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Title 3—

The President

Executive Order 13859 of February 11, 2019

Maintaining American Leadership in Artificial Intelligence

By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:

Section 1. *Policy and Principles.* Artificial Intelligence (AI) promises to drive growth of the United States economy, enhance our economic and national security, and improve our quality of life. The United States is the world leader in AI research and development (R&D) and deployment. Continued American leadership in AI is of paramount importance to maintaining the economic and national security of the United States and to shaping the global evolution of AI in a manner consistent with our Nation's values, policies, and priorities. The Federal Government plays an important role in facilitating AI R&D, promoting the trust of the American people in the development and deployment of AI-related technologies, training a workforce capable of using AI in their occupations, and protecting the American AI technology base from attempted acquisition by strategic competitors and adversarial nations. Maintaining American leadership in AI requires a concerted effort to promote advancements in technology and innovation, while protecting American technology, economic and national security, civil liberties, privacy, and American values and enhancing international and industry collaboration with foreign partners and allies. It is the policy of the United States Government to sustain and enhance the scientific, technological, and economic leadership position of the United States in AI R&D and deployment through a coordinated Federal Government strategy, the American AI Initiative (Initiative), guided by five principles:

(a) The United States must drive technological breakthroughs in AI across the Federal Government, industry, and academia in order to promote scientific discovery, economic competitiveness, and national security.

(b) The United States must drive development of appropriate technical standards and reduce barriers to the safe testing and deployment of AI technologies in order to enable the creation of new AI-related industries and the adoption of AI by today's industries.

(c) The United States must train current and future generations of American workers with the skills to develop and apply AI technologies to prepare them for today's economy and jobs of the future.

(d) The United States must foster public trust and confidence in AI technologies and protect civil liberties, privacy, and American values in their application in order to fully realize the potential of AI technologies for the American people.

(e) The United States must promote an international environment that supports American AI research and innovation and opens markets for American AI industries, while protecting our technological advantage in AI and protecting our critical AI technologies from acquisition by strategic competitors and adversarial nations.

Sec. 2. *Objectives.* Artificial Intelligence will affect the missions of nearly all executive departments and agencies (agencies). Agencies determined to be implementing agencies pursuant to section 3 of this order shall pursue six strategic objectives in furtherance of both promoting and protecting American advancements in AI:

(a) Promote sustained investment in AI R&D in collaboration with industry, academia, international partners and allies, and other non-Federal entities

to generate technological breakthroughs in AI and related technologies and to rapidly transition those breakthroughs into capabilities that contribute to our economic and national security.

(b) Enhance access to high-quality and fully traceable Federal data, models, and computing resources to increase the value of such resources for AI R&D, while maintaining safety, security, privacy, and confidentiality protections consistent with applicable laws and policies.

(c) Reduce barriers to the use of AI technologies to promote their innovative application while protecting American technology, economic and national security, civil liberties, privacy, and values.

(d) Ensure that technical standards minimize vulnerability to attacks from malicious actors and reflect Federal priorities for innovation, public trust, and public confidence in systems that use AI technologies; and develop international standards to promote and protect those priorities.

(e) Train the next generation of American AI researchers and users through apprenticeships; skills programs; and education in science, technology, engineering, and mathematics (STEM), with an emphasis on computer science, to ensure that American workers, including Federal workers, are capable of taking full advantage of the opportunities of AI.

(f) Develop and implement an action plan, in accordance with the National Security Presidential Memorandum of February 11, 2019 (Protecting the United States Advantage in Artificial Intelligence and Related Critical Technologies) (the NSPM) to protect the advantage of the United States in AI and technology critical to United States economic and national security interests against strategic competitors and foreign adversaries.

Sec. 3. *Roles and Responsibilities.* The Initiative shall be coordinated through the National Science and Technology Council (NSTC) Select Committee on Artificial Intelligence (Select Committee). Actions shall be implemented by agencies that conduct foundational AI R&D, develop and deploy applications of AI technologies, provide educational grants, and regulate and provide guidance for applications of AI technologies, as determined by the co-chairs of the NSTC Select Committee (implementing agencies).

Sec. 4. *Federal Investment in AI Research and Development.*

(a) Heads of implementing agencies that also perform or fund R&D (AI R&D agencies), shall consider AI as an agency R&D priority, as appropriate to their respective agencies' missions, consistent with applicable law and in accordance with the Office of Management and Budget (OMB) and the Office of Science and Technology Policy (OSTP) R&D priorities memoranda. Heads of such agencies shall take this priority into account when developing budget proposals and planning for the use of funds in Fiscal Year 2020 and in future years. Heads of these agencies shall also consider appropriate administrative actions to increase focus on AI for 2019.

