FCAI Finnish Center for Artificial Intelligence

REAL AI FOR REAL PEOPLE IN THE REAL WORLD

Consultation on the White paper on Artificial Intelligence - A European Approach to Excellence and Trust COM (2020) 65 final, 19.2.2020

Finnish Center for Artificial Intelligence FCAI (fcai.fi) is a community of experts that brings together top talents in academia with industry and public sector to solve real-life problems using both existing and novel AI. FCAI is one of the six national Academy of Finland flagships. Our goal in FCAI is to create a new type of AI, which is able to operate with humans in the complex world, and to renew the Finnish industry with this new AI. To create Real AI, we have set up three grand scientific objectives: data efficiency, trust & ethics, and understandability. We welcome the opportunity to comment on the policy options and questions raised in the White Paper and would like to highlight some issues and concerns and suggest the following actions to improve the approach. Our views are very much aligned with those of the ELLIS AI network, and we have actively participated also in the preparation of the ELLIS response to the White Paper.

Recognize the most high-impact issues. Plan the actions so that the risks are minimized while maximizing benefits.

FCAI is happy to see that the Commission acknowledges the central role that AI and data-driven technologies will play in supporting the economic growth and societal well-being in Europe. FCAI also acknowledges the concerns on safety, human rights, equality and transparency rising from the use of modern digital technologies, but would like to point out that regarding these and other emerging concerns, the actions need to be implemented in a way that maximizes benefits while minimizing the risks. Moreover, more attention should be directed towards following additional critical risks:

1. The technological and economic dominance of other continents who have realized earlier the impact potential of AI and data-driven industries, and are investing more in these areas. The White Paper quite accurately notes that if the overall goal is to use AI and data for making Europe "*the most attractive, secure and dynamic data-agile economy in the world*" (Page 1) and "*a global leader in innovation in the data economy and its applications*..." (Page 2), then the currently planned investments are quite insufficient for reaching this goal: "*However, investment in research and innovation in Europe is still a fraction of the public and private investment in other regions of the world*." (Page 4)
2. Data is the fuel of machine learning, and much of the development of AI has been led by gigantic organizations that have access to the largest data sets in the world. If Europe

supports this line of thinking as the main factor in successful AI deployment, then it will be very hard for Europe to succeed, but there is an alternative way: develop technologies that work with smaller amounts of data, or scattered data sets, giving room also for smaller players to flourish, and support data-sharing ecosystems and platforms. Whatever the regulatory framework will be, it must allow and support this, otherwise the big non-European players will surely continue to dominate. The central role of data cannot be over-emphasized.

Support a distributed network of excellence centers, not a centralized "lighthouse" model

Page 6: "*Europe needs a lighthouse centre of research, innovation and expertise that would coordinate these efforts and be a world reference of excellence in AI and that can attract investments and the best talents in the field*." and: "*In addition, a lighthouse centre of research and innovation for AI in Europe would attract talent from all over the world due to the possibilities it could offer. It would also develop and spread excellence in skills that take root and grow across Europe*."

FCAI supports strengthening research excellence through networks of European AI research excellence centres as already proposed in the Coordinated Plan COM (2018) 795, as is already being done for example in the four excellence centers funded through the recent ICT48 call. FCAI opposes attempts to make this model more centralized, if the idea is to focus much of the efforts at a single "lighthouse" location: the best way to attract future talents is to create strong hubs that offer best opportunities for excellence, offering the best experts and the best working environment supported by region-specific partners, topics and resources. Closely interconnected networks of strong centers of excellence support the development of European AI much better than a single hub.

Do not base regulation on a definition of AI

FCAI agrees that regulation of AI and digital technologies is an important issue, but notes that the discussion in the White Paper goes into unnecessary levels of detail (more than half of the report is focusing on regulation), and what is more, is unfortunately partly based on misguided views on AI and its relation to software systems and digital technologies in general. In particular, we strongly disagree with statements like "*The working assumption is that the regulatory framework would apply to products and services relying on AI. AI should therefore be clearly defined for the purposes of this White Paper, as well as any possible future policy-making initiative.*" [Section 5C]. Creating a regulatory framework based on ANY definition of AI would be dangerous as it would first of all offer possibilities for "non-AI software" to bypass the regulation altogether, and moreover, regardless of the definition of AI used, circumventing this type of regulation would not be very hard.

