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HARMONIZATION OF ARTIFICIAL INTELLIGENCE RULES WITH NEW APPROACHES IN ADMINISTRATION

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Abstract
IBM says that "Artificial Intelligence (AI) uses computers and machines to mimic the problem-solving and decision-making capabilities of humans."
This paper contains ideas from his current AI research and is based on its implementation and analysis of its ethical impact on society, especially in education, and presents several European concepts and initiatives.
Today we are talking about artificial intelligence (AI) in terms of technology development focused on industry or manufacturing goods and services, but finding artificial intelligence services in education remains difficult. That's why I suggest investigating before the benefits and limitations it has.
The purpose of introducing an AI code of ethics, alongside the other European rules, is to provide guidance to stakeholders when faced with decisions related to the use of artificial intelligence.
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1. INTRODUCTION

The new challenges of the information society demand a severe change of the rigid training canons from the university. Formats based on artificial intelligence promise a substantial improvement of education for all levels, with an unprecedented qualitative improvement offering the student a precise personalization of learning adapted to his requirements, managing to integrate the different forms of human interaction and information and communication technologies. The great challenge of the university of the new millennium is the urgent need to plan, design, develop and implement digital skills to train better professionals able to understand and develop the technological environment according to their needs, as well as to implement the universalization of a supported digital language of programs developed under artificial intelligence formats.

Human intelligence is not characterized by just one trait, but by the combination of many diverse abilities. Research in AI has mainly focused on the

components of intelligence: learning, reasoning, problem solving, perception and language use.

The earliest substantial work in the field of artificial intelligence was done in the mid-20th century by the British logician and computer pioneer Alan Mathison Turing, who advocated the idea that "machines can think". Alan Turing intuited one thing rightly, no doubt: no matter how well man calculates, the computer does it better.

John McCarthy was the person who coined the term artificial intelligence for the first time in 1950, therefore he is considered the father of AI. It is a process of making computers capable of understanding, thinking and performing the same as a human being, which is achieved by inputting data used as inputs, taken as commands.

Artificial intelligence improves the ability of machines to function like humans. A variety of new technologies, such as computers, mobile phones, and other devices, have made relative contributions to artificial intelligence's prominence. Different data sets are given as input to the machine to help it perform each task. Therefore, we can say that artificial learning consists of machines embedding human intelligence by developing sets of data or algorithms.

2. AGREEMENTS AT EUROPEAN AND UNESCO LEVEL

The European Union, in its proposal for a regulation on artificial intelligence, suggested that its use could negatively affect fundamental rights due to its characteristics (opacity, complexity, data dependency, autonomous behavior, etc.). Similarly, the recommendations on the ethics of artificial intelligence, adopted in 2021 by UNESCO's 193 member states, are for "the impact of artificial intelligence on decision-making, employment and work, social interaction, health care and education". It emphasizes ethics, the implications of artificial intelligence in the Mass Media, Access to information, Digital divide, Consumer and personal data protection, Environment, Democracy, Rule of law, Safety and law enforcement, Freedom of expression, Privacy, Human rights, including non-discrimination and fundamental freedoms (European Commission, 2018a)

UNESCO's recommendations also draw attention to the ethical challenges arising from the possibility that artificial intelligence algorithms "reproduce and reinforce existing prejudices that may exacerbate existing forms of discrimination, prejudice and stereotypes". For all these reasons, the UNESCO agreement calls on countries to create regulatory frameworks that ensure that AI technologies serve the interests of their citizens and that humanity as a whole benefits. (UNESCO, 2021)

In this sense, Law 15/2022 on equal treatment and non-discrimination is the first regulatory approach in the Spanish region regarding the use of artificial intelligence by public authorities and companies. According to the law, government agencies should "consider standards to minimize bias, transparency

and accountability, algorithms used by government agencies to be involved in decision-making, where technically feasible."

The implementation of mechanisms that allow access to human intelligence is encouraged. Government agencies and businesses also support the "ethical, trustworthy and fundamental rights" use of artificial intelligence.

The purpose of an AI code of ethics is to provide guidance to stakeholders when faced with ethical decisions related to the use of artificial intelligence. The rapid progress of artificial intelligence in recent years has led groups of experts to develop AI safeguards to protect users. One of these groups collaborated with AI researchers and developers, as well as academics from many fields, to produce 23 guidelines, now known as the Asilomar AI Principles (Stapf-Fine, Bauberger, 2018). The Asilomar AI Principles are divided into three categories: Research, Ethics and Values, and Longer-Term Issues. These principles are a clear statement of possible undesirable outcomes, followed by recommendations to prevent them (Figure 1).

