Expressing the sense of Congress with respect to the principles that should guide the national artificial intelligence strategy of the United States.

IN THE HOUSE OF REPRESENTATIVES

Mr. Hurd of Texas submitted the following concurrent resolution; which was referred to the Committee on ______________________

CONCURRENT RESOLUTION

Expressing the sense of Congress with respect to the principles that should guide the national artificial intelligence strategy of the United States.

Resolved by the House of Representatives (the Senate concurring),

SECTION 1. GUIDING PRINCIPLES OF THE NATIONAL ARTIFICIAL INTELLIGENCE STRATEGY OF THE UNITED STATES.

(a) FINDINGS.—Congress finds the following:

(1) In general, artificial intelligence is the ability of a computer system to solve problems and to
perform tasks that would otherwise require human intelligence.

(2) Artificial intelligence will transform the nature of work and nearly all aspects of the United States economy.

(3) Artificial intelligence will have immense implications for the security of the United States and its allies and partners.

(4) Investments made by the United States Government will be instrumental in the research and development of artificial intelligence and artificial intelligence-enabling technologies, as it has been for many of the world’s revolutionary technologies.

(5) Developing and using artificial intelligence in ways that are ethical, reduce bias, promote fairness, and protect privacy is essential for fostering a positive effect on society consistent with core United States values.

(6) The Obama Administration released the Big Data Research and Development Initiative in 2012, Executive Order 13702 (relating to creating a national strategic computing initiative) in 2015, and the National Artificial Intelligence Research and Development Strategic Plan in 2016.
(7) The Trump Administration released Executive Order 13859 (relating to maintaining American leadership in artificial intelligence), updated the National Artificial Intelligence Research and Development Strategic Plan in 2019, and released Office of Management and Budget guidance for regulation of artificial intelligence applications in 2020.

(8) In May 2019, the Organisation for Economic Co-operation and Development (OECD) adopted the OECD Principles on Artificial Intelligence, which included the principles of inclusive growth, sustainable development and well-being, human-centered values and fairness, transparency and explainability, robustness, security and safety, and accountability.

(9) In June 2020, the G7 and several partners launched the Global Partnership on Artificial Intelligence to increase cooperation focused around the areas of responsible artificial intelligence, data governance, the future of work, and innovation and commercialization.

(10) Several United States allies, including Canada, Denmark, Estonia, France, Finland, Germany, the Netherlands, and South Korea, have pub-
lished national artificial intelligence strategies with
detailed funding commitments.

(11) In 2017, China published a national artificial intelligence strategy that detailed the Chinese Communist Party’s goal to become the world’s primary artificial intelligence innovation center by 2030.

(12) In 2019, Russia published a national artificial intelligence strategy and, in 2017, Russian President Vladimir Putin said that “whoever becomes the leader in this sphere will become the ruler of the world”.

(13) In 2018, the Subcommittee on Information Technology of the Committee on Oversight and Government Reform of the House of Representatives, under the leadership of Chairman Will Hurd and Ranking Member Robin Kelly, published “Rise of the Machines: Artificial Intelligence and its Growing Impact on U.S. Policy” following a series of hearings on artificial intelligence with experts from academia, industry, and government, concluding that “the United States cannot maintain its global leadership in artificial intelligence absent political leadership from Congress and the Executive Branch”.

(14) Congress serves a critical role in establishing national priorities, funding scientific research and development, supporting emerging technologies, and sustaining cooperation with our allies to protect the national security of the United States.

(b) NATIONAL ARTIFICIAL INTELLIGENCE STRATEGY PRINCIPLES.—It is the sense of Congress that the following principles should guide the national artificial intelligence strategy of the United States:

1. Global leadership.
2. A prepared workforce.
4. Effective research and development.
5. Ethics, reduced bias, fairness, and privacy.

SEC. 2. GLOBAL LEADERSHIP.

It is the sense of Congress that the United States should take a global leadership role in artificial intelligence.

SEC. 3. WORKFORCE PREPARATION.

(a) FINDINGS.—Congress finds the following:

1. Artificial intelligence and automation will present significant challenges to workers in affected industries, but will also automate routine and repetitive tasks to give workers more time to focus on
other tasks that involve social and creative intelligence.

(2) Closing the artificial intelligence talent gap in the short and medium-term will require a targeted approach to identifying and filling roles that require artificial intelligence skills.

(3) The United States should take a leadership role in the artificial intelligence-driven economy by filling the artificial intelligence talent gap and preparing United States workers for the jobs of the future, including by prioritizing inclusivity and equal opportunity.

