The Future of Living with AI – a statement

Panel Discussion

Prof. Dr. Christoph Schommer

University Luxembourg
Department of Computer Science, FSTM
Maison du Nombre, L-4364 Belval-Université

Email: Christoph.schommer@uni.lu
www: ilias.uni.lu

20 October 2021

Organised by EUNIC – EU National Institutes for Culture

Invitation by the Luxembourg Embassy in Brussels, Belgium
Bozar Centre for Fine Arts, B-1000 Brussels, Belgium

Under the patronage of *slovenian-presidency.consilium.europa.eu/en/*

Keywords: *Artificial Intelligence (AI), Intelligent Assistants (IA), Usefulness, Future aspects.*

Good morning!

This event yesterday and today is taking place under the motto "The Future of Living with AI" and aims at a responsibility to look at the future with its digitalisation in general and smart systems.

I think such a discussion is important and I am honoured to be here today.

I would like to start with Isaac Asimov, a former American writer and professor at Boston University, and his book "Reason", published in 1941, which is about a two-man spaceship crew and Cutie, a robot who, from a certain point on, perceives human commands as inferior and claims (loosely based on Descartes) that he himself exists because he thinks. Cutie also argues that he is superior to humans because, for example, he does not need sleep breaks, is less prone to errors, and can also perform executable tasks more reliably.

So far it is a story, a science fiction story.

But when we read "Reason", we learn a lot more: the two astronauts first try to dissuade Cutie from these thoughts and to convince Cutie of reality (that is, and more precisely: the perceived

reality of the astronauts). But all the arguments do not help and turning Cutie off also fails. The situation comes to a head when a life-threatening situation arises that threatens to harm not only the spaceship, but the entire Earth. The two astronauts eventually realise that despite all the dangers and problems with Cutie, all the machines still work perfectly and that both the spaceship and the Earth still exist. So, they come to the realisation that Cutie, although he was not aware of it, had been strictly following one rule all along: people must not come to harm. The astronauts conclude that they are in good hands and need not do anything for the rest of their service, so they are superfluous.

So, the question that arises is: will we, who live in the 'here and now' and are not part of this science fiction story, also be superfluous at some point?

Or, in Cutie's logic: will our world and our lives soon be more and more dominated by Artificial Intelligence and will only the AI-engineers be needed, that is, the "gods" who develop the systems, who maintain them and who continue to convince society of their necessity? So that we humans remain well "looked after" and life becomes even safer and we all feel comfortable the whole day?

Note: that humans do not come to harm is the first Asimov's Law. And, the fact that Cutie does not obey human orders does not contradict the second Asimov's Law, because in Cutie's logic an Artificial Intelligence is more "intelligent" than we humans; hence the disregard for human orders is due to the task of protecting humans from endangering themselves.

But let us come back to our world today and allow me at this point to use the term "intelligent systems" from now on instead of the term Artificial Intelligence. Because that is more accurate: what everyone in society and most of the industry world is talking about today as Artificial Intelligence is ultimately "only" something that is capable of performing a certain task.

The winner of the Science Slam of the "Wissensstadt" Berlin 2021 is a friend and colleague of mine. He is a professor at the Dahlem Center for Machine Learning and Robotics at the FU Berlin. He gave a speech – with the support of his two 9-year-old daughters – about "Abstract and rational thinking, self-reflection, social interaction". In his talk, he enumerated what distinguishes Artificial Intelligence from "intelligent systems": the "intelligent systems", he said, "do only" solve specific problems, such as a robot that explores the surface of the moon or a car that indicates how far you can still drive with the current fuel in the tank. His daughters consequently said that in their understanding "Artificial Intelligence is something that can also tell jokes, recognise feelings, hold a conversation on its own and not just solve maths problems, in other words, everything that a human being can do". For my colleague, this is proof that even children develop a sense of what constitutes intelligence and what does not.

So, shouldn't the title of today's symposium rather be: "The future of living together with IA" where IA stands for 'intelligent assistants'?!