Research **This subsection of the Five Principles includes AI research and development methods, and their transparency and beneficial use.**	**Ethics and values** **This subsection of the 13 AI Principles revolves around the ethics of AI and the values instilled during its development**	**Longer-term issues** **This subsection of the Five Principles of AI discusses the importance, risks, and potential that AI can offer in the long term.**
1. Research **2. Research funds** **3. Political science connection** **4. Research culture** **5. Avoidance of competition**	6. Safety 7. Transparency of failure 8. Judicial transparency 9. Liability 10. Value Alignment 11. Human values 12. Personal privacy 13. Freedom and Privacy 14. Common benefit 15. Shared prosperity 16. Human control 17. Non-subversion 18. The arms race	19. Attention to capacity 20. Importance 21. Risks 22. Recursive self-improvement 23. The common good

Sourse: EUR-lex (2023)

Figure 1. Asilomar AI Principles

3. THE INVOLVEMENT OF THE EUROPEAN COMMISSION AND THE EUROPEAN COMMITTEE IN AI ETHICS

In April 2021, the European Commission proposed the world's first regulatory framework for AI. The proposal introduces requirements for AI systems that pose high risks to security and fundamental rights. These requirements include the use of high-quality data sets, research, information sharing, human oversight measures and robustness, security, cybersecurity and accuracy. The proposal also bans particularly dangerous applications of AI that could manipulate human behavior.

Regarding the financing methods, several sources are provided:

- The Digital Europe Program (DEP) for 2021-2027 will be the main financing engine of these activities and will regulate the establishment of a network of European digital innovation hubs;
- The Commission also recommends using the resources made available to the member states through the RRF (The Recovery and Resilience Facility) program;
- ERDF (European Regional Development Fund) will be used for the purchase of equipment, infrastructure and software in the provision of services;

The watchword is partnership: academic, private, small and large companies, public sector, suppliers and beneficiaries.

One of the main lines of action envisaged in the Commission's strategy refers to the need to develop human resources through appropriate university and postgraduate programs, but also to attract valuable researchers from other countries.

It is well known that there is a shortage of skilled workers in Europe in the fields of information technology in general and artificial intelligence in particular. This aspect has been emphasized by almost all Member States and by the Commission on various occasions.

Therefore, in Romania, concerns in this field have the following directions:

- The introduction of master's and doctorate programs, for the training of professionals who will make important contributions to research and development in this field.
- Facilitating professional training and internships through programs approved by the Commission.
- Development of new master's and doctoral programs in collaboration with research centers and private companies, according to the requirements of new technologies.
- Improving the framework conditions for researchers in the field to ensure the quality of the activity

The Committee's efforts are relevant through (European Commission, 2020):

- The Digital Education Action Plan 2021-2027 supports digital education. This will help potential research staff to complete internships in the digital

field and expand participation opportunities for students and faculty, focusing on AI skills and paying particular attention to the principles of non-discrimination and gender equality.

- The Horizon Europe program finances and supports a network of Artificial Intelligence Centers of Excellence and PhD programs (within the AI Lighthouse program). The Center supports the research of options for attracting quality through close collaboration with industry and public authorities. The program allows the creation of AI modules that can be integrated into master's educational programs in other fields, as well as the development of doctoral research.

Doctoral scholarships will continue to be financed through collaborative projects

- The importance of accreditation of degrees in AI between universities and countries
- Funding as many students as possible for artificial intelligence courses and doctoral scholarships in the field

4. INITIATIVES BETWEEN THE EUROPEAN COMMISSION AND THE MEMBER STATES

At the end of 2020, the Commission awarded grants to four university networks, SMEs and AI Centers of Excellence to support Member States' efforts to increase the supply of vocational training in AI. Supporting internships in the digital field, expanding participation opportunities for students and teachers are part of the actions planned in the Digital Education Action Plan 2021-2027.

The network of AI Centers of Excellence is supported within the Horizon Europe Program (within the AI Flagship Programme). Among other tasks, the center will look for ways to maintain performance through close cooperation with industry and public authorities. The development of a PhD course and an artificial intelligence module that can be integrated into a Masters course outside of ICT education is also being considered.

Promotion of PhD studies, postdoctoral fellowships and joint AI staff exchange projects are found in the Marie Sklodowska Curie actions, through proposals to support the training, skills development and career development of researchers. (European Commision, 2021a)

Supporting initiatives to promote mutual recognition of higher education programs focused on artificial intelligence in the EU is another initiative of the Commission.