(4) Departments and agencies of the Federal Government are increasingly using data to administer benefits, assess outcomes, and fulfill other mission-critical activities.

(5) Effectively creating, managing, and implementing artificial intelligence related research and development grants will require technical expertise.

(6) Departments and agencies of the Federal Government will need to be able to recruit employees with technical expertise.

(7) The United States needs a conceptual restructuring of education to reflect the necessity of a lifelong learning process.
(8) Artificial intelligence will exacerbate the unpredictable nature of what skills will be in demand or obsolete in the future.

(9) An artificial intelligence-driven economy will require social and creative intelligence in addition to technical skills.

(10) Lifelong learning and skill acquisition can increase flexibility with respect to career opportunities.

(11) The United States will need to be able to attract the best artificial intelligence researchers and computer scientists from around the world to work in the United States.

(b) MATTERS TO CONSIDER.—

(1) EDUCATION.—

(A) IN GENERAL.—It is the sense of Congress that the Federal Government should—

(i) increase funding for existing technology education programs;

(ii) develop voluntary guidelines for universities with respect to how to incorporate a liberal arts curriculum, including requirements for courses with respect to ethics, into science, technology, engineering, mathematics, and computer science
curriculums and how to incorporate statistics and data-driven decision making into complementary fields;

(iii) ensure that new education pathways incorporate industry-sponsored, standards-based, and recognized stackable credentials, including certifications and certificates, as part of degree tracks; and

(iv) develop strategic partnerships with the private sector to create a Federal program for the purposes of increasing the relevant skills of current educators and ensuring that more teachers are available in school districts that are under-served with respect to science, technology, engineering, mathematics, and computer science educators.

(B) Education modernization studies.—It is the sense of Congress that congressional committees should conduct studies with respect to how to adapt the education system in the United States to prepare students and workers for an artificial intelligence-driven economy, including studies with respect to the following:
(i) How States, universities, and local educational agencies can—

(I) update curriculums to include relevant subjects;

(II) make education more affordable; and

(III) promote inclusivity for under-represented communities and marginalized groups.

(ii) How computer and data science education can be taught to students at an earlier age.

(iii) How to encourage colleges and State institutions to update their credit transfer policies to make it easier for students to transfer their course credits.

(2) PROMOTING DIVERSITY.—It is the sense of Congress that the Federal Government should—

(A) implement policies to ensure the inclusion of under-represented communities and marginalized groups in existing technology education programs;

(B) create programs for the purpose of exploring ways to increase workforce diversity and
the retention of diverse talent at all levels of an
organization; and

(C) review recruitment and retention poli-
cies with respect to under-represented commu-
nities and marginalized groups for the purpose
of determining if such policies require modifica-
tion for the technology sector.

(3) ARTIFICIAL INTELLIGENCE TRAINING.—

(A) IN GENERAL.—It is the sense of Con-
gress that the Federal Government should as-
sess the effectiveness of current job training
and safety net programs with respect to how
adept such programs are likely to be in address-
ing job disruptions and job creations that result
from the increased use of artificial intelligence.

(B) WORK-BASED TRAINING PROGRAMS.—
It is the sense of Congress that the Federal
Government should consider the importance of
work-based training programs, including Last
Mile Training programs, in preparing the
United States workforce for an artificial intel-
ligence-driven economy, including by—

(i) undertaking studies to determine

the best methods to promote such pro-
grams and ensure such programs are accredited;

(ii) ensuring that such programs have the opportunity to receive Federal funding under relevant Federal programs; and

(iii) creating a pilot program that includes job training programs as programs for which individuals may be eligible to receive a Federal Pell Grant.

(4) HIRING PRACTICES.—It is the sense of Congress that the Federal Government should—

(A) allow technical experts to use their skills to assist multiple departments and agencies of the Federal Government;

(B) create fellowship programs with respect to artificial intelligence education for the purpose of increasing the number of individuals with artificial intelligence expertise that the Federal Government can recruit;

(C) include in the criteria for recruiting for artificial intelligence jobs the consideration of a multi-disciplinary set of skills and an understanding of ethics;

(D) review hiring practices for employment in the Federal Government for the purpose of
ensuring that such practices do not disqualify individuals with a less traditional background, due to a lack of degree attainment, who have artificial intelligence skills; and

(E) conduct studies with respect to best practices for hiring on the basis of a skills-based approach.

SEC. 4. NATIONAL SECURITY.

