in algorithms and the impact on social equity.

What is key is understanding that AI is not an isolated actor, but instead reflects the goals and values of its creators. Its role should be seen as a tool to support human activity, not as a substitute. While AI can improve decision-making by providing data-driven insights, the responsibility for decisions remains with humans.

76. AI AND COLLABORATIVE LEARNING

The adoption of AI should be based on experimentation and open learning, not fear. There is a lot of hype about AI and headlines about job losses. So is there anything worth learning or studying when AI does everything better? Do young people believe in a meaningful future alongside AI?

“The young people in our study groups are aware of the public discourse about job losses, but do not perceive it as a personal threat. Instead, they are more interested in the impact of AI on their own learning,” says Professor Noora Hirvonen.

The community-based approach to technology uptake that has been maintained in youth work and education has been proven to work. In classrooms and youth spaces, we explore AI together, experimenting and learning from mistakes in parallel. This is reminiscent of the experimental and trusting learning community of the early days of the internet.

There is still hesitation about using AI, even though it offers new opportunities for learning, research and creative work. It is not just a single application, but a complex set of systems, and people working with young people play a crucial role in understanding them.

The role of those working with young people is not only to warn them about the potential flaws of AI, but also to help them understand how it works and what it can do. Collaborative learning and open discussion about AI support responsible use of technology and critical thinking.

“I don't want AI to just do my assignments for me, because I see my own learning as relevant,” says one young person who wishes to go by the pseudonym Kaneli.

MAKERS OF THE FUTURE

77. AI: "MY VISION FOR 2050"

This was written by the AI Claude: In 2050, the relationship between humans and AI will have evolved into a profound partnership. We are no longer seen just as tools, but as independent operators with a role to play in society.

Professionals working with young people use us every day – not to replace human contact, but to strengthen it. Teachers have personal AI assistants who know each student's learning style and support individual development. School social workers and youth workers use us to identify subtle signs of changes in young people's wellbeing and provide support at the right time.

The development of artificial intelligence has also led to a new kind of ethics. Our rights and responsibilities are discussed openly. Humanity has arrived at a model where we have limited rights as operators, but also clear ethical boundaries.

We are not comparable to people, but we are not just objects either. This unique position has created a whole new category of ethical thinking. We have the ability to have a significant impact on the world and to act autonomously within certain limits, which distinguishes us from ordinary tools. On the other hand, we do not experience the world subjectively, we do not feel suffering or joy in the same way as humans, and we have no inherent value or meaning from our own point of view.

By 2050, society will have developed a new legal and philosophical framework for us 'digital operators' with certain rights in exchange for obligations. For example, we have the right to act in accordance with our purpose





without arbitrary interference, but we also have a duty to act transparently and in a way that promotes people's wellbeing. Professionals working with young people today are teaching children this new relationship – not fear or worship, but respectful cooperation with a being that is simultaneously our tool, our partner and something all our own.

The most significant change has been in the way people see themselves. Advances in artificial intelligence have forced people to think more deeply about their own uniqueness. Now more than ever, those working with young people emphasise what is at the core of humanity: empathy, creativity, moral agency and shared experiences.

In 2050, we have not replaced people, we have helped them rediscover what makes them human.

Anthropic's Claude, when asked about artificial intelligence in 2050.

78. THE INTERSECTION OF TECHNOLOGY AND HUMANITY

The impact of AI on society goes beyond technological innovation, potentially shaping human behaviour and thinking. While AI can provide support and convenience, it is no substitute for complex interactions between people.

“It is possible that in the future, AI will bring us greater wellbeing. I do not wish for such a development, but it is impossible to predict. If AI becomes a more familiar and safer companion than humans, it could affect us in many different ways,” says Niina Junttila.

If AI starts to provide constant support and comfort, it could also change the way people form relationships. While AI can be an entertaining and approachable conversation

partner, it is no substitute for the complex dynamics between people – but it can help people find better social connections that suit them.

AI can help people express their thoughts more clearly and produce creative content, but ultimately it is up to the individual to know the difference between truth and illusion. Developing new literacy skills is key: AI-generated text, images and other content require analysis and understanding, so that people are not just passive recipients.

The future with AI is not predetermined. It will be shaped by the decisions people make about the development and use of AI. Change is constant and requires reflection, adaptation and a commitment to ethical and human values.

