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(Original Signature of Member)

116TH CONGRESS  
2D SESSION

# H. CON. RES. \_\_\_\_\_

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

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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.

1       *Resolved by the House of Representatives (the Senate*  
2       *concurring),*

3       **SECTION 1. GUIDING PRINCIPLES OF THE NATIONAL ARTI-**  
4                               **FICIAL INTELLIGENCE STRATEGY OF THE**  
5                               **UNITED STATES.**

6       (a) FINDINGS.—Congress finds the following:

7               (1) In general, artificial intelligence is the abil-  
8       ity of a computer system to solve problems and to

1 perform tasks that would otherwise require human  
2 intelligence.

3 (2) Artificial intelligence will transform the na-  
4 ture of work and nearly all aspects of the United  
5 States economy.

6 (3) Artificial intelligence will have immense im-  
7 plications for the security of the United States and  
8 its allies and partners.

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

14 (5) Developing and using artificial intelligence  
15 in ways that are ethical, reduce bias, promote fair-  
16 ness, and protect privacy is essential for fostering a  
17 positive effect on society consistent with core United  
18 States values.

19 (6) The Obama Administration released the Big  
20 Data Research and Development Initiative in 2012,  
21 Executive Order 13702 (relating to creating a na-  
22 tional strategic computing initiative) in 2015, and  
23 the National Artificial Intelligence Research and De-  
24 velopment Strategic Plan in 2016.

1           (7) The Trump Administration released Execu-  
2           tive Order 13859 (relating to maintaining American  
3           leadership in artificial intelligence), updated the Na-  
4           tional Artificial Intelligence Research and Develop-  
5           ment Strategic Plan in 2019, and released Office of  
6           Management and Budget guidance for regulation of  
7           artificial intelligence applications in 2020.

8           (8) In May 2019, the Organisation for Eco-  
9           nomic Co-operation and Development (OECD)  
10          adopted the OECD Principles on Artificial Intel-  
11          ligence, which included the principles of inclusive  
12          growth, sustainable development and well-being,  
13          human-centered values and fairness, transparency  
14          and explainability, robustness, security and safety,  
15          and accountability.

16          (9) In June 2020, the G7 and several partners  
17          launched the Global Partnership on Artificial Intel-  
18          ligence to increase cooperation focused around the  
19          areas of responsible artificial intelligence, data gov-  
20          ernance, the future of work, and innovation and  
21          commercialization.

22          (10) Several United States allies, including  
23          Canada, Denmark, Estonia, France, Finland, Ger-  
24          many, the Netherlands, and South Korea, have pub-

1       lished national artificial intelligence strategies with  
2       detailed funding commitments.

3           (11) In 2017, China published a national artifi-  
4       cial intelligence strategy that detailed the Chinese  
5       Communist Party’s goal to become the world’s pri-  
6       mary artificial intelligence innovation center by  
7       2030.

8           (12) In 2019, Russia published a national arti-  
9       ficial intelligence strategy and, in 2017, Russian  
10      President Vladimir Putin said that “whoever be-  
11      comes the leader in this sphere will become the ruler  
12      of the world”.

13          (13) In 2018, the Subcommittee on Information  
14      Technology of the Committee on Oversight and Gov-  
15      ernment Reform of the House of Representatives,  
16      under the leadership of Chairman Will Hurd and  
17      Ranking Member Robin Kelly, published “Rise of  
18      the Machines: Artificial Intelligence and its Growing  
19      Impact on U.S. Policy” following a series of hear-  
20      ings on artificial intelligence with experts from aca-  
21      demia, industry, and government, concluding that  
22      “the United States cannot maintain its global lead-  
23      ership in artificial intelligence absent political leader-  
24      ship from Congress and the Executive Branch”.

1           (14) Congress serves a critical role in estab-  
2       lishing national priorities, funding scientific research  
3       and development, supporting emerging technologies,  
4       and sustaining cooperation with our allies to protect  
5       the national security of the United States.

6       (b) NATIONAL ARTIFICIAL INTELLIGENCE STRATEGY  
7       PRINCIPLES.—It is the sense of Congress that the fol-  
8       lowing principles should guide the national artificial intel-  
9       ligence strategy of the United States:

10           (1) Global leadership.

11           (2) A prepared workforce.

12           (3) National security.

13           (4) Effective research and development.

14           (5) Ethics, reduced bias, fairness, and privacy.

