

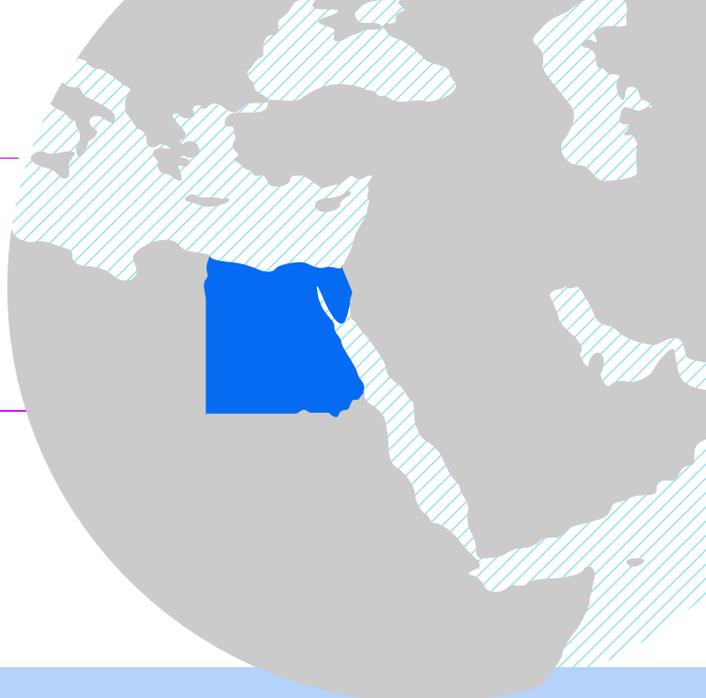
EGYPT

Towards responsible use of artificial intelligence in science and research

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Mohamed Farahat

Lawyer and Legal Consultant, member of UNESCO's AI Ethics Experts Without Borders network and lead expert of Egypt's Readiness Assessment Methodology report



Key takeaways

- Egypt's general AI landscape, strategies and achievements illustrate its readiness for deploying AI in science and research.
- A comprehensive AI governance framework, data protection framework and ethical framework for AI deployment are needed to mitigate the misuse of AI and avoid adverse impacts on science and research.
- A guideline for using AI in science and research should be adopted, with a specific section that focuses on using AI in neurotechnology.

The Government of Egypt has begun the processes of institutionalizing and regulating AI. The country is continuing to develop the required mechanisms to govern the use and deployment of AI in different sectors. Egypt's general AI landscape illustrates its readiness to deploy AI in the field of science and research. However, the lack of clear and specific ethical guidelines on using AI in science and research in general, and on neurotechnology in particular, constitutes a large gap in the Egyptian science system.

Egypt has made remarkable advances in building its AI landscape. According to the *2025 Government AI Readiness Index* (Oxford Insights, 2025), Egypt ranks 41 out of 188 countries globally. This is an improvement from 2024, when Egypt ranked 65 out of 188 countries. Egypt held the top spot in Africa and moved up four places in the Middle East and North Africa region, from seventh place in 2024 to third place in 2025 (Oxford Insights, 2024; Oxford Insights, 2025).

AI is currently used across a range of sectors such as health care, judiciary and agriculture, as well as in science, education and research. There have been specific advancements in several areas, including legislation, institutional development and digital infrastructure.

Egypt's AI landscape

In 2019, Egypt established the National Council for Artificial Intelligence (NCAI), which was responsible for drafting the country's first *National Artificial Intelligence Strategy*. This was launched in 2021 and focused on capacity building, integrating AI in the public sector and fostering international collaboration.

In 2023, the *Egyptian Charter for Responsible Artificial Intelligence* was adopted (NCAI, 2023). The charter established a comprehensive ethical and regulatory framework for the responsible deployment of AI in Egypt, prioritizing human-centeredness and the wellbeing of citizens.

In January 2025, the NCAI released the *National Artificial Intelligence Strategy Second Edition (2025-2030)*. The strategy outlines the renewed vision to position Egypt as a leader in AI within the Middle East and Africa and showcase how AI can drive socio-economic transformation, innovation and sustainable development.

In September 2025, the NCAI published its open data policy – the first comprehensive national framework for making non-sensitive public data held by government entities accessible. It aligns with global standards and Egypt’s commitments under the Sustainable Development Goals and digital transformation agenda. The policy aims to promote transparency, accountability and public trust, encourage the development of innovative digital products and services, improve public service delivery and operational efficiency, and support data-informed policy decisions and planning.

Finally, in 2025, the NCAI established a personal data protection centre – personal data and data protection are essential when using AI, especially in science and research. Neurotechnology, for example, directly breaches personal data and privacy, so a data protection framework should be in place. According to UNESCO, the ‘application of neurotechnology raises ethical, legal and societal issues and questions related to human dignity and human rights’ which include ‘autonomy, privacy, personal identity, freedom of thought’ among others (UNESCO, 2025a). In addition, the *Recommendation on the Ethics of Artificial Intelligence* (UNESCO, 2021) recognizes ‘Ethical questions related to AI-powered systems for neurotechnologies and brain-computer interfaces should be considered in order to preserve human dignity and autonomy’. Furthermore, UNESCO’s *Draft Recommendation on the Ethics of Neurotechnology* emphasized that ‘New and existing frameworks should consider both neural data as well as indirect neural data and non-neural data allowing mental states inferences as sensitive personal data’ (UNESCO, 2025a).

