

AI RFI Responses, October 26, 2018

Update to the 2016 National Artificial Intelligence Research and Development Strategic Plan RFI Responses

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Information Technology Industry Council (ITI) Comment on the Request for Information (RFI) to the National Artificial Intelligence Research and Development (R&D) Strategic Plan

October 26, 2018

Mr. Faisal D'Souza
National Coordination Office
National Science Foundation
Alexandria, Virginia 22314

Dear Mr. Faisal D'Souza,

The Information Technology Industry Council (ITI), appreciates the opportunity to submit the following comments on the National Artificial Intelligence Research and Development Strategic Plan for the National Science Foundation.

ITI, the global voice of the tech sector, is the premier advocate and thought leader in the United States and around the world for the information and communications technology (ICT) industry, and represents leading companies from across the ICT sector, including hardware, software, digital services, semiconductor, network equipment, cybersecurity and Internet companies. ITI seeks policy solutions for the increasingly connected world powered by the continuous rise of emerging technologies such as AI. AI is a suite of technologies capable of learning, reasoning, adapting, and performing tasks in ways inspired by the human mind. We are already experiencing how AI benefits people, society, and the economy in a diverse array of fields. Startups, medium-sized companies, and larger technology companies have all developed AI systems to help solve some of society's most pressing problems.

These transformations should not cloud the fact that AI is an active area of research that is constantly evolving and improving. To harness this growth, it is vital to both utilize AI's potential benefits while monitoring its impacts carefully, and research and development (R&D) is a critical enabler of those possibilities. ITI is committed to a set of industry principles that embody our promise to the responsible design of AI.¹ Our recommendations to the AI R&D strategic plan will prove mutually beneficial to both policy makers and the private sector as they encourage the expenditure of R&D resources to facilitate growth and opportunity across industry.

In summary, we encourage the national AI R&D strategy to focus on the following actions:

- Continue to identify ways to incorporate private sector participation to ensure AI is achieved and advanced in a fashion that is broadly beneficial to all Americans, through the NSTC and through other fora.
- Seek alignment with federal privacy initiatives for regulatory coherence and to promote privacy by design for responsible use of AI.
- Provide sustained engagement in AI standardization activities and collaborate with industry on the development of voluntary, consensus-based international standards, such as ISO SC42 AI.
- Facilitate the adoption of AI by encouraging data sharing with meaningful stakeholders and making datasets accessible to the broader AI research community.

¹ <https://www.itic.org/resources/AI-Policy-Principles-FullReport2.pdf>



- Continue building a strong government framework to integrate resources and set goals for AI to grow and prosper.
- Increase government R&D investment and promote scientific collaboration benefiting US interests.

We go into more depth on each of these recommended actions below.

Build Strong Public Private Partnerships

The White House AI Summit and the establishment of the AI advisory committee last May were positive first steps to forge better collaboration between industry, government, and academia on AI. We cannot emphasize enough the rapid development and adoptions happening in the commercial space, and the need for consistent dialogues between the government and the private sector to inform research priorities, from both technical and social impact perspectives. More specifically, government should invest further in research that supports the responsible development of AI, including areas that improve the accountability, safety, fairness, and privacy of AI systems. We recommend a regular cadence of dialogues such as quarterly discussions between the public and private sector. We encourage the AI Select Committee to continue to identify ways to incorporate regular private sector participation to ensure AI is achieved and advanced in a fashion that is broadly beneficial to all Americans.

Many emerging AI technologies are designed to perform a specific task, such as assisting human employees and making tasks easier. Our ability to adapt to rapid technological change is critical and we must continue to be prepared to address the implications of AI on the existing and future workforce. By leveraging public-private partnerships – especially between industry partners, academic institutions, and governments – we can expedite AI R&D, democratize access, prioritize diversity and inclusion, and prepare our workforce for the jobs of the future. We encourage government to take a flexible policy approach by evaluating existing policy tools and using caution before adopting new laws, regulations, or taxes that may inadvertently or unnecessarily impede the responsible development and use of AI. We recommend government to tap into the commercial space and form more public-private partnerships to maximize the potential of AI. For example, the Japanese government set up its country’s biggest research center through the government-backed Riken Institute, which involved 20 companies and research entities, with the goal of developing applicable AI in the medical and financial fields within 10 years.²