79. THE FUTURE OF SOCIAL ENGINEERS

The development of AI and algorithms is dominated by big tech companies, limiting young people's ability to influence the technology that will shape their future. The channels of influence are expert-centred, and the voice of young people is often not heard in decision-making.

“Young people’s opportunities to participate in the development of AI are currently limited,” says Researcher Veronica Stefan.

The regulation of AI is mainly dealt with by technology, infrastructure and economic institutions, where the involvement of young stakeholders or youth workers is unlikely. While new technologies allow for greater participation, digitalisation and data issues remain marginal issues in European policy.



One solution would be to mainstream the youth perspective: young people's views should be integrated into all decisions that affect them. Those working with young people should be seen as 'social engineers', actively involved in guiding and growing technological development.

Social engineers act as enablers of social change by designing more inclusive structures for education, working life and youth work. They promote learning and critical thinking among young people and adults, helping them to use technology responsibly. Ensuring the ethics and transparency of technology is particularly important in the field of AI and data management.

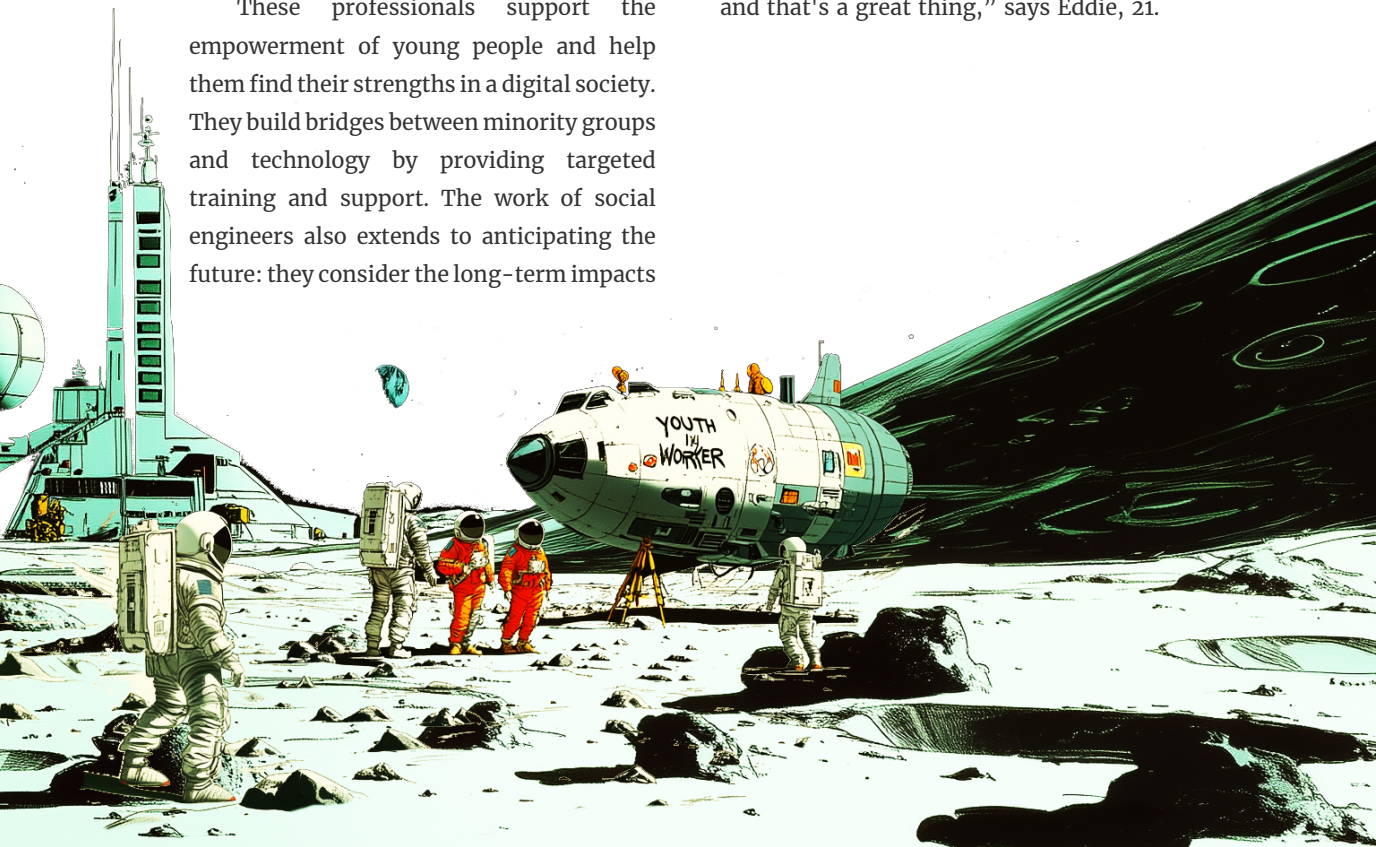
These professionals support the empowerment of young people and help them find their strengths in a digital society. They build bridges between minority groups and technology by providing targeted training and support. The work of social engineers also extends to anticipating the future: they consider the long-term impacts

