



Scientific Advice Mechanism

to the European Commission

Successful and timely uptake of Artificial Intelligence in science in the EU



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Issue

Artificial intelligence has the potential to revolutionise scientific discovery, accelerate research progress, boost innovation and improve researchers' productivity. The EU must take advantage of the opportunities this brings, and in a timely way. But it must also respond to the challenges and risks associated with this fast-evolving technology.

Challenge

The European Union needs to accelerate a responsible uptake of AI in science (including providing access to high quality AI, respecting European values) in order to boost the EU's innovation and prosperity, strengthen EU's position in science and ultimately contribute to solving Europe's societal challenges.

Requirements

The EU is lacking a dedicated and systemic policy to facilitate the uptake of AI in science. Such a policy could connect and complement existing AI initiatives to boost the uptake of AI in science and provide for new, better targeted policies regarding its application.

Recommendations

- Establishment of a European institute for AI in science**
 To counter the dominance of a limited number of corporations over AI infrastructure and to empower public research across diverse disciplines, the scientists advise the creation of a new institute. This facility - a publicly funded EU state-of-the-art distributed institute for research with AI (EDIRAS - European Distributed Institute for AI in Science) - would offer extensive computational resources, a sustainable cloud infrastructure and specialised AI trainings for scientists. It would come along with the creation of a European AI in science council (EASC) for all sciences with AI.
- High quality standards for AI systems (i.e., data, computing, codes)**
 AI-powered scientific research requires a vast amount of data. That data should be of high quality, responsibly collected and meticulously curated, ensuring fair access for European researchers and innovators.
- Transparency of public models**
 The EU should support transparent public AI models helping, among other things, increase the trustworthiness of AI and reinforce the reproducibility of research results.
- AI tools and technologies specialised for scientific work**
 To help scientists enhance their overall efficiency, SAM advises the EU to support the development of AI tools and technologies specialised for scientific work (e.g., foundation models for science, scientific large language models, AI research assistants and other ways to use AI technologies).
- AI-powered research with major benefits for EU citizens**
 According to the advice, prioritising AI-powered research in areas like personalised healthcare and social cohesion, where data is abundant but difficult to interpret, would maximize benefits for EU citizens.
- A Human and Community-Centric Approach**
 The advisors recommend that the EU promotes research into the philosophical, legal, and ethical dimensions of AI in science, ensuring respect of human rights, transparency and accountability. Promoting 'AI literacy' would not only enable everyone to enjoy the benefits of this technology, but also strengthen future European research by nurturing and retaining the best talents.

Impact

These recommendations aim to guide and support the overall European Commission strategy for AI in research and innovation.

This is a one-page summary of a scientific opinion by the Group of Chief Scientific Advisors, an independent expert group providing high-quality and timely scientific advice to the European Commission, to inform European Union policies and legislation. It is informed by the [SAPEA evidence review report](#). Read the full report [here https://data.europa.eu/doi/10.2777/46863](https://data.europa.eu/doi/10.2777/46863)

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