NSPE® NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

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June 3, 2019

National Institute of Standards and Technology
100 Bureau Drive
Stop 2000
Gaithersburg, MD 20899

RE: The National Society of Professional Engineers' Public Comments on Docket ID No. NIST-2019-0001, *Artificial Intelligence Standards*

On behalf of more than 31,000 members of the National Society of Professional Engineers, the following statement is submitted in response to the National Institute of Standards and Technology's request for comment on the development of technical standards for artificial intelligence.

As NIST develops artificial intelligence technical standards, and as policymakers consider complex AI issues, NSPE urges that public safety is held paramount. It is NSPE's policy to support emerging technologies, including artificial intelligence, in a manner that protects the public health, safety, and welfare through rigorous development, testing, and deployment processes involving licensed professional engineers.[1] Historically, professional engineers have been deeply involved in the safe development and deployment of new and emerging technologies. Because professional engineers have a paramount ethical duty to protect the public, they are uniquely positioned to help usher in AI advancements while prioritizing public safety.

With this public-safety role in mind, NSPE urges NIST to use the knowledge of professional engineers when developing AI technical standards and related tools, and encourages developers of artificial intelligence to include professional engineers in the technical standards development process.

NIST's creation of technical standards should include an ethical framework that is applied universally in the development of AI decision-making. For example, how will an autonomous vehicle respond in a scenario in which avoiding injury to one person would likely result in injury to another? In addition, the issue of bias in artificial intelligence also needs to be addressed in NIST's technical standards. A 2016 article from the New York Times noted that "algorithms learn by being fed certain images" and "if a system is trained [using] photos of people who are overwhelmingly white, it will have a harder time recognizing nonwhite faces." These biases can be avoided, or—at the very least—minimized, if there is an ethical

[1] https://www.nspe.org/resources/issues-and-advocacy/professional-policies-and-position-statements/emerging-technologies

framework for artificial intelligence. Additionally, establishing an ethical framework meets the directive in Section 1(d) of the Executive Order on AI, which calls on the United States to "foster public trust and confidence in AI technologies." Professional engineers, with their high level of technical proficiency and professional obligations, are fundamental to developing this ethical framework.

NIST also asks about AI technical standards and tools that have been developed, including specifics regarding the existing standards and tools. NSPE has developed an Autonomous Vehicle Policy Guide[2], and its principles of ethics and public safety can be easily extended to the broader field of artificial intelligence. NSPE's standards for autonomous vehicle technology are targeted at that subset of artificial intelligence but are broad enough to be applied to world of AI.

Rather than allowing individual organizations to establish their own artificial intelligence standards, NSPE urges NIST to create those standards so that they are universal and uniform.

In summation, NSPE urges NIST to include licensed professional engineers in the creation of technical and ethical standards for artificial intelligence, and to prioritize public health, safety, and welfare throughout the process.

NSPE greatly appreciates this opportunity to comment on the National Institute of Standards and Technology's development of AI standards. Any further questions can be directed to Stephanie Hamilton, government relations manager, at shamilton@nspe.org.

Sincerely,

Michael Aitken, P.E., F.NSPE
President

Cc: NSPE Board of Directors

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[2] https://www.nspe.org/sites/default/files/resources/pdfs/Autonomous-Vehicles-A-Public-Regulatory-Policy-Guide.pdf