(b) Heads of AI R&D agencies shall budget an amount for AI R&D that is appropriate for this prioritization.

(i) Following the submission of the President's Budget request to the Congress, heads of such agencies shall communicate plans for achieving this prioritization to the OMB Director and the OSTP Director each fiscal year through the Networking and Information Technology Research and Development (NITRD) Program.

(ii) Within 90 days of the enactment of appropriations for their respective agencies, heads of such agencies shall identify each year, consistent with applicable law, the programs to which the AI R&D priority will apply and estimate the total amount of such funds that will be spent on each such program. This information shall be communicated to the OMB Director and OSTP Director each fiscal year through the NITRD Program.

(c) To the extent appropriate and consistent with applicable law, heads of AI R&D agencies shall explore opportunities for collaboration with non-

Federal entities, including: the private sector; academia; non-profit organizations; State, local, tribal, and territorial governments; and foreign partners and allies, so all collaborators can benefit from each other's investment and expertise in AI R&D.

Sec. 5. *Data and Computing Resources for AI Research and Development.*

(a) Heads of all agencies shall review their Federal data and models to identify opportunities to increase access and use by the greater non-Federal AI research community in a manner that benefits that community, while protecting safety, security, privacy, and confidentiality. Specifically, agencies shall improve data and model inventory documentation to enable discovery and usability, and shall prioritize improvements to access and quality of AI data and models based on the AI research community's user feedback.

(i) Within 90 days of the date of this order, the OMB Director shall publish a notice in the *Federal Register* inviting the public to identify additional requests for access or quality improvements for Federal data and models that would improve AI R&D and testing. Additionally, within 90 days of the date of this order, OMB, in conjunction with the Select Committee, shall investigate barriers to access or quality limitations of Federal data and models that impede AI R&D and testing. Collectively, these actions by OMB will help to identify datasets that will facilitate non-Federal AI R&D and testing.

(ii) Within 120 days of the date of this order, OMB, including through its interagency councils and the Select Committee, shall update implementation guidance for Enterprise Data Inventories and Source Code Inventories to support discovery and usability in AI R&D.

(iii) Within 180 days of the date of this order, and in accordance with the implementation of the Cross-Agency Priority Goal: Leveraging Federal Data as a Strategic Asset, from the March 2018 President's Management Agenda, agencies shall consider methods of improving the quality, usability, and appropriate access to priority data identified by the AI research community. Agencies shall also identify any associated resource implications.

(iv) In identifying data and models for consideration for increased public access, agencies, in coordination with the Senior Agency Officials for Privacy established pursuant to Executive Order 13719 of February 9, 2016 (Establishment of the Federal Privacy Council), the heads of Federal statistical entities, Federal program managers, and other relevant personnel shall identify any barriers to, or requirements associated with, increased access to and use of such data and models, including:

(A) privacy and civil liberty protections for individuals who may be affected by increased access and use, as well as confidentiality protections for individuals and other data providers;

(B) safety and security concerns, including those related to the association or compilation of data and models;

(C) data documentation and formatting, including the need for interoperable and machine-readable data formats;

(D) changes necessary to ensure appropriate data and system governance; and

(E) any other relevant considerations.

(v) In accordance with the President's Management Agenda and the Cross-Agency Priority Goal: Leveraging Data as a Strategic Asset, agencies shall identify opportunities to use new technologies and best practices to increase access to and usability of open data and models, and explore appropriate controls on access to sensitive or restricted data and models, consistent with applicable laws and policies, privacy and confidentiality protections, and civil liberty protections.

(b) The Secretaries of Defense, Commerce, Health and Human Services, and Energy, the Administrator of the National Aeronautics and Space Administration, and the Director of the National Science Foundation shall, to the extent appropriate and consistent with applicable law, prioritize the allocation of high-performance computing resources for AI-related applications through:

(i) increased assignment of discretionary allocation of resources and resource reserves; or

(ii) any other appropriate mechanisms.

(c) Within 180 days of the date of this order, the Select Committee, in coordination with the General Services Administration (GSA), shall submit a report to the President making recommendations on better enabling the use of cloud computing resources for federally funded AI R&D.

(d) The Select Committee shall provide technical expertise to the American Technology Council on matters regarding AI and the modernization of Federal technology, data, and the delivery of digital services, as appropriate.

