Supplemental Resources for Learning about the Ethics of Artificial Intelligence

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Soon after papers describing successful experimentation with [recombinant DNA](https://en.wikipedia.org/wiki/Recombinant_DNA#History) were published in the early 1970s, scientists realized the potential existential biohazard risks this new technology posed. These concerns motivated the organization of the [1975 Asilomar Conference on Recombinant DNA](https://en.wikipedia.org/wiki/Asilomar_Conference_on_Recombinant_DNA) to address these issues. The participants were not only biologists, but also lawyers and physicians. This conference generated a published set of [principles](https://en.wikipedia.org/wiki/Asilomar_Conference_on_Recombinant_DNA#Established_principles), [recommendations](https://en.wikipedia.org/wiki/Asilomar_Conference_on_Recombinant_DNA#Recommendations_given), and [prohibitions](https://en.wikipedia.org/wiki/Asilomar_Conference_on_Recombinant_DNA#Prohibited_experiments) – all with [public transparency](https://en.wikipedia.org/wiki/Asilomar_Conference_on_Recombinant_DNA#Science_and_the_general_public). The significant precedents this conference established are summarized [here](https://en.wikipedia.org/wiki/Asilomar_Conference_on_Recombinant_DNA#Significance_of_the_conference).

In 2010, based on the 1975 Asilomar Conference model, climate scientists organized the [Asilomar International Conference on Climate Intervention Technologies](https://en.wikipedia.org/wiki/Asilomar_International_Conference_on_Climate_Intervention_Technologies) to identify and minimize potentially existential risks concerning [climate engineering](https://en.wikipedia.org/wiki/Climate_engineering). Again, the set of participants was broad, comprising scientists, engineers, environmentalists, disaster relief workers, and lawyers – in a transparent and open meeting. A set of [recommendations](https://en.wikipedia.org/wiki/Asilomar_International_Conference_on_Climate_Intervention_Technologies#Recommendations) followed.

In the first two decades of the twenty first century, rapid enabling advances in computing hardware and systems efficiencies and capacities driving [big data](https://en.wikipedia.org/wiki/Big_data) capabilities, as well as [deep learning](https://en.wikipedia.org/wiki/Deep_learning) algorithmic advances, led computer scientists, and the general public, to worry that pace and scope of AI innovations may be spiraling out of control. So, in 2017 the [Asilomar Conference on Beneficial AI](https://en.wikipedia.org/wiki/Asilomar_Conference_on_Beneficial_AI) was convened to address ethical the potentially [existential risks](https://en.wikipedia.org/wiki/Existential_risk_from_artificial_general_intelligence) that [artificial intelligence](https://en.wikipedia.org/wiki/Artificial_intelligence) development and applications foreshadowed, and to promote the [ethical development and application of artificial intelligence](https://en.wikipedia.org/wiki/Ethics_of_artificial_intelligence). Following the models, of the prior Asilomar conferences, attendees were experts comprising a diverse set of professions including, programmers, engineers, roboticists, physicists, economists, ethicists, and legal scholars. During the conference attendees participated in a [principled AI discussion](https://futureoflife.org/principles/principled-ai-discussion-asilomar/) leading to the drafting of [23 principles of AI governance](https://futureoflife.org/open-letter/ai-principles/). These 23 principles were categorized and partitioned into a set of *research issues*, a set of *ethics and values*, and a set of *longer-term issues*. [Here](https://gizmodo.com/these-23-principles-could-help-us-avoid-an-ai-apocalyps-1791920321) is a nice journalistic overview of this Asilomar AI conference (including links to earlier efforts which were deemed “… either too narrow in scope, or far too generalized.”).

Following are a set of categorized curated resource listings to better understand the ethical issues that artificial intelligence (AI) development and application raise.

# Definitions

There are definitions we must establish:

* [*Cognitive science*](https://en.wikipedia.org/wiki/Cognitive_science) is not[*artificial intelligence*](https://en.wikipedia.org/wiki/Artificial_intelligence) --  
  cognitive science is understanding how a human mind solves challenging problems, whereas artificial intelligence algorithms and systems are free to use any effective methodology to solve challenging problems;
  + [Categories](https://en.wikipedia.org/wiki/Artificial_intelligence#Goals) of AI problem solving;
    - [Machine learning](https://en.wikipedia.org/wiki/Machine_learning);
    - [Knowledge representation](https://en.wikipedia.org/wiki/Knowledge_representation) and [knowledge engineering](https://en.wikipedia.org/wiki/Knowledge_engineering);
    - [Automated planning](https://en.wikipedia.org/wiki/Automated_planning_and_scheduling) and [automated decision making](https://en.wikipedia.org/wiki/Automated_decision_making);
    - [Natural language processing](https://en.wikipedia.org/wiki/Natural_language_processing);
    - [Machine perception](https://en.wikipedia.org/wiki/Machine_perception);
    - [Affective computing](https://en.wikipedia.org/wiki/Affective_computing);
    - [artificial general intelligence](https://en.wikipedia.org/wiki/Artificial_general_intelligence);
  + [Heuristics](https://en.wikipedia.org/wiki/Artificial_intelligence#Techniques) of AI problem solving;
    - [Outline](https://en.wikipedia.org/wiki/Outline_of_artificial_intelligence) of AI problem solving;
  + [Applications](https://en.wikipedia.org/wiki/Artificial_intelligence#Applications) of AI problem solving;
    - [Generative AI](https://en.wikipedia.org/wiki/Generative_artificial_intelligence);
    - [Military AI](https://en.wikipedia.org/wiki/Applications_of_artificial_intelligence#Military);
  + [Philosophy](https://en.wikipedia.org/wiki/Philosophy_of_artificial_intelligence) of AI problem solving;
  + [Ethics](https://en.wikipedia.org/wiki/Ethics_of_artificial_intelligence) of AI problem solving;
* An *automaton* is an autonomous entity with an [etymological original meaning](https://en.wikipedia.org/wiki/Automaton#Etymology) of “acting of one’s own will”.
  + [Robot](https://en.wikipedia.org/wiki/Robot)ics [glossary](https://en.wikipedia.org/wiki/Glossary_of_robotics);
    - [Nanorobotics](https://en.wikipedia.org/wiki/Nanorobotics);
  + [Android](https://en.wikipedia.org/wiki/Android_(robot));
    - [Uncanny valley](https://en.wikipedia.org/wiki/Uncanny_valley);
  + [Cyborg](https://en.wikipedia.org/wiki/Cyborg);
  + [Animatronic](https://en.wikipedia.org/wiki/Animatronics);
  + [Self-replicating machine](https://en.wikipedia.org/wiki/Self-replicating_machine);
    - [Gray goo](https://en.wikipedia.org/wiki/Gray_goo);

# AI History

How we got here…

* [Automaton history](https://en.wikipedia.org/wiki/Automaton#History);
  + [Talos](https://en.wikipedia.org/wiki/Talos) – Greek mythology;
  + [Golem](https://en.wikipedia.org/wiki/Golem#History) – Jewish folklore;
  + [History of robots](https://en.wikipedia.org/wiki/History_of_robots);
* [History of artificial intelligence](https://en.wikipedia.org/wiki/History_of_artificial_intelligence);
  + [Timeline](https://en.wikipedia.org/wiki/Timeline_of_artificial_intelligence);
  + [Progress](https://en.wikipedia.org/wiki/Progress_in_artificial_intelligence);
  + [Formal reasoning](https://en.wikipedia.org/wiki/History_of_artificial_intelligence#Formal_reasoning);
  + [Automated reasoning](https://en.wikipedia.org/wiki/Automated_reasoning#Early_years);
  + [Knowledge representation and reasoning](https://en.wikipedia.org/wiki/Knowledge_representation_and_reasoning#History);
  + [Machine learning](https://en.wikipedia.org/wiki/Timeline_of_machine_learning);
  + [Dartmouth workshop](https://en.wikipedia.org/wiki/Dartmouth_workshop) & [50 year anniversary conference](https://en.wikipedia.org/wiki/AI@50);

The history of consideration of thinking machines goes back to the nineteenth century in fiction literature, which we will cover in a separate section. In what we can consider modern computer science, we can refer to the [Turing test](https://en.wikipedia.org/wiki/Turing_test), wherein a human tries to determine whether they are conversing with an artificial intelligence. Alan Turing included what he termed the “Imitation Game” in his seminal paper, [“Computing Machinery and Intelligence”](https://en.wikipedia.org/wiki/Computing_Machinery_and_Intelligence). Interestingly, a recent article claims that [ChatGPT broke the Turing test](https://www.nature.com/articles/d41586-023-02361-7). Where an AI is tasked with determining whether it is conversing with a human, that is termed a [reverse Turing test](https://en.wikipedia.org/wiki/Reverse_Turing_test), and [CAPTCHA](https://en.wikipedia.org/wiki/CAPTCHA)s are examples.