Ethical artificial intelligence systems, as defined by the European Commission, must comply with seven basic requirements: the human factor and human oversight, technical soundness and security, privacy and data governance, transparency, diversity, non-discrimination and equity, social welfare and ecological, responsibility.

The Human Resources Development Strategy of the European Commission is part of a joint effort by the member states to develop the field of ICT (Information and Communication Technologies), the number of experts in the ICT sector being inadequate and the training of existing and potential resources needing to be improved (European Commission, 2018b).

The main actions that the Commission can and must undertake in Romania are:

- Development and diversification of master's programs specializing in artificial intelligence.
- Increasing the number of PhD scholarships in AI fields.
- Involvement of private partners and research centers in doctoral programs (e.g. research projects).
- Development of doctorates through collaboration between partners from the same or different countries, academic, industrial and research environments.
- Pursuing and respecting the principles of non-discrimination and gender equality.
- Mutual recognition of higher education programs focused on AI.

The Commission's recommendations to the member states, according to the documents, are:

1. Using RRF funds to modernize its public sector
2. Using the "Modernization" chapter of the RRF focusing on the digitization of government and services, including justice and health systems.
3. Using RRF retraining and upskilling chapters to provide skills and new competencies to public sector officials and managers

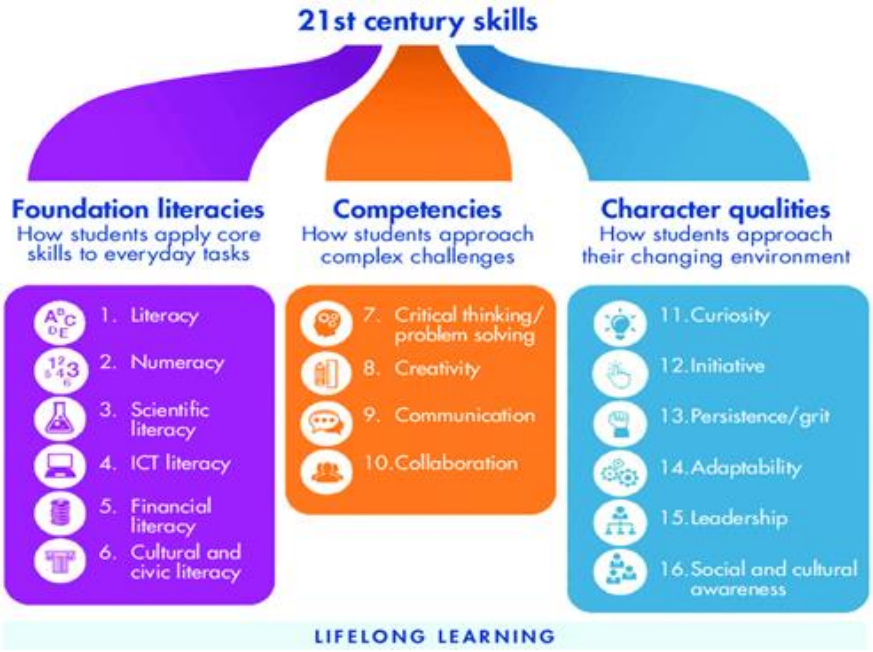
5. AI SERVICES FOR PUBLIC ADMINISTRATION

A main tool is participation with projects under Horizon Europe Cluster 4 "Digital, Industry and Space", the research, development and adoption of next-generation computing and data technologies and infrastructures.

Investing in cloud and state-of-the-art technologies as part of the RRF pilot component stimulates the adoption of the National Recovery and Resilience Plan (NRRP), with Romania investing in the European data space, using resources offered through the program.

The 2018 report by NESTA (a British charity that operates the Global Fund for Innovation) offers 16 skills to pursue throughout the 21st century. These fall into the three categories as shown in Figure 2. The figure presents the list of sixteen globally recognized skills for the 21st century that should be introduced in modern education. Skills (Figure 2) are divided into three blocks: fundamental literacies (literacy, numeracy, scientific literacy, ICT literacy, financial literacy, cultural and civic literacy), skills (critical thinking/problem solving, creativity,

communication, collaboration), character qualities (curiosity, initiative, persistence, adaptability, leadership, social and cultural awareness) (Soffel, 2016).



