

Press release

New supercomputer boosts Swiss AI Initiative

Joint initiative for trustworthy AI

Zurich, 4 December 2023

ETH Zurich and EPFL are launching the “Swiss AI Initiative”, whose purpose is to position Switzerland as a leading global hub for the development and implementation of transparent and reliable artificial intelligence (AI). The new Alps supercomputer based at the Swiss National Supercomputing Centre (CSCS) provides the supporting world-class infrastructure.

In February 2024 ETH Zurich’s new Alps supercomputer goes live at the Swiss National Supercomputing Centre (CSCS) of ETH Zurich in Lugano. Boasting the next generation of 10,000 graphics processing units (GPUs), Alps is one of the world’s most powerful computers and has been especially developed to meet the needs of applications in the area of artificial intelligence. This new computer gives Swiss scientists access to the sort of computing power only available to the world’s biggest tech companies.

Technological edge to protect Switzerland’s digital sovereignty

The new supercomputer therefore gives Switzerland a significant competitive advantage over international rivals. This is because the infrastructure for supercomputing is in short supply worldwide due to the rapid development of generative AI and – where available – is mostly owned by a handful of large multinationals. “Through this joint initiative we want to exploit our advantage as a location and make Switzerland’s expertise in artificial intelligence transferrable to society as a whole,” explains Christian Wolfrum, ETH Vice President for Research. “Science must assume a pioneering role in such a forward-looking field, rather than leaving it to a few multinational corporations. Only in this way can we guarantee independent research and Switzerland’s digital sovereignty.”

Transparency and Open Source

The aim of the initiative is to develop and train new large language models (LLM). These must be transparent, deliver comprehensible results and ensure legal, ethical and scientific criteria are met. “Unlike the large language models that are usually available in the public domain today, the Swiss AI Initiative strongly emphasized transparency and Open Source. Everyone must be able to understand how the models were trained, the sort of data used, and how results are recovered,” stresses Jan Hesthaven, Provost and Vice President for Academic Affairs at EPFL.

To develop such models, the Swiss AI Initiative will use ten million GPU hours on the new Alps computer over the next 12 months, equivalent to the computing power of a single GPU running at full load for over 1,100 years. Switzerland is therefore the first country in the world to operate a research infrastructure on the next-generation NVIDIA Grace Hopper Superchip.

Swiss AI Initiative already up and running

This additional computing capacity will be used to develop new, industry-specific AI base models for use in different areas such as robotics, medicine, climate sciences or diagnostics. In addition, the Initiative will also explore fundamental questions in the development and use of LLM models, such as: What form will future interaction between humans and AI take? What is the appropriate ethical framework? How do we manage security and data privacy? What new approaches can be used to scale up models and make them more energy efficient?

AI for industry and public administration

The Swiss AI Initiative has set itself the goal of bringing together science, industry and politics to collaborate in shaping and driving forward the development and use of artificial intelligence in Switzerland. Existing partnerships with companies, hospitals and public-sector bodies will be expanded further. Swisscom's CTO Gerd Niehage comment: "Here at Swisscom we welcome the Swiss AI Initiative, especially as we are convinced this will be an important building block in Switzerland's digital future. It accelerates the digital transformation and creates new capabilities our country needs to play a dominant role in the area of generative artificial intelligence. For Swisscom, AI solutions like the Swiss AI Initiative are a key element of innovative digital solutions that our customers can trust."

The software infrastructure, accumulated expertise and base models developed in Switzerland should be transferable as openly and directly as possible to society and industry. To remain competitive, SME's will also have to rely increasingly on the use of AI in future. Like public services, they will be able to directly benefit from the open Swiss AI Initiative. On top of that, the Swiss AI Initiative is developing a programme for supporting start-ups in the area of artificial intelligence.

Networking researchers all over Switzerland

ETH Zurich and EPFL operate their own AI centres that will work closely together in future, along with the Swiss Data Science Center, to conduct world-class interdisciplinary AI research. This initiative aims to pool the specialist knowledge of around a dozen Swiss universities, technical universities and research institutes. Over the past few months over 75 professors from all over Switzerland have signed up to the initiative. In addition, other international researchers have also been invited to work together on the development of multilingual, cross-border open source LLMs. ETH Zurich and EPFL are already members of ELLIS, the European network of AI excellence, which includes some 40 AI hot spots in Europe.

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