# The Butler did it – history of AI in fiction genres

Reacting to the epiphanies of [Charles Darwin](https://en.wikipedia.org/wiki/Charles_Darwin)’s publications on [natural selection](https://en.wikipedia.org/wiki/Natural_Selection_(manuscript)), Nineteenth Century author, [Samuel Butler](https://en.wikipedia.org/wiki/Samuel_Butler_(novelist)), (one quarter century after [Charles Babbage](https://en.wikipedia.org/wiki/Charles_Babbage) designed his [Analytical Engine](https://en.wikipedia.org/wiki/Analytical_engine), the first computer design considered to be [*Turing complete*](https://en.wikipedia.org/wiki/Turing_completeness)) wrote an article for newspaper publication, [“Darwin among the Machines”](https://en.wikipedia.org/wiki/Darwin_among_the_Machines), wherein Butler speculated whether machines may eventually supplant humans. This essay was included in his [*Book of the Machines*](https://en.wikipedia.org/wiki/Darwin_among_the_Machines#Book_of_the_Machines) which became incorporated into his novel, [*Erewhon*](https://en.wikipedia.org/wiki/Erewhon). The society in Erewhon has a distant history where a revolution destroyed most mechanical inventions – a more successful version of the machine-breaking in the [Luddite](https://en.wikipedia.org/wiki/Luddite) movement in the early Nineteenth Century. This machine-destroying revolution in *Erewhon,* lent Butler’s name to a backstory in [Frank Herbert](https://en.wikipedia.org/wiki/Frank_Herbert)’s [*Dune*](https://en.wikipedia.org/wiki/Dune_(novel)) novel named the [Butlerian Jihad](https://en.wikipedia.org/wiki/Dune:_The_Butlerian_Jihad), which is why there is no active AI in *Dune*.

There are other examples in Nineteenth Century speculative fiction, where artificial intelligences are described. One could consider [Mary Shelly](https://en.wikipedia.org/wiki/Mary_Shelley)’s [Frankenstein](https://en.wikipedia.org/wiki/Frankenstein)’s Monster to be an artificial intelligence. Prior references are found in [“Ancient dreams of intelligent machines: 3,000 years of robots”](https://www.nature.com/articles/d41586-018-05773-y).

A principal sub-genre of speculative fiction where AI is often encountered is the [science fiction](https://en.wikipedia.org/wiki/Science_fiction) genre. There is a rich [history of AI in science fiction](https://en.wikipedia.org/wiki/Artificial_intelligence_in_fiction). Science fiction often extrapolates the development and implementation of a current or future technology then speculates its effect on people, society, or mankind – the technology we are considering is AI. An extensive and comprehensive survey of AI in fiction is in the article, “[Artificial intelligence in fiction: between narratives and metaphors](https://link.springer.com/article/10.1007/s00146-021-01299-6)”.

There is a long history of [AI in film](https://en.wikipedia.org/wiki/List_of_artificial_intelligence_films). Here’s a listing of “[The top 20 AI films in pictures](https://www.theguardian.com/culture/gallery/2015/jan/08/the-top-20-artificial-intelligence-films-in-pictures)”. The [AI *tropes* in film](https://www.filminquiry.com/film-tropes-artificial-intelligence/), and in [television series](https://tvtropes.org/pmwiki/pmwiki.php/Main/ArtificialIntelligence), have been categorized (however, absent is the *transcendence* trope where the AI evolves past the [Singularity](https://tvtropes.org/pmwiki/pmwiki.php/Main/TheSingularity), transcending the need of physical media to exist, finding humans of no interest anymore, so the AI just leaves. The film, [*Her*](https://tvtropes.org/pmwiki/pmwiki.php/Film/Her2013), exhibits this trope.). There are numerous [television series which featured AI](https://www.imdb.com/list/ls021780957/), also listed [here](https://en.wikipedia.org/wiki/Category:Television_series_about_artificial_intelligence).

