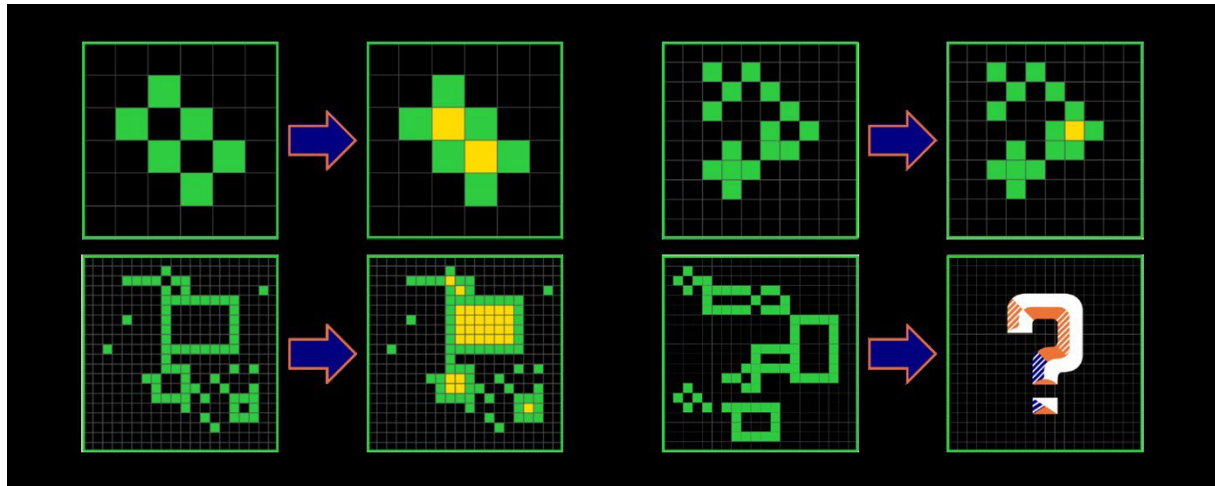


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Science City Davos

## Lab42 - The road to intelligent AI

Switzerland's youngest AI Lab shows first success



*Examples of ARC tasks that seem trivial to humans, but impossible for computers to solve.*

### Today's AI is not intelligent

Lab42 aims to create human-like artificial intelligence (AI) and thus put Switzerland at the forefront when it comes to the advancement and the application of AI. "It is important to us to contribute to the competitiveness and innovative capacity of the Canton of Graubünden," explains Rolf Pfister, Head of Research Lab42. The topic of AI has been controversially discussed since the end of last year with the release of the chatbot "ChatGPT". ChatGPT amazes in being able to compose very detailed and human-like texts automatically, to explain complex issues simply, to improve code and to do homework. Since the system does this by relying on statistical "Big Data" techniques without understanding the content, ChatGPT also produces misleading answers. For example, in logical questions or the creation of research publications: Although the algorithm has been trained on 48 million scientific publications and the generated texts seem to make sense in terms of content, the content is often fictitious. References are cited that don't even exist. "What is needed is AI that is really intelligent, that can reproduce language and also understand and assess content," emphasizes 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 relaunched a global competition last fall: the ARC Challenge, which was first launched by AI pioneer François Chollet back in 2019. ARC tests basic logical principles of reasoning, quantifying an important part of human-like intelligence. Participating teams were challenged to develop a new algorithm that could 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 around the world registered for the Lab42 Challenge. On January 19, the winners were chosen: a student from ETH Zurich achieved 1st place in the ARCathon. Positive 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 then able to raise the three-year-old ARC world record above the 30% mark, also by combining existing solutions.

### **The AI race 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 other competitions with partners to further advance the creation of human-like AI. AI enthusiasts are encouraged to apply to Lab42 for projects or internships.

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#### **Lab42**

Lab42 was founded as an institute for artificial intelligence in Davos on July 1, 2022. As Switzerland's youngest AI lab, Lab42 uses state-of-the-art collaboration technologies to connect researchers and AI enthusiasts from around the world. Lab42's goal is to develop next-generation AI: Human-like AI that understands its environment and can competently support people in everyday life. The newly developed algorithms are intended in particular to accelerate science. Lab42 is operated by the Mindfire Foundation.

[www.lab42.global](http://www.lab42.global)