



Artificial Intelligence  
Index Report 2022

**CHAPTER 5:**  
**AI Policy and  
Governance**





## CHAPTER 5: Chapter Preview

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# Overview

As AI has become an increasingly ubiquitous topic in the last decade, intergovernmental, national, and regional organizations have worked to develop policies and strategies around AI governance. These actors are driven by the understanding that it is imperative to find ways to address the ethical and societal concerns surrounding AI, while maximizing its benefits. Active and informed governance of AI technologies has become a priority for many governments around the world.

This chapter examines the intersection of AI and governance, and takes a closer look at how governments in different countries, regions, and U.S. states are working to manage AI technologies. It begins by looking at AI policymaking across the globe and within the United States, exploring which countries and political actors are most keen to advance AI legislation, and what kind of AI subtopics, from privacy to ethics, are the focus of most legislative attention. Then the chapter takes a deep dive into one of the world's top public sector investors in AI, the United States, and studies how much its various government departments have spent on AI in the past five years.



## CHAPTER HIGHLIGHTS

- An AI Index analysis of legislative records on AI in 25 countries shows that the number of bills containing “artificial intelligence” that were **passed into law grew from just 1 in 2016 to 18 in 2021**. Spain, the United Kingdom, and the United States passed the highest number of AI-related bills in 2021, with each adopting three.
- The federal legislative record in the United States shows a sharp increase in the total number of proposed bills that relate to AI from 2015 to 2021, **while the number of bills passed remains low, with only 2% ultimately becoming law**.
- State legislators in the United States **passed 1 out of every 50 proposed bills** that contain AI provisions in 2021, while the number of such bills proposed **grew from 2 in 2012 to 131 in 2021**.
- In the United States, the current congressional session (the 117th) is on track to record the greatest number of AI-related mentions since 2001, **with 295 mentions by the end of 2021, half way through the session, compared to 506 in the previous (116th) session**.

Discussions around AI governance regulation have accelerated over the past decade, resulting in policy proposals across various legislative bodies. This section first examines AI-related legislation that has either been proposed or passed into law across different countries and regions, followed by a focused analysis of state-level legislation in the United States. It then takes a closer look at congressional and parliamentary records on AI across the world and concludes with data on the number of policy papers published in the United States.

## 5.1 AI AND POLICYMAKING

### GLOBAL LEGISLATION RECORDS ON AI

Governments and legislative bodies across the globe are increasingly seeking to pass laws to provide funding for AI development and innovation, while also promoting the integration of human-centered values. The AI Index has conducted an analysis of laws passed in 25 countries by

their legislative bodies that contain the words “artificial intelligence” from 2016 to 2021.

Taken together, the 25 countries analyzed have passed a total of 55 AI-related bills. Figure 5.2.1 demonstrates that in the past six years, there has been a sharp increase in terms of the total number of AI-related bills passed into law.<sup>1</sup>

#### NUMBER of AI-RELATED BILLS PASSED into LAW in 25 SELECT COUNTRIES, 2016–21

Source: AI Index, 2021 | Chart: 2022 AI Index Report

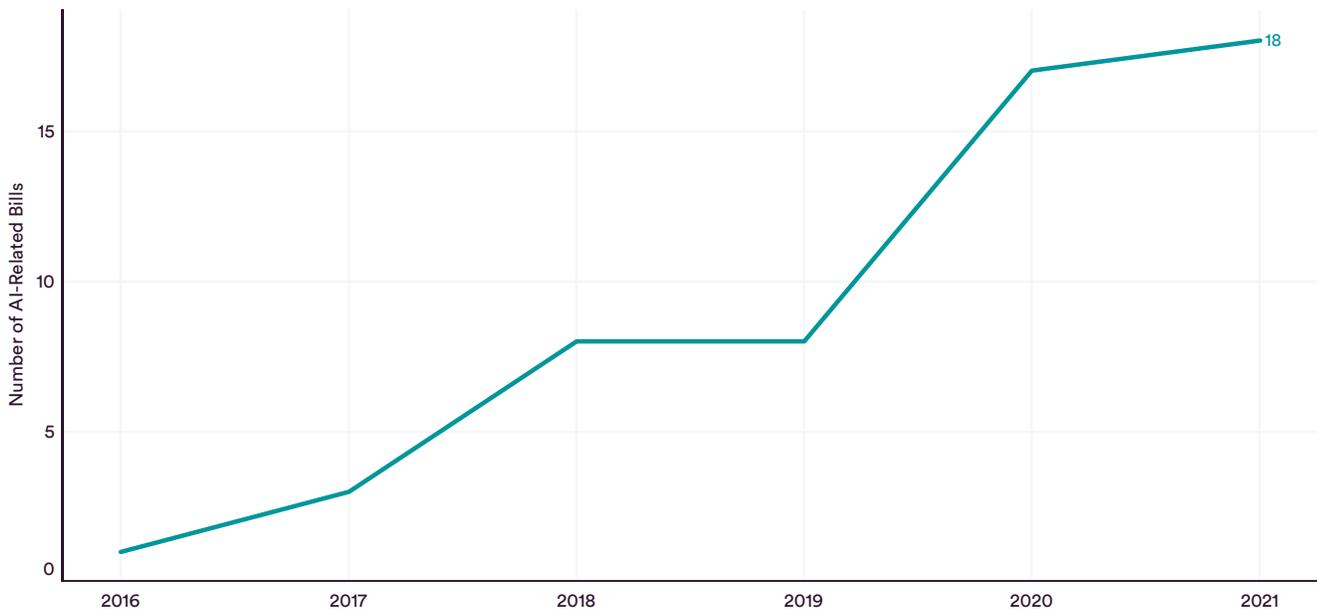


Figure 5.1.1

<sup>1</sup> Note that the analysis only includes laws passed by national legislative bodies (e.g. congress, parliament) with the keyword “artificial intelligence” in various languages in the title or body of the bill text. See the appendix for the methodology. Countries included: Australia, Belgium, Brazil, Canada, China, Denmark, Finland, France, Germany, India, Ireland, Italy, Japan, the Netherlands, New Zealand, Norway, Russia, Singapore, South Africa, South Korea, Spain, Sweden, Switzerland, the United Kingdom, and the United States.

### By Geographic Area

Figure 5.1.2a shows the number of laws containing mentions of AI that were enacted in 2021. Spain, the United Kingdom, and the United States led, each passing three. Figure 5.1.2b shows the total number of legislation passed in the past six years. The United States dominated the list with 13 bills, starting in 2017 with 3 new laws passed each subsequent year, followed by Russia, Belgium, Spain, and the United Kingdom.

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#### NUMBER of AI-RELATED BILLS PASSED into LAW in SELECT COUNTRIES, 2021

