

PRESSE RELEASE



New publication: Yearbook Discussing Technology: AI in Practice AIT science communication contribution to the Alpbach Technology Symposium

The yearbook for the Alpbach Technology Symposium 2022 focuses on practical applications of artificial intelligence (AI). The succus of the experts: AI methods are a valuable tool in many areas, but they are not a panacea. And there are areas, such as safety-critical or people-related applications, where AI should be handled very carefully.

Artificial intelligence (AI) has long since ceased to be a purely future-oriented topic. Rather, AI methods are permeating more and more areas of our lives and work. Moreover, they enable major advances in science, research and technology development. What's more, the technology is urgently needed to cope with the accumulation of shocks, crises and upheavals we are currently experiencing. "In view of the planetary dangers and challenges, we urgently need appropriate technological developments and innovations to cope with them and ward off further dangers - so that it does not become, as Martin Rees meant, our last century," said Hannes Androsch on Wednesday at the presentation of the Alpbach Technology Symposium 2022 yearbook, of which he is the editor as a long-time doyen of the symposium.

The theme of this yearbook "Discussing Technology", which is already being published for the sixth time, is "AI in Practice / Applying AI". Specifically, it is about the application of AI methods in certain domains and for specific problems (in technical language "vertical AI") - in contrast to algorithms that can be used in many domains ("horizontal AI") and go in the direction of an "Artificial General Intelligence" (AGI).

Where and how AI makes sense

"In the yearbook, we want to show in which areas and for which questions AI methods can be usefully applied and what benefits can be derived from them in the areas of research, technology and innovation," explains the scientific managing director of the AIT Austrian Institute of Technology, Wolfgang Knoll, who is co-editor of the yearbook together with his colleague on the AIT management board, Anton Plimon. This contribution by AIT Science Communication represents the scientific prelude to the Technology Symposium and will be distributed free of charge to all participants; it will also be available for free download at www.ait.ac.at/efatec.

Variety of methods

"When people talk about AI, they usually mean machine learning methods. But this is a truncated view: There are very many AI methods, all of which have certain strengths and weaknesses," said Martin Kugler, science communicator at AIT, who edited the yearbook. Numerous examples are used to show where we currently stand in the application of AI in various domains. This ranges from useful tools for our everyday lives, to applications in healthcare and urban planning, to language algorithms and the development of (semi-)autonomous machines that work closely with humans. All of these examples, which come from the laboratories of AIT and other domestic research institutes, among others, make it clear how a wide variety of AI methods can be applied in a beneficial way, where their limits lie and in which areas it is better not to use them.

Caution with safety-critical applications

One problematic point, in particular, is applications where security is a concern - because AI systems only ever provide probabilities, AI researcher and data analyst Ross King (AIT) points out: "Security does not go together with probability statements. I am very skeptical about safety-critical applications: You can't completely replace humans here." The fact that the possibilities of AI should not be overestimated is also emphasized by automation researcher Andreas Kugi (TU Wien and AIT). "You have to use the possibilities of the new methods in a targeted way. But you have to be careful and not regard every new method as a panacea."

AI: Useful tools in the toolbox of methods

In research, at any rate, AI methods represent valuable new tools in the tool box of existing methods, Kugi and King point out in unison - ranging from the automatic detection of fake news or cyberattacks to the development of robots to repair defective devices. AI is not an end in itself, but rather a tool for Martin Grödl and Moritz Resl, known as the artist duo "Process - Studio for Art"

and Design", who are currently Artists in Residence of the ARTTEC program at AIT: They use AI to implement their artistic ideas in an innovative way.

Science researcher Helga Nowotny also sees that fantastic new possibilities are emerging through AI methods: "We are only at the beginning of the potential of AI. We first have to learn to make better use of the enormous amounts of data we now have at our disposal," says Nowotny. She expects to better understand causal relationships and thus learn to recognize unintended consequences of our actions earlier and act differently accordingly.

Weighing up privacy and benefits

There is always resistance to the introduction of data-based AI systems. To find a balance in the dilemma between privacy and benefits, urban and mobility researcher Katja Schechtner (MIT, OECD) suggests "risk-weighted regulation." Moreover, one must always ask whether an automated system can do something better than a human; if not, then one should not install a new system. Or as Andreas Kugi puts it, "Not every new broom always sweeps better everywhere."

Alpbach Technology Symposium 2022 Yearbook (Discussing Technology):

Hannes Androsch, Wolfgang Knoll, Anton Plimon (eds.) KI in der Praxis / Applying AI. ISBN 978-3903-207660, Verlag Holzhausen, 192 pages Free download: www.ait.ac.at/efatec

Alpbach Technology Symposium 2022

After two years in which the European Forum Alpbach was held virtually or hybrid due to Corona, the Alpbach Technology Symposium, which is hosted by the AIT Austrian Institute of Technology and ORF Radio Ö1 as part of the Forum, will take place again this year as a presence event: From August 25 to 27, two full days with 40 hours of high-level debates in more than 20 plenary sessions, workshops and content partner sessions await the participants under the general theme "The New Europe". The topics of the discussions follow the major challenges facing humanity - from info- and cyberwar to the energy crisis and vulnerable supply chains to RNA-based medicine of the future. Other topics discussed will include the geopolitical consequences of technologies, the role of the arts in transformation, climate protection in mobility and industry, fake news, microelectronics, bioeconomics, light metal technologies, the merging of humans and technology, and artificial intelligence. The program will be complemented by numerous networking and community events - many opportunities for the technology community to meet for personal exchange.

Further information and tickets:

www.ait.ac.at/efatec

www.alpbach.org

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