15       **SEC. 2. GLOBAL LEADERSHIP.**

16       It is the sense of Congress that the United States  
17       should take a global leadership role in artificial intel-  
18       ligence.

19       **SEC. 3. WORKFORCE PREPARATION.**

20       (a) FINDINGS.—Congress finds the following:

21           (1) Artificial intelligence and automation will  
22       present significant challenges to workers in affected  
23       industries, but will also automate routine and repet-  
24       itive tasks to give workers more time to focus on

1 other tasks that involve social and creative intel-  
2 ligence.

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

7 (3) The United States should take a leadership  
8 role in the artificial intelligence-driven economy by  
9 filling the artificial intelligence talent gap and pre-  
10 paring United States workers for the jobs of the fu-  
11 ture, including by prioritizing inclusivity and equal  
12 opportunity.

13 (4) Departments and agencies of the Federal  
14 Government are increasingly using data to admin-  
15 ister benefits, assess outcomes, and fulfill other mis-  
16 sion-critical activities.

17 (5) Effectively creating, managing, and imple-  
18 menting artificial intelligence related research and  
19 development grants will require technical expertise.

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

23 (7) The United States needs a conceptual re-  
24 structuring of education to reflect the necessity of a  
25 lifelong learning process.

1           (8) Artificial intelligence will exacerbate the un-  
2       predictable nature of what skills will be in demand  
3       or obsolete in the future.

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

7           (10) Lifelong learning and skill acquisition can  
8       increase flexibility with respect to career opportuni-  
9       ties.

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

14       (b) MATTERS TO CONSIDER.—

15           (1) EDUCATION.—

16           (A) IN GENERAL.—It is the sense of Con-  
17       gress that the Federal Government should—

18                   (i) increase funding for existing tech-  
19                   nology education programs;

20                   (ii) develop voluntary guidelines for  
21                   universities with respect to how to incor-  
22                   porate a liberal arts curriculum, including  
23                   requirements for courses with respect to  
24                   ethics, into science, technology, engineer-  
25                   ing, mathematics, and computer science

1 curricula and how to incorporate statis-  
2 tics and data-driven decision making into  
3 complementary fields;

4 (iii) ensure that new education path-  
5 ways incorporate industry-sponsored,  
6 standards-based, and recognized stackable  
7 credentials, including certifications and  
8 certificates, as part of degree tracks; and

9 (iv) develop strategic partnerships  
10 with the private sector to create a Federal  
11 program for the purposes of increasing the  
12 relevant skills of current educators and en-  
13 suring that more teachers are available in  
14 school districts that are under-served with  
15 respect to science, technology, engineering,  
16 mathematics, and computer science edu-  
17 cators.

18 (B) EDUCATION MODERNIZATION STUD-  
19 IES.—It is the sense of Congress that congres-  
20 sional committees should conduct studies with  
21 respect to how to adapt the education system in  
22 the United States to prepare students and  
23 workers for an artificial intelligence-driven  
24 economy, including studies with respect to the  
25 following:



1 (i) How States, universities, and local  
2 educational agencies can—

3 (I) update curriculums to include  
4 relevant subjects;

5 (II) make education more afford-  
6 able; and

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

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

13 (iii) How to encourage colleges and  
14 State institutions to update their credit  
15 transfer policies to make it easier for stu-  
16 dents to transfer their course credits.

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

19 (A) implement policies to ensure the inclu-  
20 sion of under-represented communities and  
21 marginalized groups in existing technology edu-  
22 cation programs;

23 (B) create programs for the purpose of ex-  
24 ploring ways to increase workforce diversity and

1 the retention of diverse talent at all levels of an  
2 organization; and

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

8 (3) ARTIFICIAL INTELLIGENCE TRAINING.—

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

16 (B) WORK-BASED TRAINING PROGRAMS.—

17 It is the sense of Congress that the Federal  
18 Government should consider the importance of  
19 work-based training programs, including Last  
20 Mile Training programs, in preparing the  
21 United States workforce for an artificial intel-  
22 ligence-driven economy, including by—

23 (i) undertaking studies to determine  
24 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

1 ensuring that such practices do not disqualify  
2 individuals with a less traditional background,  
3 due to a lack of degree attainment, who have  
4 artificial intelligence skills; and

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

8 **SEC. 4. NATIONAL SECURITY.**

9 (a) FINDINGS.—Congress finds the following:

10 (1) Artificial intelligence will have immense im-  
11 plications for national and international security.