Source: AI Index, 2021 | Chart: 2022 AI Index Report

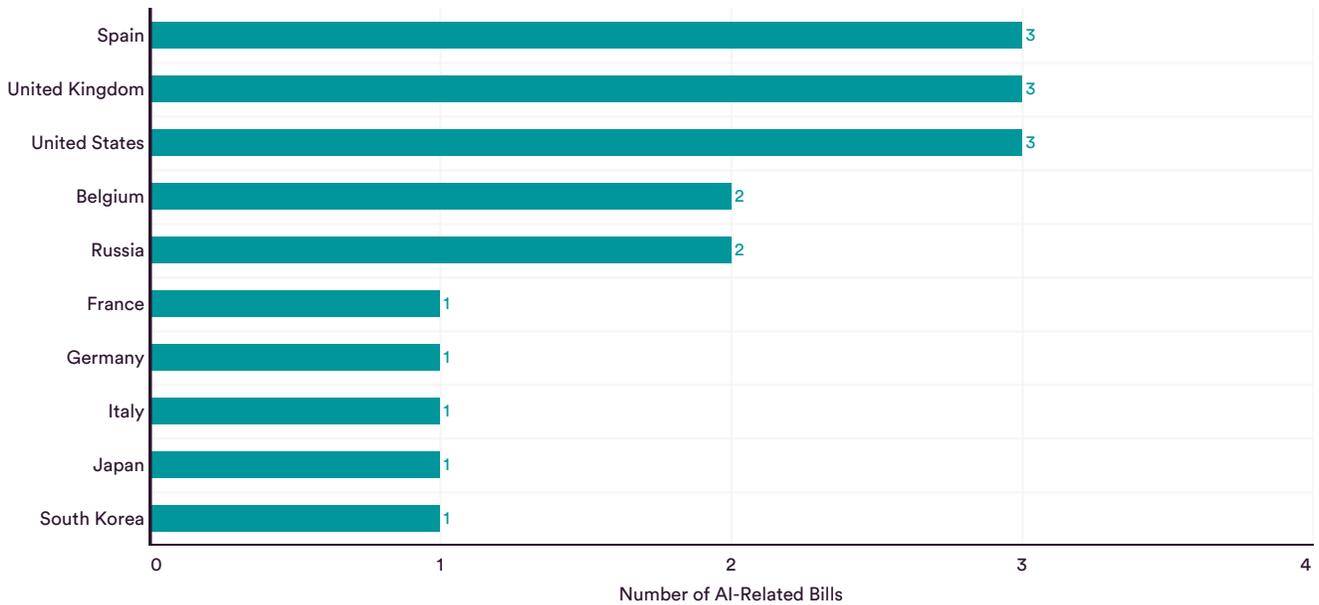


Figure 5.1.2a

### NUMBER of AI-RELATED BILLS PASSED into LAW in SELECT COUNTRIES, 2016–21 (SUM)

Source: AI Index, 2021 | Chart: 2022 AI Index Report

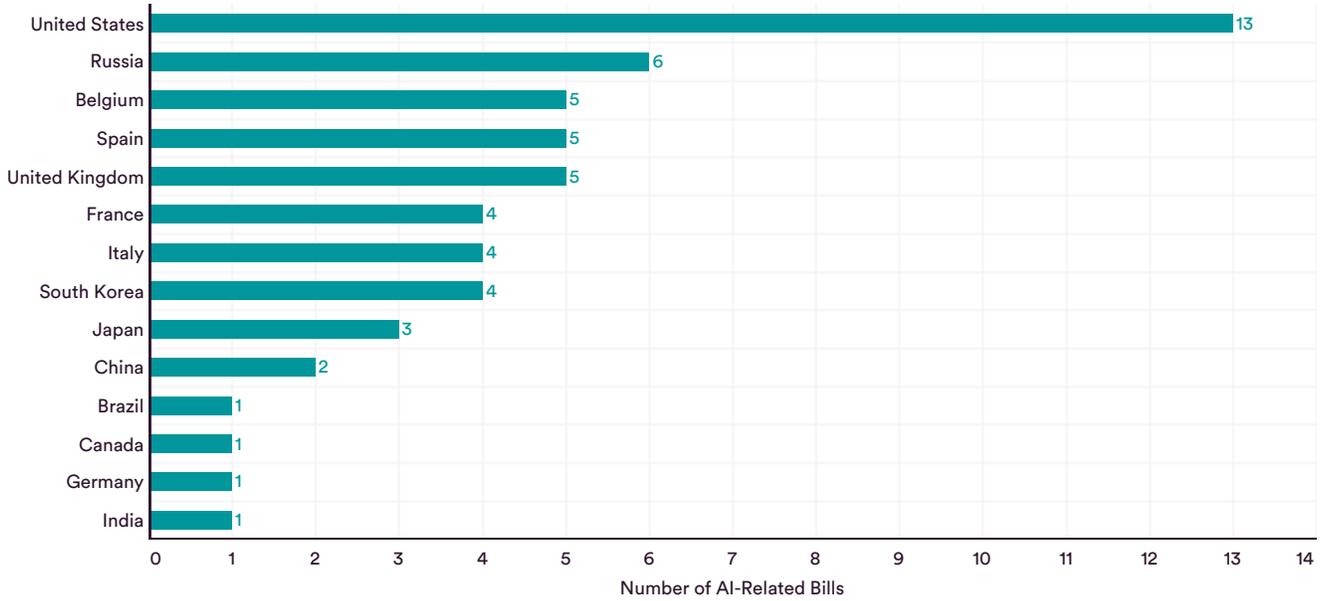


Figure 5.1.2b

### Federal AI Legislation in the United States

A closer look at the federal legislative record in the United States shows a sharp increase in the total number of proposed bills that relate to AI (Figure 5.1.3). In 2015, just one federal bill was proposed, while in 2021, there

were 130. Although this jump is significant, the number of bills related to AI being passed has not kept pace with the growing volume of proposed AI-related bills. This gap was most evident in 2021, when only 2% of all federal-level AI-related bills were ultimately passed into law.

### NUMBER of AI-RELATED BILLS in the UNITED STATES, 2015–21 (PROPOSED vs. PASSED)

Source: AI Index, 2021 | Chart: 2022 AI Index Report

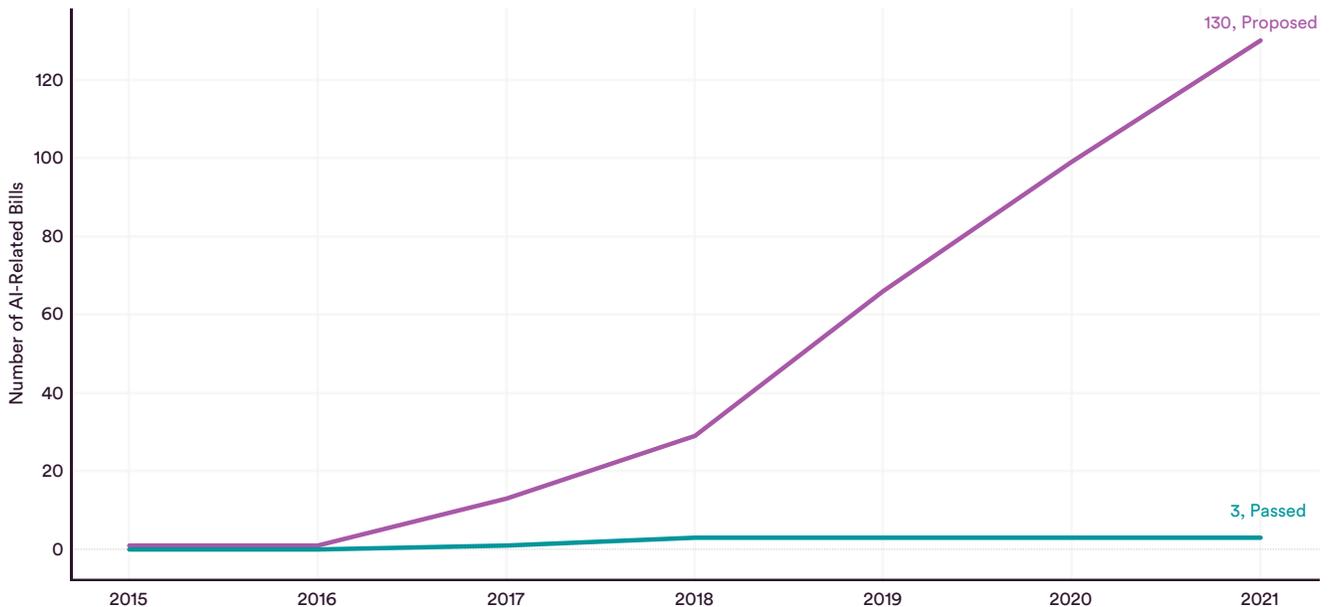


Figure 5.1.3

## A Closer Look at the Legislation

The following subsection delves into some of the AI-related legislation passed into law since 2016. Table 5.1.1 demonstrates the wide range of AI-related issues that have piqued policymakers' interest.

Country	Year Passed	Bill Name	Description
Canada	2017	Budget Implementation Act 2017, No. 1	A provision of this act authorized the Canadian government to make a payment of \$125 million to the Canadian Institute for Advanced Research to support the development of a pan-Canadian artificial intelligence strategy.
China	2019	Law of the People's Republic of China on Basic Medical and Health Care and the Promotion of Health	A provision of this law aimed to promote the application and development of big data and artificial intelligence in the health and medical field while accelerating the construction of medical and healthcare information infrastructure, developing technical standards on the collection, storage, analysis, and application of medical and health data.
Russia	2020	Federal Law of 24 April 2020 No. 123-FZ on the Experiment to Establish Special Regulation in order to Create the Necessary Conditions for the Development and Implementation of Artificial Intelligence Technologies in the Region of the Russian Federation – Federal City of Moscow and Amending the Articles 6 and 10 of the Federal Law on Personal Data	This law established an experimental framework for the development and implementation of AI as a five-year experiment to start in Moscow in July 1, 2020, including allowing AI systems to process anonymized personal data for governmental and certain commercial business activities.
United Kingdom	2020	Supply and Appropriation (Main Estimates) Act 2020, c.13	A provision of this act authorized the Office of Qualifications and Examination Regulation to explore opportunities for using artificial intelligence to improve the marking and administration of high-stakes qualifications.
United States	2020	IOGAN ACT: Identifying Outputs of Generative Adversarial Networks Act	This act directed the National Science Foundation to support research dedicated to studying the outputs of generative adversarial networks (deepfakes) and other comparable technologies.
Belgium	2021	Decree on coaching and solution-oriented support for job seekers, N. 327	A provision of this act directs the government to create an advisory group called the Ethics Committee, which is responsible for submitting advice if artificial intelligence tools are to be used for digitization activities.
France	2021	Law N:2021-1485 of November 15, 2021, aimed at reducing the environmental footprint of digital technology in France	This act sets up a monitoring system to evaluate environmental impacts of newly emerging digital technologies, in particular, artificial intelligence.

Table 5.1.1

## STATE-LEVEL AI LEGISLATION IN THE UNITED STATES

Growing policy interest in AI can also be seen in the large number of AI-related bills recently proposed at the state level in the United States, based on data provided by Bloomberg Government since 2012. Bloomberg Government classified a bill as relating to AI if it contained AI-related keywords such as artificial intelligence, machine learning, or algorithmic bias.

As is the case on the federal level, there has been a significant increase in the number of AI bills proposed at the state level in the last decade (Figure 5.1.4). In 2012, the first two pieces of AI-related legislation were proposed when New Jersey assembly member Annette Quijano directed the New Jersey Motor Vehicle Commission to establish driver’s license endorsements for autonomous vehicles. In the past 10 years, the increase has been substantial, from 2 bills in 2012 to 131 in 2021.

A notable difference between AI-related lawmaking in the United States on the federal versus the state level is that

a greater proportion of proposed state-level AI bills have actually passed. In 2021, of the 131 proposed state bills, 26 were passed into law (20%), or 1 out of 5 proposed bills became law. This ratio is significantly higher when compared to the federal level, where 1 out of every 50 proposed bills became law in 2021.

**A notable difference between AI-related lawmaking in the United States on the federal versus the state level is that a greater proportion of proposed state-level AI bills have actually passed.**

### NUMBER of STATE-LEVEL AI-RELATED BILLS in the UNITED STATES, 2012–21

Source: Bloomberg Government, 2021 | Chart: 2022 AI Index Report

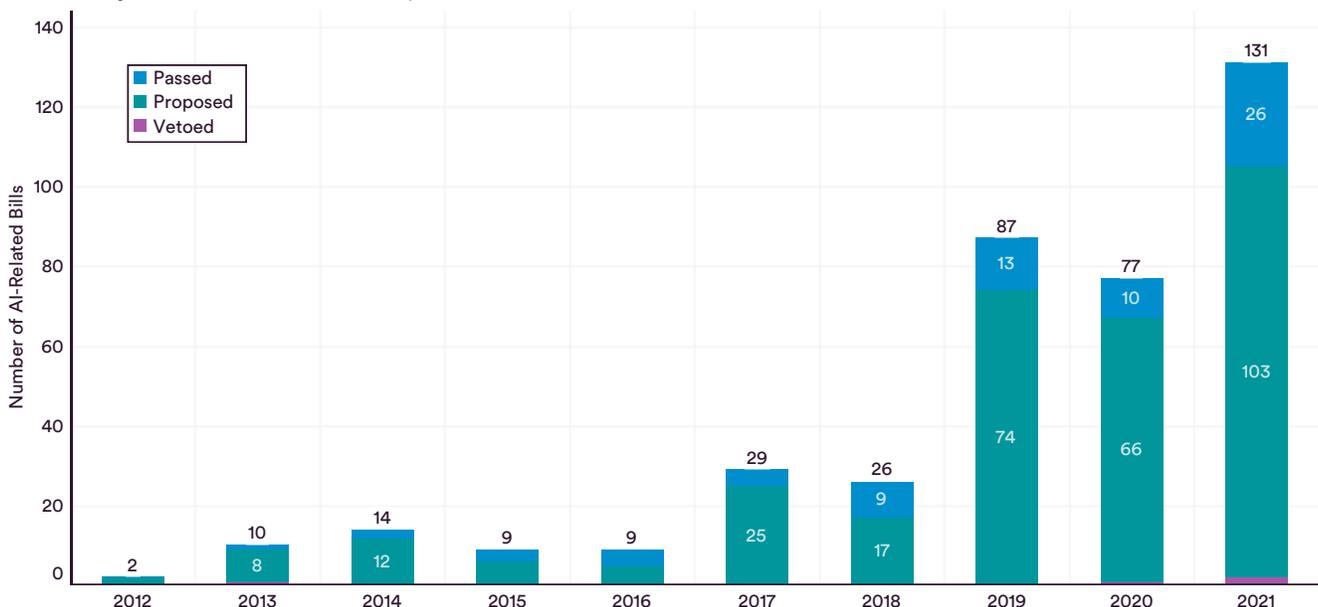


Figure 5.1.4



### Sponsorship by Political Party

State-level AI legislation data reveals that there is a partisan dynamic to AI lawmaking. Figure 5.1.7 plots the number of AI-related bills sponsored at the state level by Democratic and Republican lawmakers. Although there has been an increase in AI bills proposed by members

of both parties since 2012, in the past four years, the data suggests Democrats were more likely to sponsor AI-related legislation. Whereas Democrats sponsored only two more AI bills than Republicans in 2018, they sponsored 39 more in 2021.