Sourse: Soffel, 2016

Figure 2. 16 skills for the twenty-first century

The future is based on core knowledge, skills and personality traits, in the context of new AI trends. Future possibilities were discussed and it is argued that the future of work is not only about automation, but also about environmental sustainability, urbanization, uneven development and political differences. There is a strong emphasis on interpersonal skills, higher cognitive skills and systems skills. Originality, ideas and active learning are very important. Future employees will need a wide range of knowledge, but also special skills in the field of AI. (Bakhshi et al., 2017)

In addition to the Digital Europe programme, resources such as the Connecting Europe Facility (CEF2) and EU4Health are used in the development of the European data space, for example in the field of health. Implementation measures are proposed for the transformation of public sector data into formats that can be used freely, Romania being represented by three companies: SIVECO România SA, Continental Automotive România SRL and Software Imagination & Vision SRL, which participate in the funded KYKLOS 4.0 project by the European Union. Taking into account the existing experience and the results of consultations with interested parties, Romania should respect and implement the

following key principles to support the provision of data from the private sector to public sector bodies under preferential conditions for re-use (European Commission, 2021b).

- Proportionality in the use of private sector data: requests to provide private sector data under preferential conditions for re-use should be justified by a clear and demonstrable public interest;
- Purpose limitation: the use of private sector data should be clearly limited to one or more purposes that must be specified as clearly as possible in the contractual clauses establishing the collaboration between businesses and public administrations. These may include a limitation of the duration of use of the respective data;
- The principle of "do no harm": collaboration between businesses and public administrations must ensure that legitimate interests are respected, in particular the protection of trade secrets and other commercially sensitive information;
- Conditions for data re-use: collaborative data sharing agreements between businesses and public administrations should aim to be mutually beneficial, while recognizing the public interest objective by offering preferential treatment to the public sector body over other clients. This should be reflected in the level of compensation agreed, which could be linked to the public interest objective pursued;
- Transparency and participation in society: collaboration between businesses and public administrations should be transparent regarding the parties to the agreement and their objectives;
- In the field of health, an aspect that Romania should address would be the governance of health data for their secondary use. The management of health data requires a specific mechanism and cannot be governed exclusively by horizontal legislation, such as the proposed Data Management Law;
- A particularity in the health sector is that member states have limitations to maintain or introduce additional conditions regarding the processing of health, genetic or biometric data.
- Initiatives or measures that can be recommended in the case of Romania:
- Expansion of the electronic signature project in the public sector
- Expansion of automation projects in the Ministry of Finance aimed at reducing errors, work and response times, backlogs, etc.
- Using AI tools in public procurement processes
- Defining standard processes for decision-making, procurement, implementation and operation of AI applications in public administration.
- The use of AI tools in the police activity to increase its capacity for action

- Identifying data sets from the public sector, which can be made available to businesses, researchers and public authorities and which can contribute to the development of artificial intelligence
- To consider areas of application such as: tax and legal consultancy, social assistance, medical assistance, crime prevention, as well as in airport security and combating disasters and in military applications;

6. CONCLUSIONS

UNESCO encourages the implementation of mechanisms that allow access to human intelligence. Government agencies and businesses also support the "ethical, trustworthy and fundamental rights" use of artificial intelligence

The Commission develops quality partnerships in multiple fields, many with connections to the field of AI. Within these partnerships, the way to support small companies would be their integration into public-private partnerships. The Commission encourages Member States to support through national programs partnerships with small and medium-sized companies, including by financing their activities within partnerships with the academic environment or with the public sector in general.

Recovery and resilience programs can be used to modernize the public sector, both by supporting the procurement of AI-based systems and by funding digital skills development initiatives in the public sector. The focus is on digitizing government, developing skills in the public sector and supporting the acquisition of the necessary AI systems.

Participation with projects within Cluster 4 Horizon Europe "Digital, industry and space", research, development and adoption of next-generation computing and data technologies and infrastructures.

Romania will invest in the European data space with resources offered through the program, invest in cloud and next-generation technologies to stimulate cloud adoption through the National Recovery and Resilience Plan (NRRP), "Scale up" and through projects in many countries.

In addition to the Digital Europe programme, Romania will also use resources such as the Connecting Europe Facility (CEF2) and EU4Health for the European health data space. Implementation measures are proposed to transform public sector data into freely usable formats. Romania is represented by three companies: SIVECO Romania SA, Continental Automotive Romania SRL and Software Imagination & Vision SRL, which participate in the KYKLOS 4.0 project financed by the European Union.

The watchword in the acceptance and development of AI is an academic partnership - public sector - private sector - companies - suppliers - beneficiaries.

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