(a) FINDINGS.—Congress finds the following:

(1) Artificial intelligence will have immense implications for national and international security.

(2) Artificial intelligence tools and systems can augment human intelligence through human-machine collaboration and teaming across the national security ecosystem.

(3) Ensuring that the public trusts the ability of the military to ethically use artificial intelligence and that human operators in human-machine teams trust the artificial intelligence will be critical factors with respect to the successful implementation of artificial intelligence systems.

(4) The continued proliferation of national artificial intelligence strategies, plans, statements, and investments demonstrates the increase in global competition in this area.
(5) New paradigms will be required to effectively test artificial intelligence and to ensure that it is reliable and stable.

(6) Export and investment controls will be important policy tools to prevent the acquisition of sensitive artificial intelligence and artificial intelligence-enabling technologies, including hardware such as semiconductors and semiconductor manufacturing equipment, by China, Russia, and other adversaries.

(b) Matters to Consider.—

(1) Collaboration with Foreign Nations.—It is the sense of Congress that the United States should—

(A) leverage its alliances to promote democratic principles, foster research collaboration, and develop common standards with respect to artificial intelligence;

(B) promote the interoperability of artificial intelligence for the purpose of strengthening alliances;

(C) along with allies, take a leading role in international forums to set artificial intelligence principles, norms, and standards; and

(D) undertake efforts to engage with China and Russia with respect to—
(i) shared concerns about artificial intelligence safety; and

(ii) confidence-building by establishing crisis communications procedures designed to reduce the likelihood of unintentional use and the risk of escalation with respect to artificial intelligence systems.

(2) FOREIGN ARTIFICIAL INTELLIGENCE CAPABILITY.—It is the sense of Congress that national security agencies should consider conditions-based and capabilities-based approaches when evaluating global artificial intelligence capabilities.

(3) DEVELOPMENT AND DEPLOYMENT.—It is the sense of Congress that national security agencies should—

(A) collaborate with experts in academia, the private sector, and other departments and agencies of the Federal Government to develop best practices for testing, evaluation, validation, and verification of artificial intelligence systems;

(B) devote institutional resources, including investing in research, for the purpose of promoting trustworthiness with respect to human-machine teams;
(C) engage with experts to develop guidelines for the ethical development and use of artificial intelligence systems; and

(D) prioritize the development of artificial intelligence systems to cover non-critical tasks until such systems can achieve suitable standards of reliability, interoperability, and security.

(4) EXPORT AND INVESTMENT CONTROLS.—It is the sense of Congress that the United States should collaborate with its allies to prevent the misuse of artificial intelligence systems by China, Russia, and other adversaries.

SEC. 5. RESEARCH AND DEVELOPMENT.

(a) FINDINGS.—Congress finds the following:

(1) Federal funding plays an important role in the research and development cycle.

(2) Federal research and development investments need to be significantly increased to ensure United States leadership in artificial intelligence.

(3) Federally supported research will play an important role in supporting artificial intelligence techniques that are critical to United States artificial intelligence leadership, including by requiring smaller data sets to train artificial intelligence sys-
tems and making more efficient use of computing resources.

(4) Artificial intelligence advances are enabled by Federal research and development investments in other technology sectors because United States competitiveness will depend on strong capabilities across a range of technologies.

(5) Computing power is essential to progress in artificial intelligence development, and the amount of computing power required for artificial intelligence training runs is increasing exponentially.

(6) A new wave of technological advances could be fostered by combining and increasing access to government-owned and government-funded computing and data resources.

(7) Narrowing the digital divide will be essential to creating new job opportunities and stimulating the growth of new technology and innovation clusters to support United States leadership in artificial intelligence.

(8) Incentivizing research and development across the private sector, particularly from smaller companies, will further strengthen the United States innovation ecosystem.
The United States is an attractive research and development partner because of its open democratic society with world-class universities, research institutes, and corporations.

Decades of experience show that joint work with foreign researchers can be done with great benefit and little detriment to United States economic and national security, with the implementation of proper safeguards.

Artificial intelligence standards and measurement are essential to fostering artificial intelligence technologies that are safe, secure, reliable, and comport with the norms and values of the United States.

Metrics are how the artificial intelligence research community guides itself and prioritizes research.

Benchmark tests are necessary to understand the performance of an artificial intelligence system.

Current tests for measuring artificial intelligence range from vague and conceptual to well-defined and mature.

Artificial intelligence measurement methodologies are not static and will require periodic re-
examinations and updates of testing methodologies
to ensure that artificial intelligence systems are
functioning optimally.