**NUMBER of STATE-LEVEL PROPOSED AI-RELATED BILLS in the UNITED STATES by SPONSOR PARTY, 2012–21**

Source: Bloomberg Government, 2021 | Chart: 2022 AI Index Report

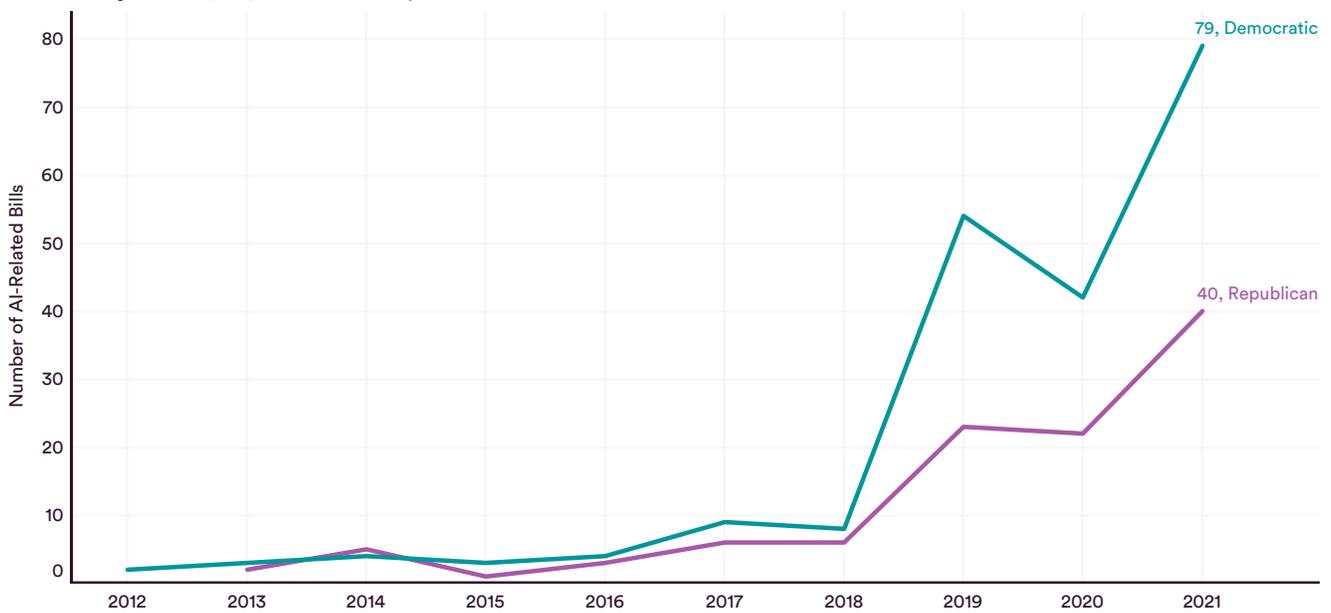


Figure 5.1.7

## MENTIONS OF AI IN LEGISLATIVE RECORDS

Another barometer of legislative interest in AI is the number of mentions of “artificial intelligence” in governmental and parliamentary proceedings. This subsection considers data on mentions of AI both in U.S. congressional records and the parliamentary proceedings of other countries based on AI Index and Bloomberg Government data.

### AI Mentions in U.S. Congressional Records

In the last five years, and especially in 2021, U.S. congressional sessions have devoted increasing amounts of time to discussions of AI. This section presents data

from Bloomberg Government concerning mentions of AI-related keywords in congressional proceedings, broken down by legislation, congressional committee reports, and congressional research service reports.

According to Figure 5.1.8, the current congressional session (the 117th) is on track (as of the end of 2021) to record the greatest number of AI-related mentions since 2001. The most recently completed congressional session, the 116th (2019–2020), saw 506 AI mentions, nearly 3.4 times as many mentions as there were during the 115th session (2017–2018), and 30 times as many as the 114th session (2015–2016).

### MENTIONS of AI in the U.S. CONGRESSIONAL RECORD by LEGISLATIVE SESSION, 2001–21

Source: Bloomberg Government, 2021 | Chart: 2022 AI Index Report

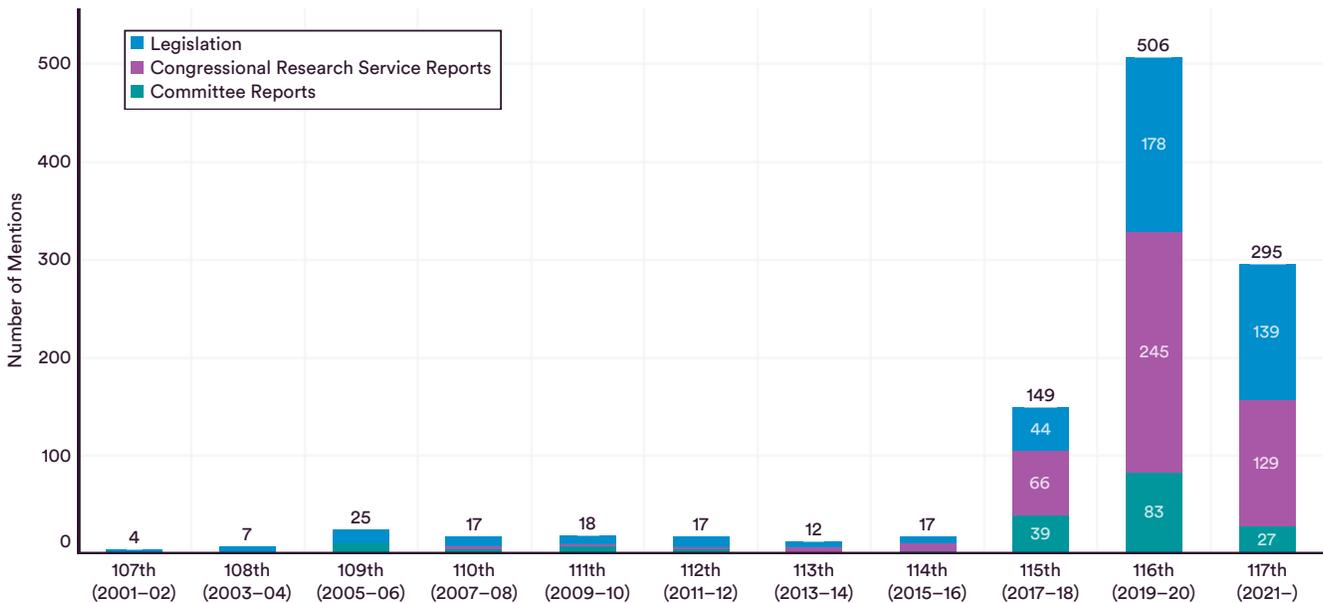


Figure 5.1.8

### AI Mentions in Global Legislative Proceedings

AI mentions in governmental proceedings are on the rise not only in the United States but also in many other countries across the world. The AI Index conducted an analysis on the minutes or proceedings of legislative

sessions in 25 countries that contain the keyword “artificial intelligence” from 2016 to 2021. Figure 5.1.9 shows that the mentions of AI in legislative proceedings in 25 select countries grew 7.7 times in the past six years.<sup>2</sup>

#### NUMBER of MENTIONS of AI in LEGISLATIVE PROCEEDINGS in 25 SELECT COUNTRIES, 2016–21

Source: AI Index, 2021 | Chart: 2022 AI Index Report

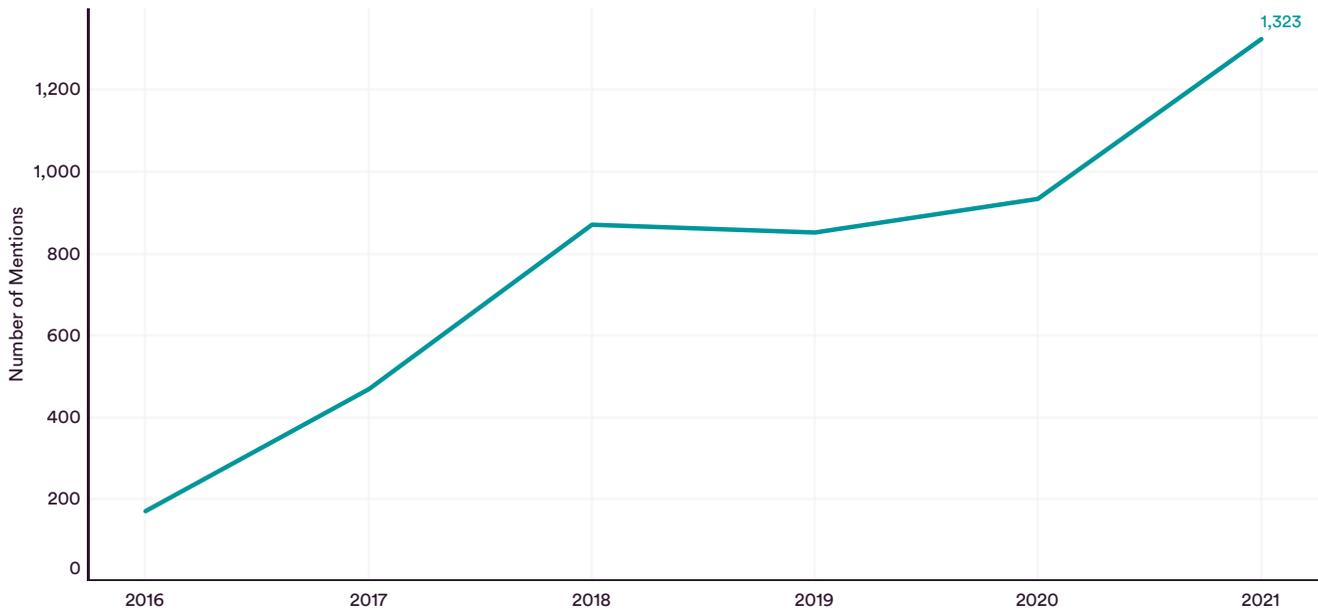


Figure 5.1.9

<sup>2</sup> See the appendix for the methodology. Countries included: Australia, Belgium, Brazil, Canada, China, Denmark, Finland, France, Germany, India, Ireland, Italy, Japan, the Netherlands, New Zealand, Norway, Russia, Singapore, South Africa, South Korea, Spain, Sweden, Switzerland, the United Kingdom, and the United States.

