May 10, 2019

Elham Tabassi,
National Institute of Standards and Technology
100 Bureau Drive, Stop 200
Gaithersburg, MD 20899

Dear Ms. Tabassi,

On behalf of the Center for Data Innovation (datainnovation.org), we are pleased to submit comments in response to the National Institute of Standards and Technology's (NIST's) request for information on artificial intelligence (AI) standards.[1]

The Center for Data Innovation is the leading think tank studying the intersection of data, technology, and public policy. With staff in Washington, D.C., and Brussels, the Center formulates and promotes pragmatic public policies designed to maximize the benefits of data-driven innovation in the public and private sectors. It educates policymakers and the public about the opportunities and challenges associated with data, as well as important data-related technology trends. The Center is a non-profit, non-partisan research institute affiliated with the Information Technology and Innovation Foundation.

Robust technical standards for AI will be crucial to the success of the technology in the United States and abroad because they can serve as authoritative guidelines and benchmarks for the development and evaluation of AI. However thus far, concerns about the oversight of AI have stymied productive discussions about standards development by causing policymakers to prioritize oversight at the expense of technical understanding. NIST should shift this focus back to technical standards development to provide a sound scientific underpinning for any future efforts to increase oversight of AI. Additionally, NIST should strengthen U.S. leadership in developing AI standards and encouraging their broad adoption to ensure a globally competitive marketplace.

[1] "Artificial intelligence Standards," Federal Register, May 1, 2019, https://www.federalregister.gov/documents/2019/05/01/2019-08818/artificial-intelligence-standards.

DEFINING "AI STANDARDS"

The term "AI standards" is often used to describe two different, but related, topics: technical standards and the oversight of AI systems. Standards are often a pre-requisite for oversight, however the oversight of AI receives a disproportionately large share of attention from policymakers. While oversight of AI is important, policymakers should recognize that for oversight to be effective, there needs to be robust technical standards to serve as the scientific underpinning for this oversight.

Technical standards for AI can encompass a wide variety of issues, including safety, accuracy, usability, interoperability, security, reliability, data, and even ethics. For example, IEEE's Global Initiative on Ethics of Autonomous and Intelligent Systems is developing technical standards to inform ethics considerations, such as standards for transparency and privacy.[2]

Flexible, robust, common technical standards for AI will be critical to the successful development and deployment of the technology for two key reasons. First, technical standards can provide developers clear guidelines for the design of AI systems to ensure that they can be easily integrated with other technologies, utilize best practices for cybersecurity and safety, and adhere to a variety of different technical specifications that maximize their utility.

Second, common standards can serve as a mechanism to evaluate and compare AI systems. For example, in some contexts, there may be a legal requirement for transparency for a decision-making process, such as judicial decision-making.[3] However without clear standards defining what algorithmic transparency actually is and how to measure it, it can be prohibitively difficult to objectively evaluate whether a particular AI system meets these requirements or expectations, or does so better than another similar system, which discourages the adoption of these technologies. For this reason, in many cases technical standards will be a key component of determining whether an AI system is appropriate for use in a particular context. This has far-reaching implications for AI adoption. For example, for AI systems that pose a safety risk, safety standards will be critical for determining a system's fitness for use. The public sector will rely on standards like accessibility and security when evaluating AI systems for procurement. Defense agencies will rely on standards to ensure the AI they use does not pose national security risks.[4] And autonomous vehicle manufactures will rely on accuracy and reliability standards to ensure their vehicles can perform as expected.

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[2] "The IEEE Global Initiative on Ethics of Autonomous and Intelligence Systems," IEEE, Accessed May 10, 2019, https://ethicsinaction.ieee.org/.
[3] Joshua New and Daniel Castro, "How Policymakers Can Foster Algorithmic Accountability" (Center for Data Innovation, May 21, 2018), http://www2.datainnovation.org/2018-algorithmic-accountability.pdf.
[4] James Sung et al., "Artificial Intelligence: Using Standards to Mitigate Risks," Office of the Director of National Intelligence, Accessed May 10, 2019, https://www.dni.gov/files/PE/Documents/2018_AEP-AI.pdf.

Given this, the relationship between standards and oversight are clear: the effective oversight of AI systems will hinge on robust, widely adopted technical standards. However, many policymakers are eager to develop rules for the oversight of AI to address popular concerns about the potential risks of AI, such as algorithmic bias. Rushing to develop rules for oversight without the necessary scientific and technical understanding will ensure that these rules are arbitrary and ineffective. NIST should work to rebalance the conversation about AI standards to prioritize the development of robust technical standards so that any future oversight can effectively mitigate risk without inhibiting the development and use of innovative applications of AI.

U.S. LEADERSHIP IN AI STANDARDS

The United States government should play a more active leadership role in AI standards development to prevent standards manipulation by other nations and to ensure their widespread adoption. China has a history of subverting international technical standards, such as by developing alternative national standards, to create trade barriers that favor its domestic interests.[5] For example, in 2003, China mandated that all wireless devices support the WAPI encryption standard, which is incompatible with encryption standards used by other nations.[6] However, in recent years China has turned its attention to strengthening its influence in international standards bodies.[7] Policymakers should be wary that China may intend to use its increased engagement with international standards organizations to shape international AI standards in a way that disadvantages non-Chinese firms.

It is imperative that NIST, and the federal government as a whole, improve U.S. participation in AI standards by maintaining a strong presence in the international standards community and promoting the development and adoption of robust technical standards that do not give an unfair advantage to any individual country.

[5] Eli Greenbaum, "5G, Standard-Setting, and National Security," Harvard Law School national Security Journal," July 3, 2018, https://harvardnsj.org/2018/07/5g-standard-setting-and-national-security/.
[6] Brian DeLacey et al., "Government Intervention in Standardization: The Case of Wapi," (September 2006), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=930930.
[7] Doug Brake, "Testimony of Doug Break Before the U.S.-China Economic and Security Review Commission," Information Technology and Innovation Foundation, March 8, 2018, http://www2.itif.org/2018-testimony-china-5g.pdf.

Sincerely,

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