Let's take a closer look with a few examples:

a) intelligent assistants in modern vehicles take care of us with precisely computed information, such as calculating our current position and navigating to our destination by including current traffic jam reports. In addition: the assistant keeps the vehicle in its lane by temporarily taking over the steering, it controls the starting of the car by checking whether the human being is fit to drive (keyword: alcohol) and presents much more information regarding the vehicle's status with statistical numbers. Of course, it is all very useful! And, after a certain point, however, you get used to it and do not want to do without this usefulness. But, at the latest when a yellow light comes on, constantly prompting us to have the next inspection within the next X days including blinking, or when the assistant "recognises" tiredness at the wheel and suggests that we finally stop and take a break, don't we begin to ask ourselves who is actually serving whom here? And, who sets these parameters? The AI engineer? Myself, unconsciously? Fortunately, there are no punishment yet, such as small electric shocks if the recommended exit is not taken, or a higher insurance policy if the maintenance interval is not followed exactly.

b) Or, let's take the field of art. Writing poems, painting pictures or composing music, especially through techniques based on deep learning, are stimulating more and more artists to use them for their creativity. I think that is a good thing and I hope that such creative developments remain transparent. Eventually, we should think not only of "Made in Europe" or "Made in China" but also of "Made by Human" or "Made by Bob, the intelligent system".

Examples:

- In 2015, Alex Mordvinsev and the Google Brain AI research team published some fascinating results. After training to identify objects based on visual cues and inputting photos of skiers and randomly shaped objects, their programme began to produce digital images reminiscent of the combined imaginations of Walt Disney and Pieter Bruegel the Elder. Among them were a hybrid "pig snail", a "camel bird" and a "dog fish". This was a new art form called "inceptionism", named after the "inception" algorithm, in which a neural network gradually zooms in on an image and tries to see it in the context of what it already knows. The Inception algorithm is based on a convolutional neural network to assist in image analysis and object recognition; it was developed as a module for GoogleNet.
- Taryn Southern is a pop artist, has worked with several AI platforms to co-produce her debut album "I AM AI" in 2017. Her single "Break Free" is a "human-AI" collaboration as she explains. She says: "using AI, I am writing my lyrics and vocal melodies to the music and using that as a source of inspiration. Because I am able to iterate with the music and because it gives feedback and parameters and because I can edit as many times as I need, it still feels like it is mine."
- Xander Steenbrugge is an engineer from Ghent, Belgium. He has developed an AI system that creates visualisations in time with music, achieving mesmerising results. The piece is

part of the project called "Neural Synesthesia", which is designed to use music to create visualisations in a number of different ways. Steenbrugge makes it clear that he does not create these works, but that he brings them to life together with his AI models.

- OBVIOUS, which is a collective of researchers and artists, who work with Deep Neural Networks to explore the creative potential of Artificial Intelligence in Arts. In 2017/18, OBVIOUS fed 15000 classical portraits into a generative, adversarial network (GANs) and let this Deep Learning technique autonomously create a series of new portraits. From these, they selected some by themselves and thus "founded" the so-called "Belamy Family". The presented family tree is, therefore, completely fictitious. The painting of "Edmond Belamy" was finally auctioned and sold at Christies' for more than 400,000 US dollars, almost twice as much as other auctioned paintings by Roy Lichtenstein and Andy Warhol together. However, not everyone, who knew its artificial character, considered the painting "Edmond Belamy" as to be art. For Pierre Fautrel, co-founder of OBVIOUS, however, there is no doubt as he explains: "even though the Generative Adversarial Networks have created the painting artificially, it is up to us (humans) to decide to compute and to print it on canvas".

Most recently, however, the head of a large German telecoms company proudly informed us - via a major German newspaper and various social networks - that Ludwig van Beethoven's 10th Symphony could finally be composed with the help of a Deep Learning solution. Interesting. But what bothers me a lot here is the implicit general assertion: "the 10th symphony" and not "a version of the 10th symphony". I mean, many of my scientific colleagues and I could do the same: we take Beethoven compositions as underlying data and train our system and then apply it to our version of the 10th symphony. With our parameters, our data, our algorithmic concept and our creativity. Then we already have several 10th symphonies and we could organise a concert: "10 times Beethoven's Tenth".

c) Last example: our home. Highly secured by cameras, digitalisation here and there with connections to emergency services and the police, switching the reading lamp on and off even when we ourselves are in the Bahamas. A few years ago, I attended a lecture in which the speaker reported on an intelligent carpet. This carpet was full of sensors and it was able to recognise a patient's falling over as an emergency situation and call the emergency services and the police. One vision called for by Eric Topol, director of Scripps Research and one of the leading minds in AI and medicine, is to treat patients at home. Imagine someone falls over, the carpet calls the emergency, and Bob, the robot, does the emergency care on the spot! This is absolute madness! And a former colleague at the University of Luxembourg told me that at a project meeting with partners from industry, the fully automated shutters equipped with sensors on the windows suddenly enveloped the room in complete darkness and all the participants could no longer even find their way to the light switch.