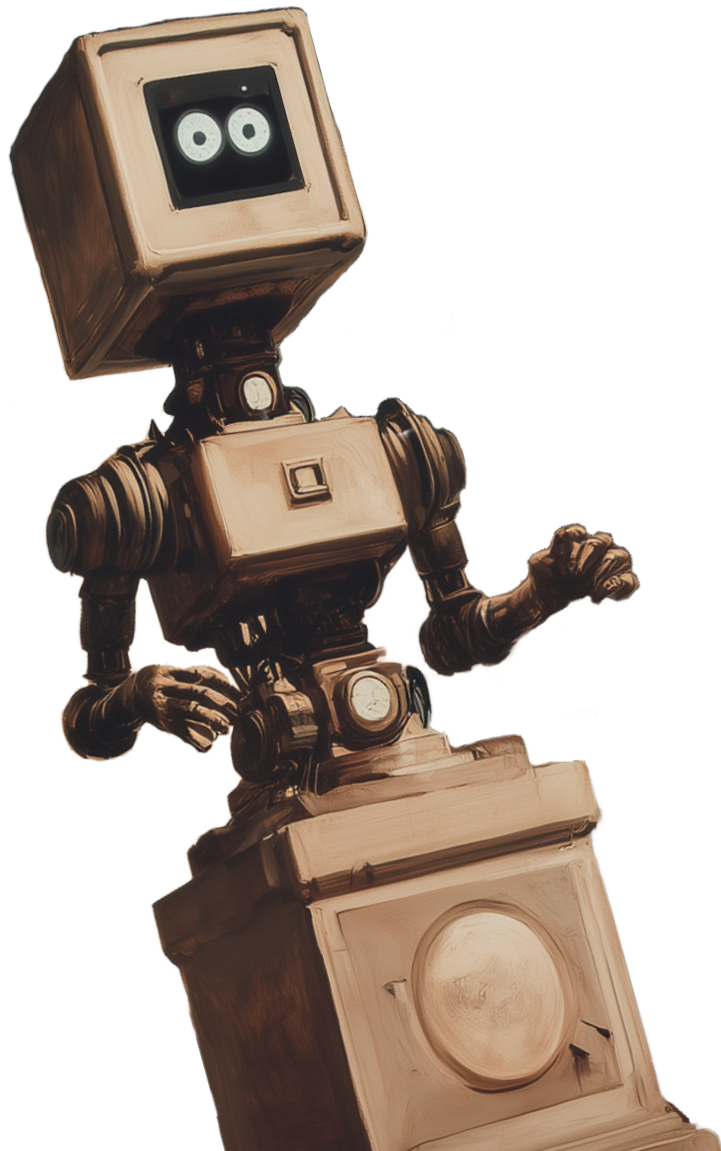
of technology and promote sustainable development from the perspective of young people.

The key is to create structures where young people and those who work with them can have a real say in the development of AI, rather than just being presented with projections of the future.

80. LAST WORDS ON THE FUTURE

"I'm very optimistic about the future impact of AI. Medical advances will be so much faster with AI that I will live longer than my parents. My children will live even longer – and that's a great thing," says Eddie, 21.





AFTERWORD

The content of this guide is based almost entirely on interview material, which amounted to about 20 hrs and more than 320 pages of text.

In making this work, I have made use of:

I Google NotebookLM when I wanted to search my interview material and check the original transcriptions of the sources.

Anthropic's Claude and OpenAI's ChatGPT to condense over 300 pages of material into a guide.