(16) United States leadership in global artificial
intelligence standards-setting will help ensure that
artificial intelligence implementations are in accord-
ance with United States strengths and comport with
the interests and values of the United States.

(17) Public engagement is necessary for develop-
ing voluntary standards frameworks to ensure di-
verse perspectives are considered.

(b) MATTERS TO CONSIDER.—

(1) FEDERAL FUNDING.—It is the sense of
Congress that the Federal Government should in-
crease investments in artificial intelligence research
and development and related fields.

(2) COLLABORATION WITH OTHER ENTITIES.—
It is the sense of Congress that the Federal Govern-
ment should collaborate—

(A) with the private sector, civil society,
and academia—

(i) to ensure that the United States
innovation ecosystem leads the world in arti-
ficial intelligence research and develop-
ment; and
(ii) to develop a voluntary standards framework that will help create shared conceptual foundations, terminology, and best practices for artificial intelligence fairness and bias mitigation; and

(B) with science funding organizations in allied countries to establish multilateral teams of artificial intelligence researchers from the public and private sectors to promote talent development and foster partnerships on artificial intelligence research and development.

(3) NARROWING THE DIGITAL DIVIDE.—It is the sense of Congress that the Federal Government should—

(A) expand access to broadband in rural and underserved areas;

(B) expand the availability of affordable graphics processing units and high-performance computers in rural and underserved areas;

(C) improve digital infrastructure in the United States; and

(D) make data created by federally-funded scientific and technical research publicly available with appropriate privacy protections to
provide artificial intelligence researchers with new data sets to train their systems.

(4) **National Computing and Data Resource.**—It is the sense of Congress that Congress should consider establishing a national computing and data resource.

(5) **Access to National Laboratories.**—It is the sense of Congress that the existing supercomputing labs at the national laboratories and technology centers of the Department of Energy should expand opportunities for academics and researchers to access such labs for artificial intelligence research and research related to artificial intelligence.

(6) **Tax Incentives.**—It is the sense of Congress that Congress should examine whether targeted incentives and reforms to the Internal Revenue Code of 1986 would increase private sector research and development, particularly with respect to small cap corporations.

**SEC. 6. Ethics, Reduced Bias, Fairness, and Privacy.**

(a) **Findings.**—Congress finds the following:

(1) The rise of artificial intelligence has great potential to improve quality of life for individuals in the United States, provided it is developed and used
in a manner that is ethical, reduces bias, promotes fairness, and protects privacy.

(2) A diverse artificial intelligence workforce is important for mitigating bias.

(3) The United States is uniquely positioned to leverage its diverse workforce to lead in artificial intelligence.

(4) The starting point for Federal oversight of artificial intelligence should be existing regulatory frameworks.

(5) Regulatory sandboxes can be used to test a product designed to mitigate unintended bias or promote fairness in a small-scale environment and under the supervision of regulators.

(6) Programs should have necessary safeguards and oversight processes.

(7) Artificial intelligence regulatory approaches must consider the level of risk associated with different artificial intelligence applications.

(b) MATTERS TO CONSIDER.—

(1) BIAS MITIGATION.—It is the sense of Congress that departments and agencies of the Federal Government should—

(A) support technical and non-technical research and development to address potential
bias, fairness, and privacy issues in artificial intelligence;

(B) improve access to non-sensitive government datasets to help reduce bias in the data used to train artificial intelligence systems;

(C) implement title II of the Foundations for Evidence-Based Policymaking Act of 2018 (Public Law 115–435; 132 Stat. 5529); and

(D) further develop and release to the public available benchmark datasets, including with proper safeguards to protect privacy, mitigate bias, and promote inclusivity.

(2) REGULATION AND LEGISLATION REVIEW.—

It is the sense of Congress that congressional committees should—

(A) review the range of existing Federal regulations and laws that potentially apply to artificial intelligence;

(B) determine which laws apply to artificial intelligence;

(C) determine if any gaps in appropriate legislation and regulation exist and how such gaps could be addressed;

(D) enact Federal privacy legislation to build trust, prevent harm, prevent ceding lead-
ership in artificial intelligence to other nations, and create international standards; and

(E) conduct regular oversight of artificial intelligence policies in the executive branch within their jurisdiction.

(3) FEDERAL FUNDING.—It is the sense of Congress that Congress should support funding for departments and agencies of the Federal Government interested in adopting programs, including regulatory sandboxes, for the purposes of temporarily approving, testing, and monitoring innovating artificial intelligence tools in limited markets.