At the moment I am writing these lines, I am sitting in one of the University's Webex rooms and every time I move, the giant screen starts honking softly, accompanied by the texts: "Hello" and "Tap the home button, or start an activity from the Webex app". It is annoying!

Ladies and gentlemen, with all this usefulness and the associated goals and visions, one might get the idea that it is more about functioning digitised systems that we humans have to fit into. I can assure you that the shutters will always darken the room as soon as the sensors report too much brightness. You don't stand a chance in the office! Maybe, it should not be "I think, therefore I am", but "I surrender to technology, therefore I am".

Anyone, who does not own a smartphone or is not able to use apps and QR codes today, is simply lagging behind in many parts of life. A life 'without' is virtually no longer conceivable! And, if modern technology is progress, then perhaps it is double-edged progress, or at least progress for the younger generation that is growing up with it.

It also seems to me that many people are not really aware of the implications of using intelligent assistants. It is consumed. And, if something does not work out or we do not like it anymore, then we just take/buy something else – or even more, something else is suggested by such an intelligent assistant.

Example: first my favourite actress as the heroine in a disaster film, then - at the suggestion of the streaming service and on the basis of my created profile - a love story with the same leading actress. That is all I have to do, it goes by itself! Well, at some point the TV switches off, too. I am already asleep by then. For the system, however, that means: inactivity.

At a conference of the German Ethics Council in Berlin two or three years ago, a colleague from Augsburg spoke about a study on the subject of care for the elderly, involving healthcare robots and inmates of an old people's home. She mentioned that after the end of the trial period, the participants were asked how they felt about this time. There was (at least) one woman who said that she liked the project with her robot very much, but not because of its functionality and care, but because every two days the young female students came to maintain the system"...

So, what does the future look like?

In a survey, I conducted about a year ago with some of my students as well as with some of my colleagues, a total of 116 responded as follows to the question of whether AI (in the sense of "intelligent systems") was for or against humanity. 14 of them were very pro, 21 were almost pro, 63 saw AI as a double-edged sword, 13 were slightly against, and 3 were very against. Yes, and 2 people did not care at all. Even though it was not a representative survey, there is now a healthy balance in terms of a difference of opinion. That is good for now!

It is difficult to give a prognosis. A usefulness is certainly good. But, too much usefulness or too little of it is not, in my opinion. Too much means: one relies on it too much and no longer knows alternatives. If you do not have an internet connection, and, a navigation with your mobile phone

does not work, you will possibly get lost. Conversely, you may also get lost, but you might meet new people (by asking for the direction) and be able to cross the road safely.

No matter what happens. What is important for me is a transparency of these assistants and – from the point of view of the end user – the insight to educate oneself further or to always try to understand the 'things behind'. The worst thing is to remain in the dark.

Of course, incredibly powerful technology is an advance that we (not only as Europeans) should not miss. After all, we want a world that is more sustainable, safer and more ethical. But new technologies - like intelligent assistants - should be there for people, not the other way around. New technologies should be transparent and, as things change, adaptable. Human's level of education should be central and we the humans should have the choice to use new technologies or an alternative. Technology should be tested in the long term and not developed exclusively by engineers. One day, maybe, we also need something like the Hippocratic Oath.

As for Cutie and the autonomy of such an AI: personally, I think that will eventually come true.

Already today, we can no longer say with certainty whether the voice on the phone is not a machine after all. To pass the Turing Test is within reach. I am not afraid of it, even if the scenarios with killer robots keep coming to mind. I am much more afraid of people who disregard the basic ethical and moral principles of our existence for the sake of power and economic advantage.

I look forward to your questions.

Thank you very much!