### By Geographic Area

Figure 5.1.10a shows the number of legislative proceedings containing mentions of AI that were enacted in 2021. Similar to the trend in the number of AI mentions in bills passed into laws, Spain, the United

Kingdom, and the United States topped the list. Figure 5.1.2b shows the total number of AI mentions in the past six years. The United Kingdom dominated the list with 939 mentions, followed by Spain, Japan, the United States, and Australia.

#### NUMBER of MENTIONS of AI in LEGISLATIVE PROCEEDINGS in SELECT COUNTRIES, 2021

Source: AI Index, 2021 | Chart: 2022 AI Index Report

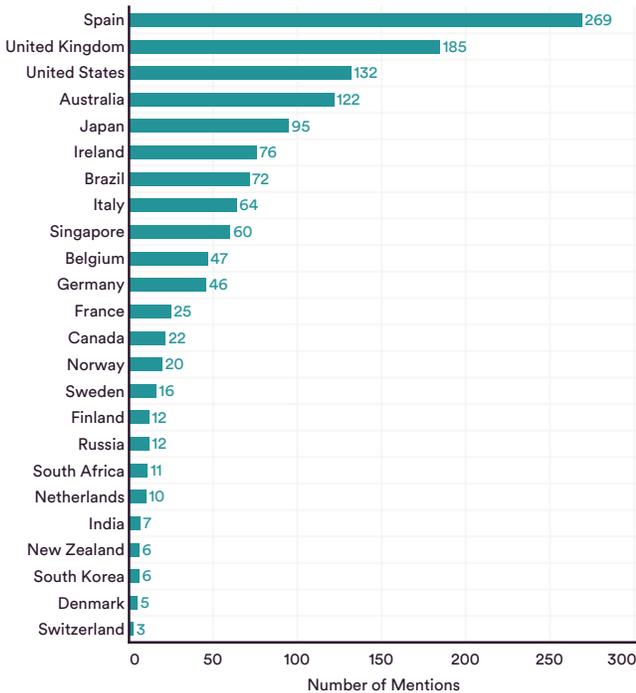


Figure 5.1.10a

#### NUMBER of MENTIONS of AI in LEGISLATIVE PROCEEDINGS in SELECT COUNTRIES, 2016–2021 (SUM)

Source: AI Index, 2021 | Chart: 2022 AI Index Report

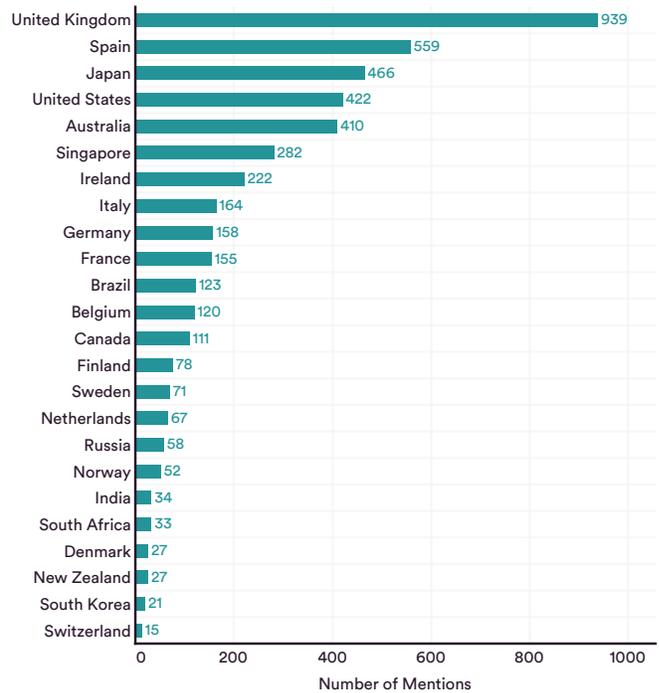


Figure 5.1.10b

## U.S. AI POLICY PAPERS

To estimate activities outside national governments that are also informing AI-related rulemaking, the AI Index tracks 55 U.S.-based organizations that published policy papers in the past four years. Those organizations include: think tanks and policy institutes (19); university institutes and research programs (14); civil society organizations, associations, and consortiums (9); industry and consultancy organizations (9); and government agencies (4).<sup>3</sup> A policy paper in this section is defined as a research paper, research report, brief, or blog post that addresses issues related to AI and makes

specific recommendations to policymakers. Topics of those papers are divided into primary and secondary categories: A primary topic is the main focus of the paper, while a secondary topic is a subtopic of the paper or an issue that was briefly explored.

Figure 5.1.11 plots the total number of U.S.-based AI-related policy papers that have been published from 2018 to 2021, which can proxy the general interest in AI within the U.S. policymaking space. The total number of policy papers has tripled since 2018, peaking in 2020 with 273, and decreasing slightly in 2021, with 210.

### NUMBER of AI-RELATED POLICY PAPERS by U.S.-BASED ORGANIZATIONS, 2018–21

Source: AI Index, 2021 | Chart: 2022 AI Index Report

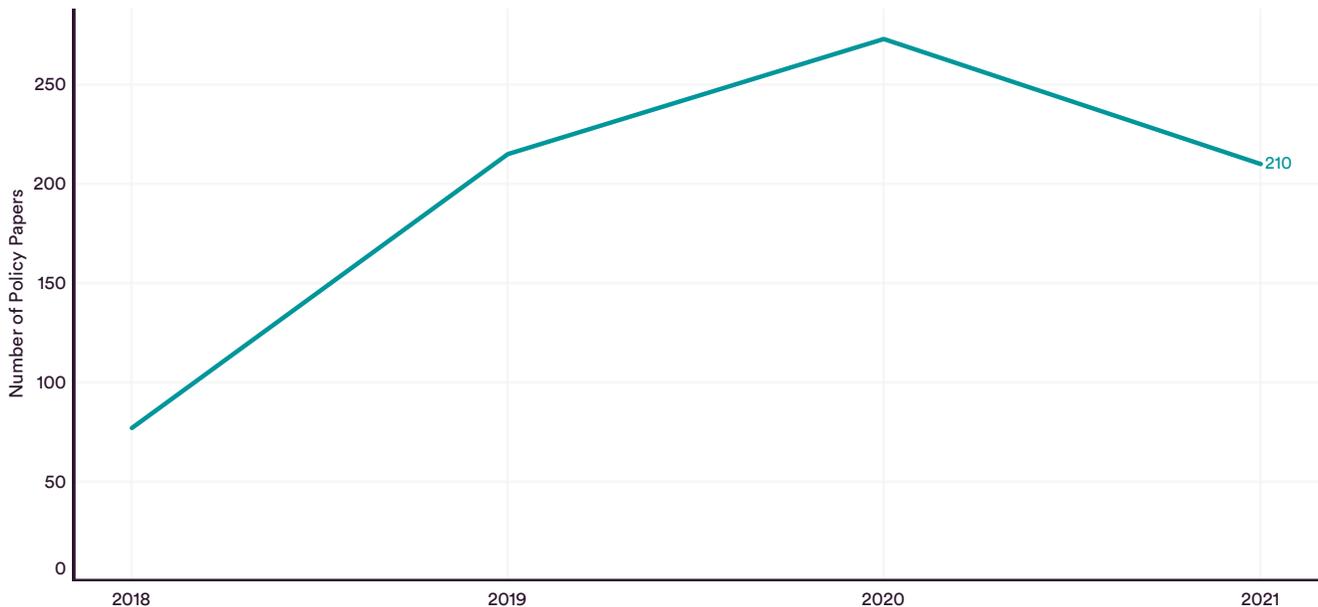


Figure 5.1.11

<sup>3</sup> The complete list of organizations the Index followed can be found in the Appendix.



### By Topic

In 2021, the leading primary topics were Privacy, Safety, and Security; Innovation and Technology; and Ethics (Figure 5.1.12). Certain topics, such as government and public administration, education and skills, as well as democracy, did not feature prominently as primary

topics, but they were reported on more frequently as secondary topics. Among the AI topics to receive comparatively little attention from tracked organizations are those that relate to energy and the environment, humanities, physical sciences, and social and behavioral sciences.