Ensure Privacy Protection and Trust

Like all technologies, AI operates in our existing policy and regulatory framework, and accordingly, personal data and related privacy concerns must be taken into consideration. Since data is the gasoline that fuels AI engines, personal data and related privacy concerns must be taken into consideration. We face important questions around striking the right balance between various objectives in the responsible development of AI, such as ensuring accountability, which requires some level of visibility into an AI system, while also protecting privacy. On top of a dynamic international environment of laws that are not always in alignment, the US currently has a patchwork of privacy policies and regulations that could become more complex and fragmented if additional states follow California’s lead in establishing state-level consumer privacy laws. Conflicts across these laws could have a chilling effect on AI advancement, as well as other data-driven technologies. To maximize the use of AI, we need strong, globally-accepted privacy standards to enable trust and interoperability, and to incentivize investment in research to develop new techniques for even stronger privacy and security guarantees. To achieve this, we

² <https://asia.nikkei.com/Business/Technology/Researchers-to-develop-Japanese-style-AI>



recommend the development of a national privacy law in the United States, consistent with *ITI's Framework to Advance Interoperable Rules on Privacy*, which was released this month.³ The AI R&D strategic plan should also seek alignment with the NIST Privacy Framework, launched earlier this month and currently under development.

Promote Sustained Engagement on AI Standardization Activities

Governments and industry are actively considering the best path forward regarding laws, regulations and policy for artificial intelligence. The role of standardization is a key factor that can help form a bridge between written rules and practical implementations. ITI advocates that any related policy considerations adopt the long-standing principles of voluntary, industry-led standardization. AI international standards should be produced in rules- and consensus- based standards development organizations which promote collaboration between industry and government participants. Governments should maintain technology neutral policies that limit mandatory implementation requirements (e.g. for public safety considerations) in favor of voluntary implementation and self-attestation. To the extent compliance requirements are established, they should adhere to international best practices of conformity assessment. We offer additional thoughts on how the USG should approach AI standards development in the attached appendix.

Facilitate a Data Sharing Environment

Many AI research fields and practical applications require high-quality training data. Scale is a critical component of effectively applying AI, and many companies leverage the cloud to secure needed scalability and resources. The sharing of and making more data available would allow companies and researchers to better train AI algorithms, and government could maximize the value of its digital assets by allowing free access to machine-learning friendly datasets for R&D purposes. Stakeholders can more efficiently conduct such research if there is open access to government data, provided it is done so in a way to sufficiently protect privacy and security. For example, France has recently made a \$1.5 billion commitment and endorsed a national AI strategy that includes a plan for French states to make public datasets available for reuse by others in AI applications that serve the public interest, such as in the fields of health and the environment.⁴

Currently, the United States does not have a national strategy on data access and data sharing for public interest applications. It is not always clear who owns data or how much belongs in the public space. These uncertainties limit the innovative economy and act as a drag on academic research. We encourage the government to facilitate the adoption of AI by encouraging data sharing with meaningful stakeholders and making datasets accessible to the broader AI research community. We would like to provide the following specific recommendations regarding data sharing:

- Create opportunities to collect and distribute data responsibly. Allow US citizens the right to opt-in to data collection by providing meaningful consent through services they already use, such as: health care exchanges, tax payments, Social Security, and Medicare.
- Broker more data-sharing agreements. (Examples include: UK open banking initiative, IBM Mastercard partnership, US Pharma Cancer research).
- Invest in AI to monitor and improve AI as data is collected and ages.

³ https://www.itic.org/public-policy/FINALFrameworktoAdvanceInteroperableRules%28FAIR%29onPrivacyFinal_NoWatermark.pdf

⁴ https://www.aiforhumanity.fr/pdfs/MissionVillani_Report_ENG-VF.pdf



- Beyond consumer data, the government must also play a leading role in collecting data that will improve core supply chain issues such as predictive maintenance and safety.

Advance the Implementation Framework for AI R&D Investment

While many countries around the world are releasing national strategies on AI and identifying funding projects to take advantage of this new emerging technology, we support the Administration's efforts to update the United States approach, such as through this RFI. We hope this is only the beginning and we encourage the Administration to continue refining the United States strategy in partnership with the private sector, academia, and civil society. This includes implementation of the R&D framework from the 2016 strategic plan led by the Networking and Information Technology Research and Development (NITRD) program. Another area the Administration should consider updating is identifying the priority areas, underlying resources, and agency-specific responsibilities to expedite the national research agenda on AI. The interagency should increase efforts to incorporate the private sector and academia in their work. In the United States, AI research is currently led by academia and the private sector, while many governmental efforts in this space are more scattered than integrated.