Sec. 6. *Guidance for Regulation of AI Applications.*

(a) Within 180 days of the date of this order, the OMB Director, in coordination with the OSTP Director, the Director of the Domestic Policy Council, and the Director of the National Economic Council, and in consultation with any other relevant agencies and key stakeholders as the OMB Director shall determine, shall issue a memorandum to the heads of all agencies that shall:

(i) inform the development of regulatory and non-regulatory approaches by such agencies regarding technologies and industrial sectors that are either empowered or enabled by AI, and that advance American innovation while upholding civil liberties, privacy, and American values; and

(ii) consider ways to reduce barriers to the use of AI technologies in order to promote their innovative application while protecting civil liberties, privacy, American values, and United States economic and national security.

(b) To help ensure public trust in the development and implementation of AI applications, OMB shall issue a draft version of the memorandum for public comment before it is finalized.

(c) Within 180 days of the date of the memorandum described in subsection (a) of this section, the heads of implementing agencies that also have regulatory authorities shall review their authorities relevant to applications of AI and shall submit to OMB plans to achieve consistency with the memorandum.

(d) Within 180 days of the date of this order, the Secretary of Commerce, through the Director of the National Institute of Standards and Technology (NIST), shall issue a plan for Federal engagement in the development of technical standards and related tools in support of reliable, robust, and trustworthy systems that use AI technologies. NIST shall lead the development of this plan with participation from relevant agencies as the Secretary of Commerce shall determine.

(i) Consistent with OMB Circular A–119, this plan shall include:

(A) Federal priority needs for standardization of AI systems development and deployment;

(B) identification of standards development entities in which Federal agencies should seek membership with the goal of establishing or supporting United States technical leadership roles; and

(C) opportunities for and challenges to United States leadership in standardization related to AI technologies.

(ii) This plan shall be developed in consultation with the Select Committee, as needed, and in consultation with the private sector, academia, nongovernmental entities, and other stakeholders, as appropriate.

Sec. 7. *AI and the American Workforce.*

(a) Heads of implementing agencies that also provide educational grants shall, to the extent consistent with applicable law, consider AI as a priority area within existing Federal fellowship and service programs.

(i) Eligible programs for prioritization shall give preference to American citizens, to the extent permitted by law, and shall include:

(A) high school, undergraduate, and graduate fellowship; alternative education; and training programs;

(B) programs to recognize and fund early-career university faculty who conduct AI R&D, including through Presidential awards and recognitions;

(C) scholarship for service programs;

(D) direct commissioning programs of the United States Armed Forces; and

(E) programs that support the development of instructional programs and curricula that encourage the integration of AI technologies into courses in order to facilitate personalized and adaptive learning experiences for formal and informal education and training.

(ii) Agencies shall annually communicate plans for achieving this prioritization to the co-chairs of the Select Committee.

(b) Within 90 days of the date of this order, the Select Committee shall provide recommendations to the NSTC Committee on STEM Education regarding AI-related educational and workforce development considerations that focus on American citizens.

(c) The Select Committee shall provide technical expertise to the National Council for the American Worker on matters regarding AI and the American workforce, as appropriate.

Sec. 8. *Action Plan for Protection of the United States Advantage in AI Technologies.*

(a) As directed by the NSPM, the Assistant to the President for National Security Affairs, in coordination with the OSTP Director and the recipients of the NSPM, shall organize the development of an action plan to protect the United States advantage in AI and AI technology critical to United States economic and national security interests against strategic competitors and adversarial nations.

(b) The action plan shall be provided to the President within 120 days of the date of this order, and may be classified in full or in part, as appropriate.

(c) Upon approval by the President, the action plan shall be implemented by all agencies who are recipients of the NSPM, for all AI-related activities, including those conducted pursuant to this order.

Sec. 9. *Definitions.* As used in this order:

(a) the term "artificial intelligence" means the full extent of Federal investments in AI, to include: R&D of core AI techniques and technologies; AI prototype systems; application and adaptation of AI techniques; architectural and systems support for AI; and cyberinfrastructure, data sets, and standards for AI; and

(b) the term "open data" shall, in accordance with OMB Circular A–130 and memorandum M–13–13, mean "publicly available data structured in a way that enables the data to be fully discoverable and usable by end users."

Sec. 10. *General Provisions.*

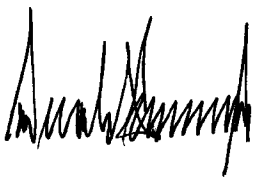
(a) Nothing in this order shall be construed to impair or otherwise affect:

(i) the authority granted by law to an executive department or agency, or the head thereof; or

(ii) the functions of the Director of OMB relating to budgetary, administrative, or legislative proposals.

(b) This order shall be implemented consistent with applicable law and subject to the availability of appropriations.

(c) This order is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.



THE WHITE HOUSE,
February 11, 2019.

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