#### NUMBER of AI-RELATED POLICY PAPERS by U.S.-BASED ORGANIZATIONS by TOPIC, 2021

Source: AI Index, 2021 | Chart: 2022 AI Index Report

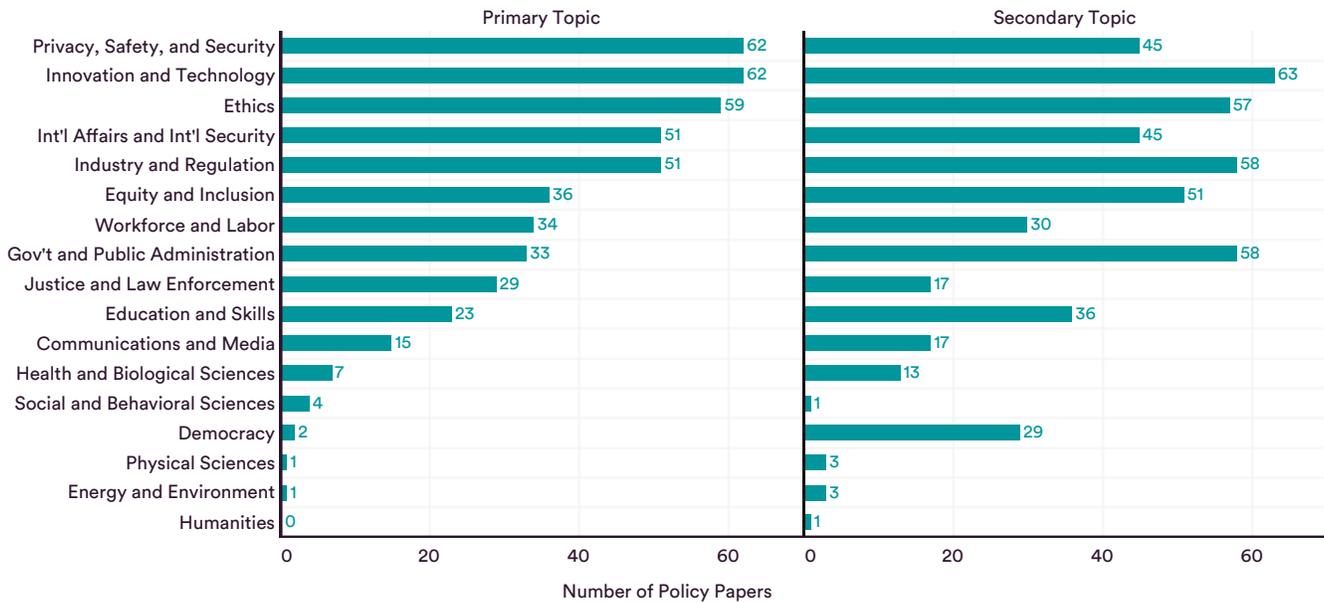


Figure 5.1.12

This section examines the public AI investment in the United States, based on data from the U.S. government and Bloomberg Government.

## 5.2 U.S. PUBLIC INVESTMENT IN AI

### FEDERAL BUDGET FOR NONDEFENSE AI R&D

In December 2021, the National Science and Technology Council published a [report](#) on the public-sector AI R&D budget across departments and agencies participating in the Networking and Information Technology Research and Development (NITRD) program and the National Artificial Intelligence Initiative. The report does not include information on classified AI R&D investment by the defense and intelligence agencies.

In fiscal year (FY) 2021, nondefense U.S. government agencies allocated a total of \$1.53 billion to AI R&D spending, approximately 2.7 times what was spent in FY 2018 (Figure 5.2.1). This figure is projected to rise 8.8% for FY 2022, with a total of \$1.67 billion requested.<sup>4</sup> The increasing amount spent on AI R&D by nondefense departments indicates the U.S. government’s continued strong interest in public sector funding for AI research and development spanning a wide range of federal agencies.

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#### U.S. FEDERAL BUDGET for NONDEFENSE AI R&D, FY 2018–22

Source: U.S. NITRD Program, 2022 | Chart: 2022 AI Index Report

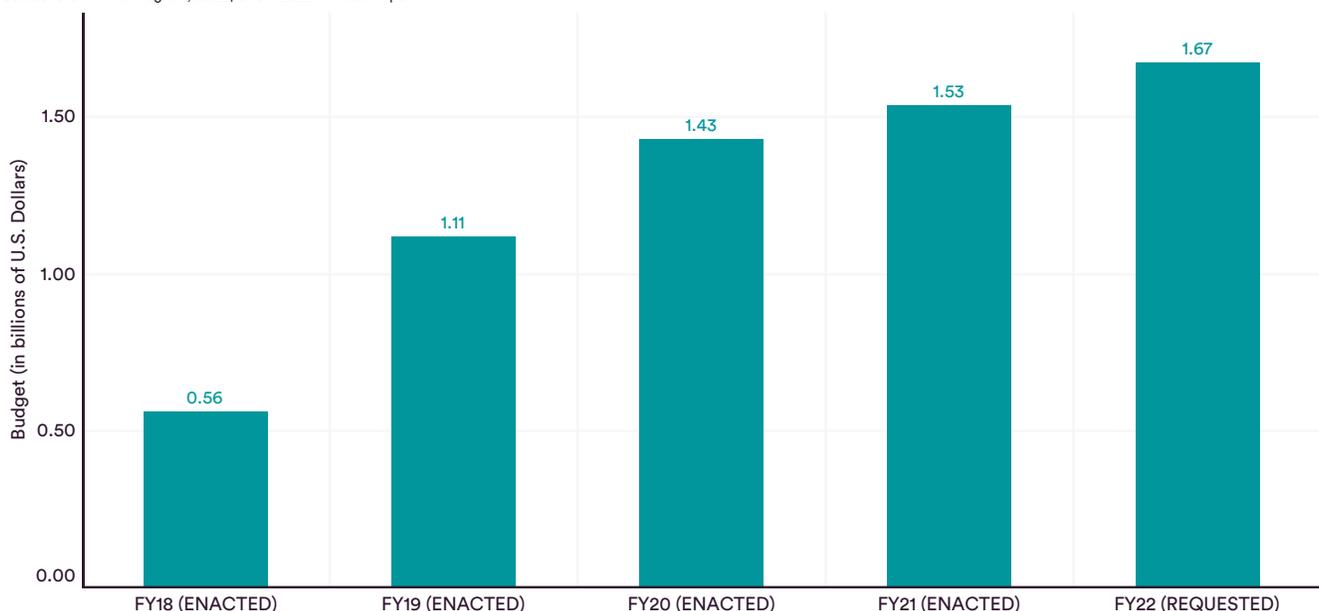


Figure 5.2.1

<sup>4</sup> See NITRD website for details on AI R&D investment FY 2018-22 with the breakdown of core AI vs AI crosscut. Note that AI crosscutting budget data is not available for FY 2018.



## U.S. DEPARTMENT OF DEFENSE BUDGET REQUEST

Spending on AI by the U.S. Department of Defense (DOD) can be proxied by looking at the publicly available requests made by the DOD for research, development, test, and evaluation (RDT&E) relating to AI. In FY 2021,

DOD allocated \$9.26 billion across 500 AI R&D programs (Figure 5.2.2), a 6.68% increase from the \$8.68 billion spent in 2020. For FY 2022, the department has requested \$10 billion so far, which is likely to grow once additional requests and congressional appropriations are taken into account.

### U.S. DOD BUDGET for AI-SPECIFIC RESEARCH, DEVELOPMENT, TEST and EVALUATION (RDT&E), FY 2020–22

Source: Bloomberg Government and U.S. Department of Defense, 2021 | Chart: 2022 AI Index Report

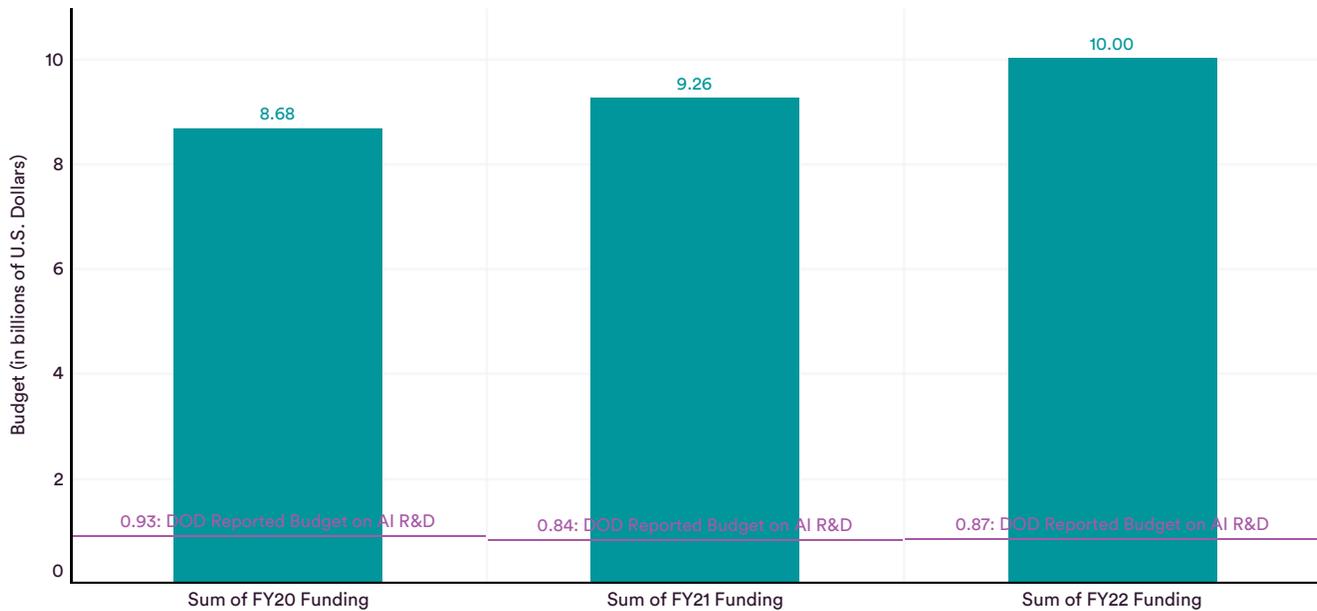


Figure 5.2.2

**Important data caveat:** This chart is indicative of one of the challenges of quantifying public AI spending. Bloomberg Government’s analysis that searches AI-relevant keywords in DOD budgets shows that the department is requesting \$10.0 billion for AI-specific R&D in FY 2022. However, DOD’s own measurement produces a smaller number of \$874 million. The discrepancy

may result from the difference in defining AI-related budget items. For example, a research project that uses AI for cyber defense may count human, hardware, and operations-related expenditures within the AI-related budget request, though the AI software component will be much smaller.

## DOD Top Five Highest-Funded Programs

This section highlight offers a more qualitative look at some of the AI-related research projects the DOD prioritizes. Table 5.2.1 presents the five DOD-related AI programs that received the greatest funding in 2021. In the past year, the DOD was interested in deploying AI for a number of purposes, from geospatial monitoring to reducing the threat posed by weapons of mass destruction.