We encourage the U.S. government to map out a clear framework with funding commitments and timelines. One promising example of a framework the Administration could look to as a model, and to develop in partnership with industry, can be found in Canada. Canada recently announced a proposed \$125 million to launch the Pan-Canadian Artificial Intelligence Strategy, delivered through the Canadian Institute for Advanced Research (CIFAR), and including major goals and concrete programs.⁵ The European Union has introduced a strategy to promote the growth of AI technology with a €20 billion target by 2020. The EU identified three approaches through public and private funding to boost investment in areas such as accessibility, data and deep learning, ethics, and social-economic changes.⁶ If the U.S. is to remain the global market leader in AI, we need a strong government framework to integrate resources and set goals for AI to grow and prosper. We would be happy to be a partner in developing a similar comprehensive plan with the Administration.

Continue Global Leadership in AI R&D

Government plays an important role as an essential source of funding for long-term, high-risk research initiatives, and we recommend investment in diverse fields of AI research including cyber-defense, data analytics, fraud detection, robotics, human augmentation, natural language processing, and visualization and perception technology. Advanced algorithms, specialized computing hardware, high-quality data, and, most importantly, skilled human expertise are essential to enabling machine learning and the success of AI. To remain the leader in AI R&D, the United States must continue to promote an entrepreneurial environment, research network, and openness to talent. According to a recent congressional report from the House Oversight and Government Reform committee,⁷ one reason the U.S. has led the world in AI technological development is due to the government's prior commitments to invest heavily in R&D. In 2015, for example, the United States led the world in total R&D expenditures, with combined public and private sector spending totaling \$497 billion. However, China may surpass the U.S. in R&D spending on AI by the end of 2018. Maintaining American leadership in AI related R&D efforts will not only require continued government R&D investment, but in promoting scientific collaboration among like-minded nations. Additionally, maintaining the United States' historical global

⁵ <https://www.cifar.ca/ai/pan-canadian-artificial-intelligence-strategy>

⁶ http://europa.eu/rapid/press-release_IP-18-3362_en.htm

⁷ <https://oversight.house.gov/wp-content/uploads/2018/09/AI-White-Paper-.pdf>



leadership in AI R&D will require strong political support from Congress and the Executive Branch, as well as active participation from the private sector and society.

ITI has been pleased to respond to this RFI, and we would like to reiterate our industry's commitment to help serve as the a catalyst in preparing us all for an AI world, while helping to drive collaboration among public and private sector stakeholders. We look forward to working with NSF and other USG stakeholders to ensure AI can maximize potential societal benefits while mitigating risks and finding the best solutions.

Sincerely yours,

John Miller
Vice President, Policy
Information Technology Industry Council (ITI)



AI Standardization Appendix

Recommendations for U.S. Government Engagement on Standards

- Provide sustained engagement in AI standardization activities and collaborate with industry on the development of voluntary, consensus-based international standards, such as ISO SC42 AI.
- Distinguish between appropriate and inappropriate uses and development of standards as stated in this paper for U.S. policies, legislation, and engagements with other governments.
- Establish interagency coordination within the U.S. Federal Government regarding AI standards and policy development and ensure that such efforts are aligned with existing cybersecurity, privacy and data-related policies and practices.
- Support U.S. leaders in international standards organizations. Serving as a chair of an international committee or working group is a multi-year commitment and a significant burden for one company to absorb but benefits all industry. The federal government can support U.S. leadership to ensure that international standards organizations remain productive, fair venues for all stakeholders.

Appropriate Development and Use of Standards for Artificial Intelligence

Standards should:

- Establish consensus around AI foundational concepts, management, and governance practices.
- Frame the concepts and recommended practices to establish trustworthiness of AI inclusive of privacy, cybersecurity, safety, reliability, and transparency.
- Be sector and application-specific when used for AI evaluation.
- Enable non-discriminatory market access for all interested parties.
- Reduce barriers to market entry and spur innovation in the marketplace to the benefit of society.
- Be performance-based when enabling technical interoperability.
- Work for the net benefit of the international community and be broadly applicable without prejudice to cultural norms.

Inappropriate Development and Use of Standards for Artificial Intelligence

Standards should not:

- Establish barriers to trade.
- Be designed to only advance the industries or objectives of a single nation or economic bloc.
- Be used to replace the development or updating of national laws and regulations applicable to AI.
- Impose the culture or ethics of any one nation in evaluating the outcomes/uses of AI solutions.
- Limit the pace of AI innovation.