There are a few gaps, however, in the national AI research ecosystem on the use of AI in science and research: the government has not adopted a specific strategy for using and integrating AI systems into science and research, nor are there any guidelines or frameworks to guide on a national level.

Opportunities for AI in research and development

The government has identified several top-priority industries that can leverage large language models (LLMs) to help boost key sectors (NCAI, 2025). All research related to AI development, for example, through one of Egypt’s many AI research centres, should prioritize these sectors:

- **Government:** For combating misinformation and disinformation, processing public opinion, economic and monetary policy-making, and tracking and managing national resources.
- **Judiciary:** For virtual legal aid, classification of court cases, automated legal research and legal drafting assistance, and transcription of legal proceedings.

- **Education:** For curriculum content generation and personalized virtual tutors.
- **Agriculture:** For the prediction of pest and disease outbreaks, virtual farmer advice and crop mapping.
- **Digital transformation:** For accelerated digital transformation using generative AI.
- **Health care:** For screening and diagnostic purposes, a research and development (R&D) platform for drug repurposing, and culturally sensitive mental health support.
- **Energy:** For predictive maintenance of power production and distribution, and the management of load distribution of the power network.
- **Culture and tourism:** For digital heritage optimization, AI-powered virtual tour guides and automatic multilingual translation of books (NCAI, 2025).

The government has also identified steps that need to be taken for the strong implementation of industry-specific use cases:

- Investment to build and maintain the necessary infrastructure for LLM development.
- Preparation and readiness of datasets for priority sectors.
- Fine-tuning LLMs for Arabic language use in specific sectors based on the priorities set by the government and readiness of datasets.
- Production of demonstration use cases for LLMs to rapidly strengthen Egypt's R&D capabilities in the field of large model technology (NCAI, 2025).

AI research centres

There are several established centres in Egypt focused on AI R&D, including:

- Nile University, School of Information Technology and Computer Science, has an AI programme which focuses on R&D in AI technologies and applications.
- The American University in Cairo Innovation Hub engages in AI research and educational initiatives in collaboration with industry partners.
- Cairo University, Faculty of Computers and Artificial Intelligence, which researches various AI topics and promotes academic and industry collaboration.
- The Applied Innovation Center, which focuses on bridging the gap between research and practical application, plays a vital role in promoting a culture of innovation and supporting economic development through technology transfer and applied research.

Ethics

Egypt's national AI strategy emphasizes the ethical use of AI and that effort is needed 'to drive AI adoption in a safe, ethical and value-targeted manner' (NCAI, 2025) and states: 'Ensure ethical and responsible AI use by establishing a comprehensive AI regulatory system, activate the ethical framework and put a nucleus for a clear regulatory body' (NCAI, 2025).

The *Egyptian Charter for Responsible Artificial Intelligence* seeks to ensure that AI systems are developed and used with high levels of transparency, fairness and accountability, protecting vulnerable groups from bias while maintaining strict human oversight (NCAI, 2023). Ultimately, the guidelines aim to leverage AI as a tool for economic prosperity and social inclusion while ensuring all technological advancements remain compliant with national laws and international safety standards (NCAI, 2023).

Although Egypt does not have a national strategy or framework on the responsible use of AI in science and research, some universities have adopted relevant policies. These ethical policies, alongside *the Egyptian Charter of Responsible AI*, could be seen as the foundations of an ethical framework for AI deployment and use in the field of science and research.

One example is Cairo University, which in 2024 adopted its first policy about the responsible use of AI, targeting academics, students, administrative officers and technical staff. The policy put in some general controls and warnings on using AI in research for academic staff: while they are allowed to analyse big data, researchers must clearly refer to the use of AI tools in research and get informed consent from research participants. The policy includes warnings about academic integrity, ensuring respect for the ethical principles of research, and the need to take into consideration AI's biases and hallucinations, as well as cybersecurity issues. The policy provides guidelines for students, such as using AI tools to produce research. Submitting research and academic projects generated by AI is generally prohibited, unless it is subject to human changes by the students in a way that reflects their critical thinking and own analyses.

The Egyptian Government intends to establish an AI research fund. The fund will give financial assistance for innovative research initiatives, as well as scholarships and research grants for young scholars interested in AI research to prepare them to become AI experts.



In February 2025, the Supreme Council of Universities adopted a second edition of its *Guidelines for the Use of Artificial Intelligence in Higher Education and Scientific Research*. This guide aims to integrate modern technology into the educational and research process. It establishes mechanisms and regulations for using AI applications in education and scientific research, while enhancing the role of AI as an enabling tool for both students and researchers.

Next steps

In the national AI strategy, Egypt aims to provide abundant resources through the attraction and retention of academic and industry leaders capable of driving AI-focused R&D activities. This includes a dedicated fund to support research projects, grants and policies to incentivize AI research and the establishment of further research institutions

and centres of excellence in AI (NCAI, 2025). This will support research projects, promote collaboration between academia and industry, provide scholarships and research grants to prepare interested young scholars to become AI experts, and facilitate the development of AI technologies and applications which address national priorities and societal challenges (NCAI, 2025). The Egyptian Government also plans to establish a centre for responsible AI (NCAI, 2025).

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