Program Name	Department	Funds Received (in millions)	Purpose
1 Rapid Capability Development and Maturation	Army	257	Fund the development, engineering, acquisition, and operation of various AI-related technological prototypes that could be used for military purposes.
2 Counter Weapons of Mass Destruction Advanced Technology Development	Defense Threat Reduction Agency	254	Develop technologies that could “deny, defeat and disrupt” weapons of mass destruction (WMD).
3 Algorithmic Warfare Cross-Functional Teams – Software Pilot Program	Office of the Secretary of Defense	230	Accelerate the integration of AI technologies in DOD systems to “improve warfighting speed and lethality.”
4 Joint Artificial Intelligence Center	Defense Information Systems Agency	137	Develop, test, prototype, and demonstrate various AI and machine learning capabilities with the intention of integrating these capabilities across numerous domains which include “supply chain, personal recovery, infrastructure assessment, geospatial monitoring during disaster and cyber sense making.”
5 High Performance Computing Modernization Program	Army	96	Investigate, demonstrate, and mature both general and special-purpose supercomputing environments that are used to satisfy wide-ranging DOD priorities.

Table 5.2.1



### DOD AI R&D Spending by Department

DOD spending on AI R&D can also be broken down on a subdepartmental level, which reveals how individual defense agencies—the Army and the Navy, for instance—compare in their AI spending (Figure 5.2.3). The U.S. Navy was the top-spending DOD agency in FY 2021 and

is poised to maintain that position in 2022. They have requested a total of \$1.86 billion in FY 2022 for AI-related projects, followed by the Army (\$1.77 billion), the Office of the Secretary of Defense (\$1.1 billion) and the Air Force (\$883 million).

### U.S. DOD BUDGET for AI-SPECIFIC RESEARCH, DEVELOPMENT, TEST and EVALUATION (RDT&E) by DEPARTMENT, FY 2020–22

Source: Bloomberg Government, 2021 | Chart: 2022 AI Index Report

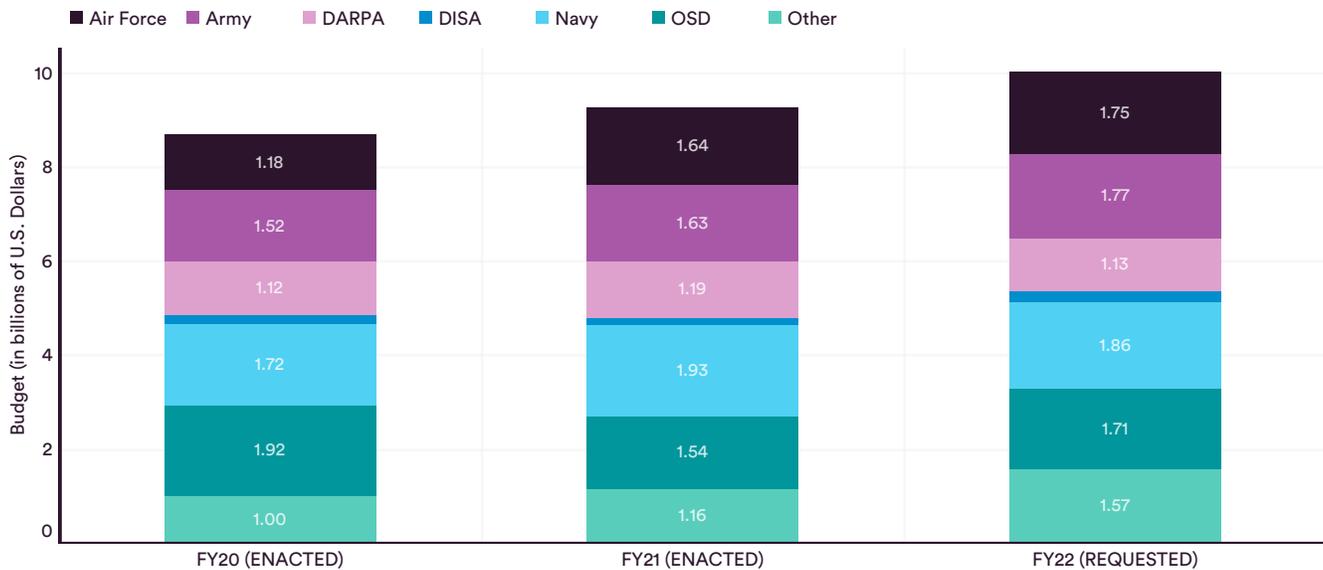


Figure 5.2.3

## U.S. GOVERNMENT AI-RELATED CONTRACT SPENDING

Public investment in AI can also be measured by federal government spending on AI-related contracts. U.S. government agencies often award contracts to private companies for the supply of various goods and services that typically occupy the largest share of an agency’s budget. Bloomberg Government built a model to classify whether a U.S. government contract was AI-related by adding up all contracting transactions that contain a set

of more than 100 AI-specific keywords in their titles or descriptions.<sup>5</sup>

### Total Contract Spending

In 2021, federal departments and agencies spent a total of \$1.79 billion on AI-related contracts. Although this amount is nearly double what was spent on AI-related contracts in 2018 (roughly \$920 million), it represents a slight decrease from the amount spent on AI-related contracts in 2020, which peaked at \$1.97 billion (Figure 5.2.4).

### U.S. GOVERNMENT TOTAL CONTRACT SPENDING on AI, FY 2000–21

Source: Bloomberg Government, 2021 | Chart: 2022 AI Index Report

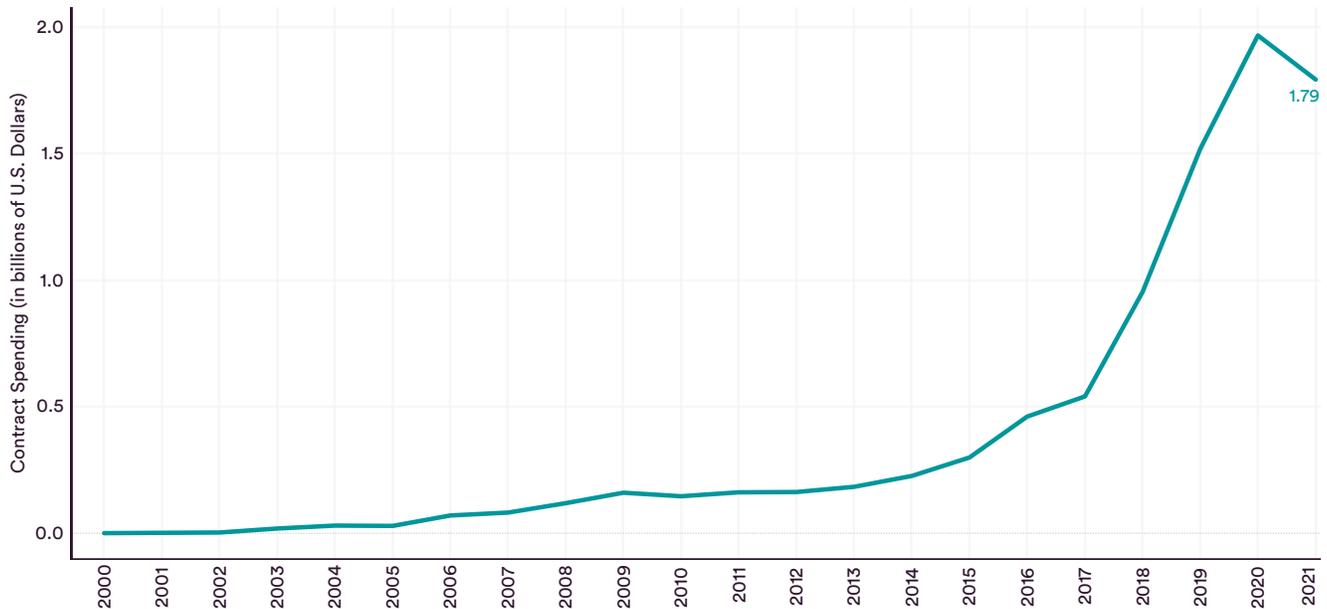


Figure 5.2.4

<sup>5</sup> Note that contractors may add a number of keywords into their applications during the procurement process, so some of the projects included may have a relatively small AI component relative to other parts of technology.

### Contract Spending by Department and Agency

Figures 5.2.5 and 5.2.6 report AI-related contract spending by the top 10 federal agencies in 2021 and from 2000 to 2021, respectively. The DOD outspent the rest of the U.S. government on both charts by a significant margin. In 2021, it spent \$1.14 billion on AI-related contracts, roughly five times what was spent by the next highest department, the Department of Health and Human Services (\$234 million).

Aggregate spending on AI contracts in the last four years tells a similar story. Since 2018, the DOD has spent \$5.20 billion on AI contracts, approximately seven times the next highest spender, NASA (\$1.41 billion). In fact, since 2018, the DOD has spent twice as much on AI-related contracts as all other government agencies combined. Following the DOD and NASA are the Department of Health and Human Services (\$700 million), the Department of Homeland Security (\$362 million), and Department of the Treasury (\$156 million).

