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Lab42 – The road to intelligent AI

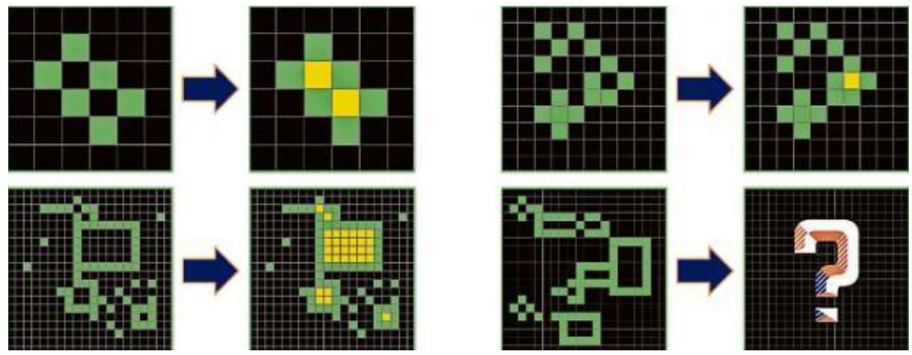
Switzerland's youngest AI-lab reports its first success

Current AI is not intelligent

Lab42 aims to create human-like artificial intelligence (AI) and thereby propel Switzerland as a world leader in the development and implementation of AI. "It is important to us to contribute to the competitiveness and innovative ability of the Canton of Graubünden," explains Rolf Pfister, Head of Research at Lab42. The topic of AI has been controversially discussed since the end of last year with the publication of the chatbot "ChatGPT". ChatGPT astonishes through its ability to write very detailed and human-like texts automatically, to explain complex issues with ease, to improve codes and to do homework. Since the system is based on statistical "big data" methods without understanding the underlying contents, ChatGPT also produces misleading answers. For instance, in the case of logical questions or the creation of research publications: Even though the algorithm has been trained on 48 million scientific publications and the generated texts seem to make sense, the content is often fictitious. There are references cited that do not even exist. "We need AI that is really intelli-gent, that can reproduce language and also understand and assess content," emphasises Pascal Kaufmann, founder of Lab42.

A world record for Switzerland and an AI-Medal for Davos

For intelligence to be artificially replicated and used for practical applications, completely new approaches are needed. Lab42 therefore re-launched a global competition last atumn: the ARC Challenge, which was first launched by AI pioneer François Chollet back in 2019. ARC tests the basic logical principles of thinking and thus quantifies an important part of anthropoid intelligence. Participating teams were challenged to develop a new algorithm that can solve as many ARC tasks as possible. Humans manage to solve 85% of ARC tasks on average. The best algorithm from 2020 achieved only 29% with a combination of existing solutions. A total of 118 teams from all over the world registered for the Lab42 Challenge. The winners were announced on 19 January: a student from ETH Zurich took first place in the ARCathon. Fortunately for Graubünden: The 2nd place went to Mirus Software AG in Davos. The 3rd place went to a Danish iOS developer. Lab42, in collaboration with the first-place winner, was able to raise the three-year-old ARC world record above the 30% mark, also by combining existing solutions.



Examples of ARC tasks that seem trivial to humans but unsolvable to computers.

The AI challenge goes into the next round

As a next step, Lab42 plans to extend the ARC challenge, because only when an algorithm can solve the ARC tasks as well as a human can these algorithms achieve a real breakthrough in science and society. In addition, Lab42 is launching more compe-titions with partners to further advance the creation of human-like AI. AI fans are encouraged to apply for projects or internships at Lab42.

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Lab42 in Davos

Lab42 was founded as the Institute for Artificial Intelligence in Davos on 1 July 2022. As Switzerland's youngest AI lab, Lab42 uses state-of-the-art collaboration technologies to connect researchers and AI enthusiasts from all over the world. Lab42's goal is to develop the next generation of AI: A human-like AI that understands its environment and can compe-tently support people in everyday life. The newly developed algorithms are intended to accelerate science in particular. Lab42 is run by the Mindfire Foundation.

www.lab42.global