We would also point out that the paper quite unnecessarily mentions some very specific technologies that represent approaches that may work in some narrow areas but are not generally very popular (neuromorphic solutions on page 4) or evolving areas for which the practical relevance of AI within the next decade is quite unclear (quantum computing on page 4.)

Regulate the use, not the technology

FCAI acknowledges that there is a need to review and potentially modify the current legislation in the light of recent developments in AI and digital technologies, taking into account that a rational approach to regulation is based on the use of the technology (what the technology actually does, the "output"), and not on the technology itself (what is "inside", how it works). To this end, we agree with the claim in the White Paper [Page 10] in that "*Developers and deployers of AI are already subject to European legislation on fundamental rights (e.g. data protection, privacy, non-discrimination), consumer protection, and product safety and liability rules. ...For this reason, there is a need to examine whether current legislation is able to address the risks of AI and can be effectively enforced, whether adaptations of the legislation are needed, or whether new legislation is needed. Given how fast AI is evolving, the regulatory framework must leave room to cater for further developments.*"

Therefore, we would like to argue that the commendable goals of Trustworthy AI can unfortunately **not** be reached by imposing requirements on the training data of machine learning, or on the learning algorithms (the “input”), but what we can do is to monitor and verify how the resulting AI system works in practice (the “output”). For example, having a high-quality data set and a good learning algorithm is a good starting point for machine learning, but this does not guarantee the quality of the learned AI system. The only way to verify the quality of most AI systems is to test them (in a real-word environment or under equivalent conditions), and this is the approach the regulation should be based on.

Identify the risks with the risk-based regulation

As argued above, regulation of digital products and services should be based on the intended use of the technology, not on the technology itself. Therefore, the high-risk/low-risk approach of the White Paper offers a more sound basis for regulation (than any definition of AI) as the risk level refers to the intended use (environment), and is not an intrinsic property of the technology itself: for example, the risk level of a classifier software clearly depends on the use case: is it about medical diagnosis of a patient, opening the screen lock of a phone, or recommendation of open appointment slots at a medical center? However, it should be noted that an obvious problem with the risk-based approach is that many sectors include both high-risk and low-risk use cases, and the classification of each use case individually may be laborious. If, on the other hand, each sector would be classified as a whole, many products or services that are actually low-risk, may end up in the high-risk screening, which may slow down the development in Europe, giving an advantage to non-European players.

Recognize and support the key industrial sectors for deployment of digitalization and AI

Page 6: "*The centres and the networks should concentrate in sectors where Europe has the potential to become a global champion such as industry, health, transport, finance, agrifood value chains, energy/environment, forestry, earth observation and space*.”

FCAI agrees that these are important sectors for Europe, but notes that digitalization is seen here only as a supporting tool for certain traditional industries, while Europe is also strong in many purely digital sectors like telecommunications and certain online services (consider for

example Ericsson, Nokia, Skype, Spotify, Supercell and several other online game companies) where Europe already is a global leader.

To summarize, FCAI commends the Commission for bringing up the central role of AI and data-intensive technologies for the development of Europe. We share the general vision of Trustworthy AI forming a competitive edge for Europe, but feel that the White Paper focuses too much on regulation, and what is more, much of the discussion is too detailed and based on limited views of what AI actually is. In most use cases, current regulatory frameworks would be quite sufficient (at least with minor modifications), and building a completely new framework for AI technologies (only) is at best not necessary, and at worst quite harmful. It is obvious that more dialogue is needed between decision makers, AI experts and the general public, and to this discussion the AI experts at FCAI are more than happy to participate.

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