#### TOP CONTRACT SPENDING on AI by U.S. GOVERNMENT DEPARTMENT and AGENCY, 2021

Source: Bloomberg Government, 2021 | Chart: 2022 AI Index Report

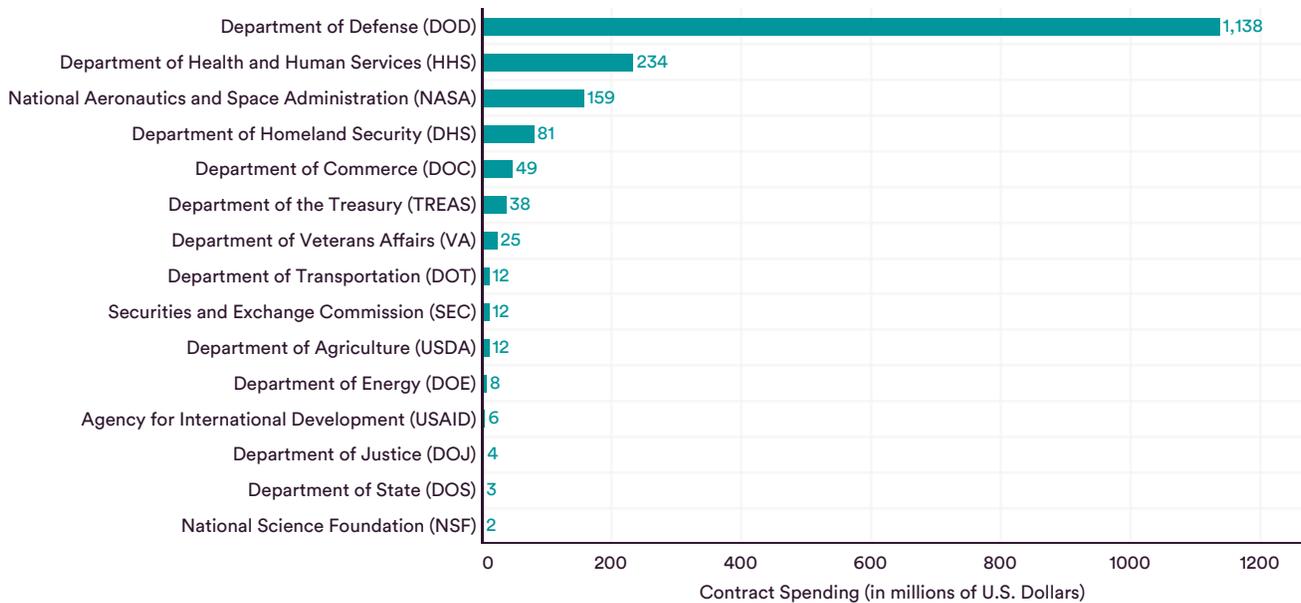


Figure 5.2.5



### TOP CONTRACT SPENDING on AI by U.S. GOVERNMENT DEPARTMENT and AGENCY, 2000–21 (SUM)

Source: Bloomberg Government, 2021 | Chart: 2022 AI Index Report

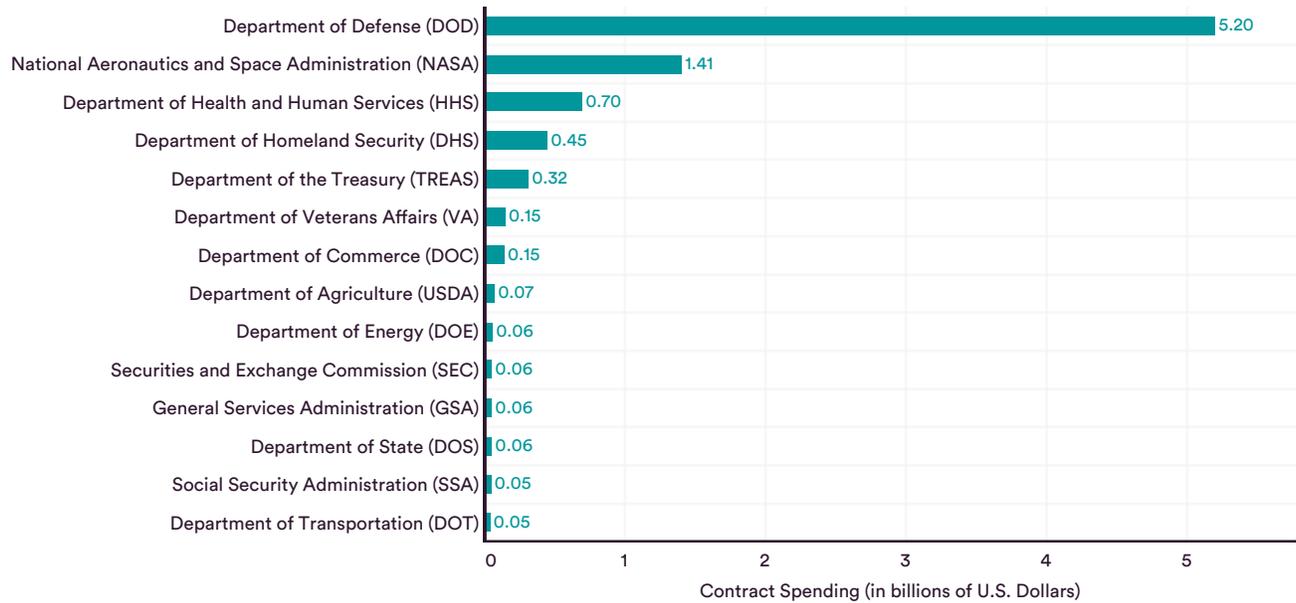


Figure 5.2.6

## Largest Contract for Five Top-Spending Departments in 2021

To paint a better picture of how different U.S. government departments use AI, Table 5.2.2 shows the most expensive AI-related contract that the five highest AI-related-spending departments signed in 2021. Last year, the U.S. government invested in AI to build autonomous vehicle prototypes, develop an AI imaging system that could assist with burn classification, and create robots capable of higher-level lunar navigation.

Contract Name	Department	Amount (in millions)	Purpose
Prototype Services in the Objective Areas of Automotive Cybersecurity, Vehicle Safety Technologies, Vehicle Light Weighting, Autonomous Vehicles and Intelligent Systems, Connected Vehicles, and Advanced Energy Storage Technologies	DOD	70	To acquire prototypes in the domain of automotive cybersecurity, vehicle safety technologies, and autonomous vehicles and intelligent systems.
Biomedical Advanced Research and Development Authority (BARDA)	HHS	20	To develop optical imaging devices and machine learning algorithms to assist in classifying and healing wounds and conventional burns.
Commercial Lunar Payload Services	NASA	14	To develop lunar robots capable of navigating the moon's south pole to acquire lunar resources and engage in lunar-based scientific activities.
SBIR-Autonomous Surveillance Towers-Delivery Order	DHS	37	To construct towers capable of autonomous surveillance.
Schedule 70: Information Technology	DOC	13	To develop a prototype using AI technology that can improve patent search.

Table 5.2.2



# APPENDIX

## BLOOMBERG GOVERNMENT

Prepared by Amanda Allen

Bloomberg Government is a premium, subscription-based service that provides comprehensive information and analytics for professionals who interact with—or are affected by—the government. Delivering news, analytics, and data-driven decision tools, Bloomberg Government’s digital workspace gives an intelligent edge to government affairs and contracting professionals. For more information or a demo, visit [about.bgov.com](https://about.bgov.com).

### Methodology

**Contract Spending:** Bloomberg Government’s Contracts Intelligence Tool structures all contracts data from [www.fpds.gov](https://www.fpds.gov). The CIT includes a model of government spending on artificial intelligence-related contracts that is based on a combination of government-defined product service codes and more than 100 AI-related keywords. For the section “U.S. Government Contract Spending,” Bloomberg Government analysts used contract spending data from fiscal year 2000 through fiscal year 2021.

**Defense RDT&E Budget:** Bloomberg Government organized all the RDT&E budget request line items available from the [Defense Department Comptroller](#). For the section “U.S. Department of Defense (DOD) Budget,” Bloomberg Government used a set of AI-specific keywords to identify 500 unique budget activities related to artificial intelligence and machine learning worth a combined \$5.9 billion in FY 2021.

**Legislative Documents:** Bloomberg Government maintains a repository of congressional documents, including bills, Congressional Budget Office assessments, and reports published by congressional committees, the Congressional Research Service, and other offices. Bloomberg Government also ingests state legislative bills. For the section “AI Policy and Governance,” Bloomberg Government analysts identified all legislation, congressional committee reports, and CRS reports that referenced one or more AI-specific keywords.

## GLOBAL LEGISLATION RECORDS ON AI

For AI-related bills passed into laws, the AI Index performed searches of the keyword “artificial intelligence,” in respective languages, on the websites of 25 countries’ congresses or parliaments, in full-text of bills. Note that only laws passed by state-level legislative bodies and signed into law (i.e., by presidents or received royal assent) from 2015 to 2021 are included. Future AI Index reports hope to include analysis on other types of legal documents, such as regulations and standards, adopted by state- or supranational-level legislative bodies, government agencies, etc.

### Australia

Website: [www.legislation.gov.au](http://www.legislation.gov.au)

Keyword: artificial Intelligence

Filters:

- Legislation types: Acts
- Portfolios: Department of House of Representatives, Department of Senate

Note: Texts in explanatory memorandum are not counted.

### Belgium

Website: <http://www.ejustice.just.fgov.be/loi/loi.htm>

Keyword: intelligence artificielle

### Brazil

Website: <https://www.camara.leg.br/legislacao>

Keyword: inteligência artificial

Filter:

- Federal legislation
- Type: Law

### Canada

Website: <https://www.parl.ca/legisinfo/>

Keyword: artificial Intelligence

Note: Results were investigated to determine how many of the bills introduced were eventually passed (i.e., received royal assent) and bill status was recorded.

### China

Website: <https://flk.npc.gov.cn/>

Keyword: 人工智能

Filters:

- Legislative body: Standing Committee of the National People’s Congress

### Denmark

Website: <https://www.retsinformation.dk/>

Keyword: kunstig intelligen

Filter:

- Document Type: Laws

### Finland

Website: <https://www.finlex.fi/>

Keyword: tekoäly

Noting under the Current Legislation section

### France

Website: <https://www.legifrance.gouv.fr/>

Keyword: intelligence artificielle

Filter:

- texte consolidé
- Document Type: Law

### Germany

Website: <http://www.gesetze-im-internet.de/index.html>

Keyword: künstliche Intelligenz

Filter:

- All federal codes, statutes, and ordinances that are currently in force
- Volltextsuche (full text)
- Und-Verknüpfung der Wörter (entire word)

### India

Website: <https://www.indiacode.nic.in>

Keyword: artificial intelligence

Note: The website used allows for a search of keywords in legalization title but not in the full text, as such it is not useful for this particular research. Therefore, a Google search using the “site” function to search the site with the keyword of “artificial intelligence” is conducted.

### Ireland

Website: [www.irishstatutebook.ie](http://www.irishstatutebook.ie)

Keyword: artificial intelligence

### Italy

Website: <https://www.normattiva.it/>

Keyword: intelligenza artificiale

Filter:

- Document Type: law

### Japan

Website: <https://elaws.e-gov.go.jp/>

Keyword: 人工知能

Filter:

- Full text
- Law

### Netherlands

Website: <https://www.overheid.nl/>

Keyword: kunstmatige intelligentie

Filter:

- Document Type: Wetten

### New Zealand

Website: [www.legislation.govt.nz](http://www.legislation.govt.nz)

Keyword: Artificial intelligence

Filter:

- Document type: acts
- Status option: For the status option (example: acts in force, current bills, etc.)

### Norway

Website: <https://lovdata.no/>

Keyword: kunstig intelligens

### Russia

Website: <http://graph.garant.ru:8080/SESSION/PILOT/main.htm> (Database “The Federal Laws” in the official website of the Federation Council of the Federal Assembly of the Russian Federation.)