12 (2) Artificial intelligence tools and systems can  
13 augment human intelligence through human-ma-  
14 chine collaboration and teaming across the national  
15 security ecosystem.

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

22 (4) The continued proliferation of national arti-  
23 ficial intelligence strategies, plans, statements, and  
24 investments demonstrates the increase in global  
25 competition in this area.

1           (5) New paradigms will be required to effec-  
2           tively test artificial intelligence and to ensure that it  
3           is reliable and stable.

4           (6) Export and investment controls will be im-  
5           portant policy tools to prevent the acquisition of sen-  
6           sitive artificial intelligence and artificial intelligence-  
7           enabling technologies, including hardware such as  
8           semiconductors and semiconductor manufacturing  
9           equipment, by China, Russia, and other adversaries.

10          (b) MATTERS TO CONSIDER.—

11           (1) COLLABORATION WITH FOREIGN NA-  
12           TIONS.—It is the sense of Congress that the United  
13           States should—

14                   (A) leverage its alliances to promote demo-  
15                   cratic principles, foster research collaboration,  
16                   and develop common standards with respect to  
17                   artificial intelligence;

18                   (B) promote the interoperability of artifi-  
19                   cial intelligence for the purpose of strength-  
20                   ening alliances;

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

24                   (D) undertake efforts to engage with  
25           China and Russia with respect to—

1 (i) shared concerns about artificial in-  
2 telligence safety; and

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

8 (2) FOREIGN ARTIFICIAL INTELLIGENCE CAPA-  
9 BILITY.—It is the sense of Congress that national  
10 security agencies should consider conditions-based  
11 and capabilities-based approaches when evaluating  
12 global artificial intelligence capabilities.

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

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

22 (B) devote institutional resources,  
23 including investing in research, for the purpose  
24 of promoting trustworthiness with respect to  
25 human-machine teams;

1 (C) engage with experts to develop guide-  
2 lines for the ethical development and use of ar-  
3 tificial intelligence systems; and

4 (D) prioritize the development of artificial  
5 intelligence systems to cover non-critical tasks  
6 until such systems can achieve suitable stand-  
7 ards of reliability, interoperability, and security.

8 (4) EXPORT AND INVESTMENT CONTROLS.—It  
9 is the sense of Congress that the United States  
10 should collaborate with its allies to prevent the mis-  
11 use of artificial intelligence systems by China, Rus-  
12 sia, and other adversaries.

13 **SEC. 5. RESEARCH AND DEVELOPMENT.**

14 (a) FINDINGS.—Congress finds the following:

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

17 (2) Federal research and development invest-  
18 ments need to be significantly increased to ensure  
19 United States leadership in artificial intelligence.

20 (3) Federally supported research will play an  
21 important role in supporting artificial intelligence  
22 techniques that are critical to United States artifi-  
23 cial intelligence leadership, including by requiring  
24 smaller data sets to train artificial intelligence sys-

1       tems and making more efficient use of computing re-  
2       sources.

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

8           (5) Computing power is essential to progress in  
9       artificial intelligence development, and the amount  
10      of computing power required for artificial intel-  
11      ligence training runs is increasing exponentially.

12          (6) A new wave of technological advances could  
13      be fostered by combining and increasing access to  
14      government-owned and government-funded com-  
15      puting and data resources.

16          (7) Narrowing the digital divide will be essen-  
17      tial to creating new job opportunities and stimu-  
18      lating the growth of new technology and innovation  
19      clusters to support United States leadership in arti-  
20      ficial intelligence.

21          (8) Incentivizing research and development  
22      across the private sector, particularly from smaller  
23      companies, will further strengthen the United States  
24      innovation ecosystem.



1           (9) The United States is an attractive research  
2           and development partner because of its open demo-  
3           cratic society with world-class universities, research  
4           institutes, and corporations.

5           (10) Decades of experience show that joint  
6           work with foreign researchers can be done with  
7           great benefit and little detriment to United States  
8           economic and national security, with the implemen-  
9           tation of proper safeguards.

10          (11) Artificial intelligence standards and meas-  
11          urement are essential to fostering artificial intel-  
12          ligence technologies that are safe, secure, reliable,  
13          and comport with the norms and values of the  
14          United States.

15          (12) Metrics are how the artificial intelligence  
16          research community guides itself and prioritizes re-  
17          search.