The term “robot” was coined in the Czech play, [*R.U.R*](https://en.wikipedia.org/wiki/R.U.R.) in 1921. One of the earliest and most memorable film robots was Maschinenmensch in Fritz Lang’s [*Metropolis*](https://en.wikipedia.org/wiki/Metropolis_(1927_film))(1927). Here’s a [list of fictional robots and androids](https://en.wikipedia.org/wiki/List_of_fictional_robots_and_androids). Arguably, the most seminal set of stories about robots and artificial intelligence is Asimov’s [Robot Series](https://en.wikipedia.org/wiki/Robot_series), where he originates his [Three Laws of Robotics](https://en.wikipedia.org/wiki/Three_Laws_of_Robotics) in 1942 in his short story, [“Runaround”](https://en.wikipedia.org/wiki/Runaround_(story)), which was added to his collection, [*I Robot*](https://en.wikipedia.org/wiki/I,_Robot). Common plot twists involving the three laws of robotics are that the robots interpret the laws differently than humans would. For instance, the primary law is “A robot may not injure a human being or, through inaction, allow a human being to come to harm”, which might force the robot to imprison humans to keep them from hurting each other – this is analogous to the [trolley problem for autonomous vehicles](https://en.wikipedia.org/wiki/Trolley_problem#Implications_for_autonomous_vehicles). The Robot series was then incorporated with Asimov’s [Foundation series](https://en.wikipedia.org/wiki/Foundation_series) to comprise the [Foundation Universe](https://en.wikipedia.org/wiki/Foundation_universe).

One of the most seminal AI computers appeared in Kubrik’s & Clark’s [*2001: A Space Odyssey*](https://en.wikipedia.org/wiki/2001:_A_Space_Odyssey) – [HAL](https://en.wikipedia.org/wiki/HAL_9000). In Clark’s novelization of the film, we learn that HAL’s deadly behavior was caused by an attempt to resolve conflicting directives. Here’s a [list of fictional computers](https://en.wikipedia.org/wiki/List_of_fictional_computers), including HAL. A more humorous fictional computer is [Deep Thought](https://en.wikipedia.org/wiki/List_of_The_Hitchhiker%27s_Guide_to_the_Galaxy_characters#Deep_Thought) from the [HHGttG](https://en.wikipedia.org/wiki/The_Hitchhiker%27s_Guide_to_the_Galaxy_(novel)) by Douglas Adams. Another fictional trend is for an AI to emerge within a computer network – the most influential of these is [Skynet](https://en.wikipedia.org/wiki/Skynet_(Terminator)), from the [*Terminator*](https://en.wikipedia.org/wiki/The_Terminator) film, which proves to be an existential threat AI – here’s a reference including other [AI takeovers in popular culture](https://en.wikipedia.org/wiki/AI_takeover_in_popular_culture). The problems with uncontrolled self-replicating is [gray goo](https://en.wikipedia.org/wiki/Gray_goo) featured in the [Stargate TV series](https://en.wikipedia.org/wiki/List_of_Stargate_SG-1_characters#Replicators). [Von Neumann probes](https://en.wikipedia.org/wiki/Self-replicating_spacecraft#Von_Neumann_probes) are the origin of the machine civilization in James P. Hogan’s [*Code of the Lifemaker*](https://en.wikipedia.org/wiki/Code_of_the_Lifemaker).

# Existential Threats

An existential threat is a risk to the survival of the human race. Here are some categories:

* [Global\_catastrophic\_risk](https://en.wikipedia.org/wiki/Global_catastrophic_risk)
* [Existential\_risk\_from\_artificial\_general\_intelligence](https://en.wikipedia.org/wiki/Existential_risk_from_artificial_general_intelligence)
* [Technological\_singularity](https://en.wikipedia.org/wiki/Technological_singularity)
* [Recursive\_self-improvement](https://en.wikipedia.org/wiki/Recursive_self-improvement)
* [Superintelligence](https://en.wikipedia.org/wiki/Superintelligence)
  + [Superintelligence: Paths, Dangers, Strategies - Wikipedia](https://en.wikipedia.org/wiki/Superintelligence:_Paths,_Dangers,_Strategies)
* [AI\_takeover](https://en.wikipedia.org/wiki/AI_takeover)
  + [Skynet (*Terminator*) — Wikipedia](https://en.wikipedia.org/wiki/Skynet_(Terminator))
* [Artificial\_intelligence\_arms\_race](https://en.wikipedia.org/wiki/Artificial_intelligence_arms_race)
* [Lethal\_autonomous\_weapon](https://en.wikipedia.org/wiki/Lethal_autonomous_weapon)
* [List\_of\_fictional\_military\_robots](https://en.wikipedia.org/wiki/List_of_fictional_military_robots)
* [Slaughterbots](https://en.wikipedia.org/wiki/Slaughterbots)
* [Artificial\_Intelligence\_Cold\_War](https://en.wikipedia.org/wiki/Artificial_Intelligence_Cold_War)
* [Artificial intelligence arms race — Wikipedia](https://en.wikipedia.org/wiki/Artificial_intelligence_arms_race)
* [Effective altruism: long-term future and global catastrophic risks — Wikipedia](https://en.wikipedia.org/wiki/Effective_altruism#Long-term_future_and_global_catastrophic_risks)