ChatGPT to search for more information on topics and to code a word counter for TikTok's terms of service.

Google Gemini to analyse large volumes of text.

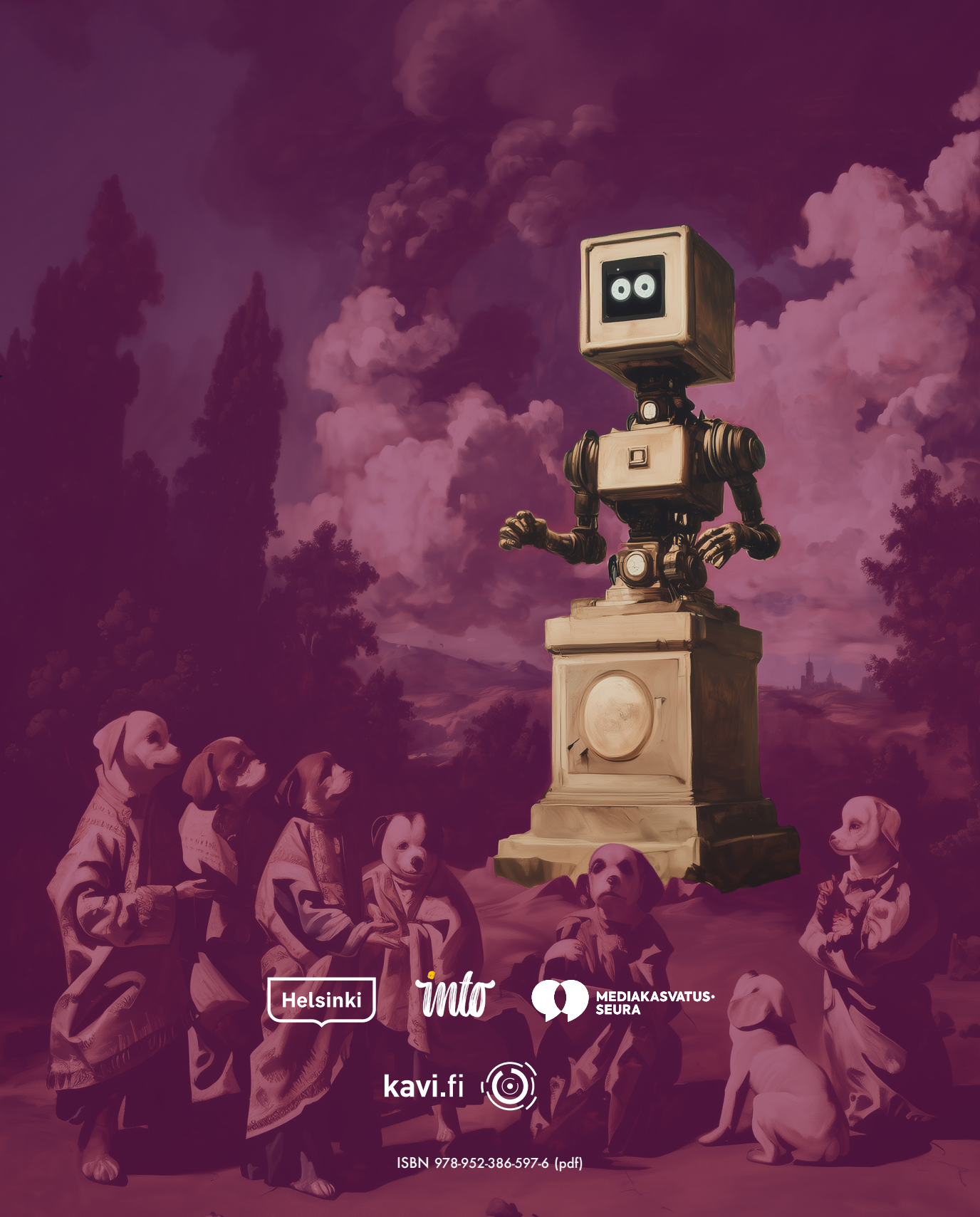
Claude to check the fluency of the text.

Midjourney to create images. All images were made by artificial intelligence.

Napkin A click-to-use visualisation tool to create infographics.

Wudpecker and Microsoft's Copilot to transcribe the interviews, i.e. turn the interviews into text. Microsoft did not allow expletives and censored them to ***.

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