18          (13) Benchmark tests are necessary to under-  
19          stand the performance of an artificial intelligence  
20          system.

21          (14) Current tests for measuring artificial intel-  
22          ligence range from vague and conceptual to well-de-  
23          fined and mature.

24          (15) Artificial intelligence measurement meth-  
25          odologies are not static and will require periodic re-

1 examinations and updates of testing methodologies  
2 to ensure that artificial intelligence systems are  
3 functioning optimally.

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

9 (17) Public engagement is necessary for devel-  
10 oping voluntary standards frameworks to ensure di-  
11 verse perspectives are considered.

12 (b) MATTERS TO CONSIDER.—

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

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

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

22 (i) to ensure that the United States  
23 innovation ecosystem leads the world in ar-  
24 tificial intelligence research and develop-  
25 ment; and

1 (ii) to develop a voluntary standards  
2 framework that will help create shared  
3 conceptual foundations, terminology, and  
4 best practices for artificial intelligence fair-  
5 ness and bias mitigation; and

6 (B) with science funding organizations in  
7 allied countries to establish multilateral teams  
8 of artificial intelligence researchers from the  
9 public and private sectors to promote talent de-  
10 velopment and foster partnerships on artificial  
11 intelligence research and development.

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

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

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

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

22 (D) make data created by federally-funded  
23 scientific and technical research publicly avail-  
24 able with appropriate privacy protections to

1 provide artificial intelligence researchers with  
2 new data sets to train their systems.

3 (4) NATIONAL COMPUTING AND DATA RE-  
4 SOURCE.—It is the sense of Congress that Congress  
5 should consider establishing a national computing  
6 and data resource.

7 (5) ACCESS TO NATIONAL LABORATORIES.—It  
8 is the sense of Congress that the existing supercom-  
9 puting labs at the national laboratories and tech-  
10 nology centers of the Department of Energy should  
11 expand opportunities for academics and researchers  
12 to access such labs for artificial intelligence research  
13 and research related to artificial intelligence.

14 (6) TAX INCENTIVES.—It is the sense of Con-  
15 gress that Congress should examine whether tar-  
16 geted incentives and reforms to the Internal Revenue  
17 Code of 1986 would increase private sector research  
18 and development, particularly with respect to small  
19 cap corporations.

20 **SEC. 6. ETHICS, REDUCED BIAS, FAIRNESS, AND PRIVACY.**

21 (a) FINDINGS.—Congress finds the following:

22 (1) The rise of artificial intelligence has great  
23 potential to improve quality of life for individuals in  
24 the United States, provided it is developed and used

1 in a manner that is ethical, reduces bias, promotes  
2 fairness, and protects privacy.

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

5 (3) The United States is uniquely positioned to  
6 leverage its diverse workforce to lead in artificial in-  
7 telligence.

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

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

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

17 (7) Artificial intelligence regulatory approaches  
18 must consider the level of risk associated with dif-  
19 ferent artificial intelligence applications.

20 (b) MATTERS TO CONSIDER.—

21 (1) BIAS MITIGATION.—It is the sense of Con-  
22 gress that departments and agencies of the Federal  
23 Government should—

24 (A) support technical and non-technical re-  
25 search and development to address potential

1 bias, fairness, and privacy issues in artificial in-  
2 telligence;

3 (B) improve access to non-sensitive govern-  
4 ment datasets to help reduce bias in the data  
5 used to train artificial intelligence systems;

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

9 (D) further develop and release to the pub-  
10 lic available benchmark datasets, including with  
11 proper safeguards to protect privacy, mitigate  
12 bias, and promote inclusivity.

13 (2) REGULATION AND LEGISLATION REVIEW.—

14 It is the sense of Congress that congressional com-  
15 mittees should—

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

19 (B) determine which laws apply to artifi-  
20 cial intelligence;

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

24 (D) enact Federal privacy legislation to  
25 build trust, prevent harm, prevent ceding lead-

1           ership in artificial intelligence to other nations,  
2           and create international standards; and

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

6           (3) FEDERAL FUNDING.—It is the sense of  
7           Congress that Congress should support funding for  
8           departments and agencies of the Federal Govern-  
9           ment interested in adopting programs, including reg-  
10          ulatory sandboxes, for the purposes of temporarily  
11          approving, testing, and monitoring innovating artifi-  
12          cial intelligence tools in limited markets.