

National strategies on Artificial Intelligence A European perspective in 2019

Country report – Spain



In March 2019, the government of Spain's Ministry of Science, Innovation and Universities published the [RDI Strategy in Artificial Intelligence](#) (Spain, 2019). It establishes a series of priorities and policy recommendations to create the appropriate ecosystem for the development and application of AI technologies. Although the policy report is mainly focused on the creation of a framework for a solid Research, Development and Innovation (RDI) ecosystem in AI, it serves as the initial structure for the development of a national AI strategy. The RDI strategy in AI identifies the following priorities:

- Developing a framework for the development of solid IA RDI system and the analysis of its socio-economic impact;
- Identifying key priority areas in which research and innovation in AI should be maximised;
- Facilitating the transfer of knowledge and its return to society;
- Fostering the development of education and competences in the field of AI;
- Establishing a digital data ecosystem and enhance the available digital infrastructures;
- Analysing and developing an ethical framework from an RDI perspective.

The first priority aiming at developing an organisational structure for a solid RDI system in AI will be supported by various policy initiatives increasing the **opportunities for collaborative partnerships**. Among others, it will include the creation of a Network of Centres of Excellence in AI and Digital Innovation Hubs. This network can be primarily formed by existing national AI research centres and other [research centres](#) with significant dedication to **AI research** such as Severo Ochoa Excellence Centres and María de Maeztu Excellence Unit. Other initiatives. The nodes of this network will not only be fruitful to strengthen RDI activities in AI but will also be effective means to promote public-private collaborations, to foster knowledge transfers and to attract and retain international talent. To encourage collaboration opportunities, the RDI strategy proposes the launch of an AI Capability Map, which would survey and map the AI capabilities and competences of the various science and technology communities in Spain.

The policy document identifies a set of priority areas where to develop RDI activities: connected industry 4.0, smart cities and territories, health, energy and environment, safety and security, culture and tourism, public administration and education. According to the timeline outlined in the RDI strategy report, sectorial strategies will be developed to define dedicated policy actions to **strengthen the innovation capabilities** and competitiveness in above mentioned key sectors. Key sectors of the RDI strategy are highly similar to those identified by the Italian national strategy. Similar to Italy, the Spanish RDI strategy has a **dedicated focus on the public sector**. It recommends the creation of a National Data Institute for a better data governance and improved quality of public services. AI applications based on natural language processing such as chatbots could serve a better interaction between public services and citizens.

With respect to education, the RDI strategy recommends **education reforms** to maximise the opportunities to improve skills and competences in AI and digital subjects. The Spanish Ministry recognises the need for transversal and specific training following the developments of AI in all education levels. This calls for basic and advanced AI training in primary, secondary and higher education (Degree, Master, and Doctorate). These measures should be complemented with specific trainings for professionals, offering **lifelong learning and reskilling opportunities**. Promoting continuous training throughout professional life is primordial to keep competences up to date and aligned with future labour market demands.

To this purpose, the RDI strategy also considers setting up specialised MOOCs to respond to competences required by future professions.

The RDI strategy recognises the essential value of data in the development of AI. Hence it advocates the **creation of a digital data ecosystem** consisting of high-quality databases with open data access. To ensure high-quality of the data, it is recommended to create quality management systems and certification schemes. One of the Spanish policy initiatives for open data following the Public Sector Information (PSI) directive is the creation of an open data portal as datos.gob.es. Other initiatives include the provision of AI algorithms and software platforms to facilitate the exploitation of open databases. The Spanish government has also set up physical computing infrastructures such as the Spanish Super Computing Network (RES), a distributed network of thirteen supercomputers. In addition, the Spanish government is participating to the implementation of the European Open Science Cloud (EOSC) initiative, a cloud infrastructure to promote open science at European level. Spanish efforts to support the development of future 5G communication networks, supercomputing and cloud computing are also channelled through the policy on [Digital Enabling Technologies](#), a program to support R&D grants in these specific fields.

Finally, the RDI strategy recommends to set up a Spanish **Committee on Research Ethics** to draft an ethics code for AI and to define ethical guidelines for a fair and sustainable use and development of AI.

Reference

Spain (2019). Spanish RDI Strategy in Artificial Intelligence. Ministry of Science, Innovation and Universities. http://www.ciencia.gob.es/stfls/MICINN/Ciencia/Ficheros/Estrategia_Inteligencia_Artificial_EN.PDF

Background information

This country report has been prepared in the context of [AI Watch](#) and the [OECD AI Policy Observatory](#).

AI Watch is the European Commission knowledge service to monitor the development, uptake and impact of Artificial Intelligence (AI) for Europe, launched in December 2018.

The OECD AI Policy Observatory (OECD.AI) is an inclusive hub for public policy on AI. It aims to help countries encourage, nurture and monitor the responsible development of trustworthy AI systems for the benefit of society.

This country report has been created on the 25th of February 2020. Please visit <https://ec.europa.eu/knowledge4policy/ai-watch/spain-ai-strategy-report> for regular updates.

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EU Science Hub: ec.europa.eu/jrc/en @EU_ScienceHub Joint Research Centre
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Contacts:

European Commission – Joint Research Centre
Directorate B – Growth & Innovation – Digital Economy Unit (B6)
e-mail: EC-AI-WATCH@ec.europa.eu
website: https://ec.europa.eu/knowledge4policy/ai-watch_en