Keyword: искусственный интеллект

Filter:

- Words in text

### Singapore

Website: <https://sso.agc.gov.sg/>

Keyword: artificial intelligence

Filter:

- Document Type: Current acts and subsidiary legislation

### South Africa

Website: [www.gov.za](http://www.gov.za)

Keyword: artificial intelligence

Filter:

- Document: acts

Note: This search function seemingly does not search within the context of the full text and so no results were returned. Therefore, a Google search using the “site” function to search the site with the keyword of “artificial intelligence” is conducted.

### South Korea

Website: <https://law.go.kr/eng/>; <https://elaw.klri.re.kr/>

Keyword: artificial Intelligence or 인공 지능

Filter:

- Type: Act

Note: Cannot search combined words, so individual analysis is conducted.

### Spain

Website: <https://www.boe.es/>

Keyword: inteligencia artificial

Filter:

- Type: law
- Head of state (for passed laws)

### Sweden

Website: <https://www.riksdagen.se/>

Keyword: artificiell intelligens

Filter: Swedish Code of Statutes



## Switzerland

Website: <https://www.fedlex.admin.ch/>

Keyword: intelligence artificielle

Filter:

- Text category: federal constitution, federal acts, and federal decrees, miscellaneous texts, orders, and other forms of legislation.
- Publication period for legislation was limited to 2015-2021.

## United Kingdom

Website: <https://www.legislation.gov.uk/>

Keyword: artificial intelligence

Filter:

- Legislation Type: U.K. Public General Acts & U.K. Statutory Instruments

## United States

Website: <https://www.congress.gov/>

Keyword: artificial intelligence

Filter:

- Source: Legislation

Status of legislation: Became law

## MENTIONS OF AI IN AI-RELATED LEGISLATION PROCEEDINGS

For mentions of AI in AI-related legislative proceedings around the world, the AI Index performed searches of the keyword “artificial intelligence,” in respective languages, on the websites of 25 countries’ congresses or parliaments, usually under sections named “minutes,” “hansard,” etc.

### Australia

Website: [https://www.aph.gov.au/Parliamentary\\_Business/Hansard](https://www.aph.gov.au/Parliamentary_Business/Hansard)

Keyword: artificial intelligence

### Belgium

Website: [http://www.parlement.brussels/search\\_form\\_fr/](http://www.parlement.brussels/search_form_fr/)

Keyword: intelligence artificielle

Filter:

- Document Type: all

### Brazil

Website: <https://www2.camara.leg.br/atividade-legislativa/discursos-e-notas-taquigraficas>

Keyword: inteligência artificial

Filter:

- Federal legislation
- Type: Law

### Canada

Website: <https://www.ourcommons.ca/PublicationSearch/en/?PubType=37>

Keyword: artificial Intelligence

### China

Website: Various reports on the work of the government

Keyword: 人工智能

Note: The National People’s Congress is held once per year and does not provide full legislative proceedings. Hence, the counts included in the analysis only searched the mentions of artificial intelligence in the only public document released from the Congress meetings, the Report on the Work of the Government, delivered by the Premier.

### Denmark

Website: <https://www.retsinformation.dk/>

Keyword: kunstig intelligens

Filter:

- Minutes

### Finland

Website: <https://www.eduskunta.fi/>

Keyword: tiedot

Filter:

- Parliamentary Affairs and Documents
- Public document: Minutes
- Actor: Plenary sessions

### France

Website: <https://www.assemblee-nationale.fr/>

Keyword: intelligence artificielle

Filter:

- Reports of the debates in session

Note: Such documents were only prepared starting in 2017.

### Germany

Website: <https://dip.bundestag.de/>

Keyword: künstliche Intelligenz

Filter:

- Speeches, requests to speak in the plenum

### India

Website: <http://loksabhaph.nic.in/>

Keyword: artificial intelligence

Filter:

- Exact word/phrase

### Ireland

Website: <https://www.oireachtas.ie/>

Keyword: artificial intelligence

Filter: Content of parliamentary debates

## Italy

Website: <https://aic.camera.it/aic/search.html>

Keyword: intelligenza artificiale

Filter:

- Type: All
- Search by exact phrase

## Japan

Website: <https://kokkai.ndl.go.jp/#/>

Keyword: 人工知能

Filter:

- Full text
- Law

## Netherlands

Website: [https://www.tweedekamer.nl/kamerstukken?pk\\_campaign=breadcrumb](https://www.tweedekamer.nl/kamerstukken?pk_campaign=breadcrumb)

Keyword: kunstmatige intelligentie

Filter:

- Parliamentary papers - Plenary reports

## New Zealand

Website: <https://www.parliament.nz/en/pb/hansard-debates/>

Keyword: artificial intelligence

## Norway

Website: <https://www.stortinget.no/no/Saker-og-publikasjoner/Publikasjoner/Referater/>

Keyword: kunstig intelligens

Note: This search function does not directly allow the keyword within minutes. Therefore, a Google search using the “site” function to search the site with the keyword of “artificial intelligence” is conducted.

## Russia

Website: <http://transcript.duma.gov.ru/>

Keyword: искусственный интеллект

Filter:

- Words in text

## Singapore

Website: <https://sprs.parl.gov.sg/search/home>

Keyword: artificial intelligence

## South Africa

Website: <https://www.parliament.gov.za/hansard>

Keyword: artificial intelligence

Note: This search function does not search within the context of the full text and so no results were returned. Therefore, a Google search using the “site” function to search <https://www.parliament.gov.za/storage/app/media/Docs/hansard/> with the keyword “artificial intelligence” is conducted.

## South Korea

Website: <http://likms.assembly.go.kr/>

Keyword: 인공 지능

Filter:

- Meeting Type: All

## Spain

Website: <https://www.congreso.es/>

Keyword: inteligencia artificial

Filter:

- Official publications of parliamentary proceedings

## Switzerland

Website: <https://www.parlament.ch/>

Keyword: intelligence artificielle

Filter:

- Parliamentary proceedings

## Sweden

Website: <https://www.riksdagen.se/sv/global/sok/?q=&doktyp=prot>

Keyword: artificiell intelligens

Filter:

- Minutes



## United Kingdom

Website: <https://hansard.parliament.uk/>

Keyword: artificial intelligence

Filter

- References

## United States

Website: <https://www.congress.gov/>

Keyword: artificial intelligence

Filter:

- Source: Congressional record
- Congressional record section: Senate, House of Representatives, and Extensions of Remarks

## U.S. AI POLICY PAPERS

### Organizations

To develop a more nuanced understanding of the thought leadership that motivates AI policy, we tracked policy papers published by 55 organizations in the United States or with a strong presence in the United States (expanded from the list of 36 organizations last year) across four broad categories:

- Civil Society, Associations & Consortiums: Algorithmic Justice League, Alliance for Artificial Intelligence in Healthcare, Amnesty International, EFF, Future of Privacy Forum, Human Rights Watch, IJIS Institute, Institute for Electrical and Electronics Engineers, Partnership on AI
- Consultancy: Accenture, Bain & Company, Boston Consulting Group, Deloitte, McKinsey & Company
- Government Agencies: Congressional Research Service, Library of Congress, Defense Technical Information Center, Government Accountability Office, Pentagon Library
- Private Sector Companies: Google AI, Microsoft AI, Nvidia, OpenAI
- Think Tanks & Policy Institutes: American Enterprise Institute, Aspen Institute, Atlantic Council, Brookings Institute, Carnegie Endowment for International Peace, Cato Institute, Center for a New American Security, Center for Strategic and International

Studies, Council on Foreign Relations, Heritage Foundation, Hudson Institute, MacroPolo, National Security Institute, New America Foundation, RAND Corporation, Rockefeller Foundation, Stimson Center, Urban Institute, Wilson Center

- University Institutes & Research Programs: AI and Humanity Cornell University; AI Now Institute, New York University; AI Pulse, UCLA Law; Belfer Center for Science and International Affairs, Harvard University; Berkman Klein Center, Harvard University; Center for Information Technology Policy, Princeton University; Center for Long-Term Cybersecurity, UC Berkeley; Center for Security and Emerging Technology, Georgetown University; CITRUS Policy Lab, UC Berkeley; Hoover Institution; Institute for Human-Centered Artificial Intelligence, Stanford University; Internet Policy Research Initiative, Massachusetts Institute of Technology; MIT Lincoln Laboratory; Princeton School of Public and International Affairs

### Methodology

Each broad topic area is based on a collection of underlying keywords that describe the content of the specific paper. We included 17 topics that represented the majority of discourse related to AI between 2018-2021. These topic areas and the associated keywords are listed below:

- Health & Biological Sciences: medicine, healthcare systems, drug discovery, care, biomedical research, insurance, health behaviors, COVID-19, global health
- Physical Sciences: chemistry, physics, astronomy, earth science
- Energy & Environment: energy costs, climate change, energy markets, pollution, conservation, oil and gas, alternative energy
- International Affairs & International Security: international relations, international trade, developing countries, humanitarian assistance, warfare, regional security, national security, autonomous weapons
- Justice & Law Enforcement: civil justice, criminal justice, social justice, police, public safety, courts



- Communications & Media: social media, disinformation, media markets, deepfakes
- Government & Public Administration: federal government, state government, local government, public sector efficiency, public sector effectiveness, government services, government benefits, government programs, public works, public transportation
- Democracy: elections, rights, freedoms, liberties, personal freedoms
- Industry & Regulation: economy, antitrust, M&A, competition, finance, management, supply chain, telecom, economic regulation, technical standards, autonomous vehicle industry and regulation
- Innovation & Technology: advancements and improvements in AI technology, R&D, intellectual property, patents, entrepreneurship, innovation ecosystems, startups, computer science, engineering
- Education & Skills: early childhood, K-12, higher education, STEM, schools, classrooms, reskilling
- Workforce & Labor: labor supply and demand, talent, immigration, migration, personnel economics, future of work
- Social & Behavioral Sciences: sociology, linguistics, anthropology, ethnic studies, demography, geography, psychology, cognitive science
- Humanities: arts, music, literature, language, performance, theater, classics, history, philosophy, religion, cultural studies
- Equity & Inclusion: biases, discrimination, gender, race, socioeconomic inequality, disabilities, vulnerable populations
- Privacy, Safety & Security: anonymity, GDPR, consumer protection, physical safety, human control, cybersecurity, encryption, hacking
- Ethics: transparency, accountability, human values, human rights, sustainability, explainability, interpretability, decision-making norms