# AI Ethics

* [Ethics\_of\_artificial\_intelligence](https://en.wikipedia.org/wiki/Ethics_of_artificial_intelligence)
* [Machine\_ethics](https://en.wikipedia.org/wiki/Machine_ethics)
* [AI\_alignment](https://en.wikipedia.org/wiki/AI_alignment)
  + [The AI Alignment Problem: Why It's Hard, and Where to Start — MIRI](https://intelligence.org/stanford-talk/) [video w. Webpage annotations]
  + [*The Alignment Problem: Machine Learning and Human Values* by Brian Christian](https://brianchristian.org/the-alignment-problem/)
  + [*The Alignment Problem* — C-SPAN](https://www.c-span.org/video/?477164-1/the-alignment-problem) [video w. transcript]
  + [*The Alignment Problem*, Linking Machine Learning And Human Values — Forbes](https://www.forbes.com/sites/davidteich/2020/10/29/the-alignment-problem-linking-machine-learning-and-human-values/) {Review}
* [Robot\_ethics](https://en.wikipedia.org/wiki/Robot_ethics)
  + [Military robot: Ethical and legal concerns — Wikipedia](https://en.wikipedia.org/wiki/Military_robot#Ethical_and_legal_concerns)
  + [Is robotics about to have its own ChatGPT moment?](https://www.technologyreview.com/2024/04/11/1090718/household-robots-ai-data-robotics/)
* [AI\_safety](https://en.wikipedia.org/wiki/AI_safety)
* [Moral\_agency#Artificial\_Moral\_Agents](https://en.wikipedia.org/wiki/Moral_agency#Artificial_Moral_Agents)
* [Moral\_responsibility#Artificial\_systems](https://en.wikipedia.org/wiki/Moral_responsibility#Artificial_systems)
* [science-fiction-ethics-and-the-human-condition](https://research-portal.uea.ac.uk/en/publications/science-fiction-ethics-and-the-human-condition)
* [*Human Compatible: Artificial Intelligence and the Problem of Control* — Wikipedia](https://en.wikipedia.org/wiki/Human_Compatible)

# Algorithm-Centric Ethics

* [Rise of the machines: are algorithms sprawling out of our control? — Wired](http://www.wired.co.uk/article/technology-regulation-algorithm-control)
* [Statement on Algorithmic Transparency and Accountability — ACM](https://www.acm.org/binaries/content/assets/public-policy/2017_usacm_statement_algorithms.pdf) US Public Policy Council
* [Principles for Algorithmic Transparency and Accountability: A Provenance Perspective](https://lucmoreau.wordpress.com/2017/01/20/principles-for-algorithmic-transparency-and-accountability-a-provenance-perspective/)
* [Rise of the machines: are algorithms sprawling out of our control? - Wired](https://www.wired.com/story/technology-regulation-algorithm-control/)
* [Regulation of algorithms — Wikipedia](https://en.wikipedia.org/wiki/Regulation_of_algorithms)
  + [Regulation\_of\_artificial\_intelligence](https://en.wikipedia.org/wiki/Regulation_of_artificial_intelligence)
* [Algorithmic bias — Wikipedia](https://en.wikipedia.org/wiki/Algorithmic_bias)
  + [Why algorithms can be racist and sexist: A computer can make a decision faster. That doesn't make it fair — Vox](https://www.vox.com/recode/2020/2/18/21121286/algorithms-bias-discrimination-facial-recognition-transparency)
  + [Stable Diffusion’s text-to-image model amplifies stereotypes about race and gender — here’s why that matters](https://www.bloomberg.com/graphics/2023-generative-ai-bias/)
  + [Bias In AI Algorithms — towards data science](https://towardsdatascience.com/how-are-algorithms-biased-8449406aaa83)
  + [The Real Reason Tech Struggles With Algorithmic Bias — Wired](https://www.wired.com/story/the-real-reason-tech-struggles-with-algorithmic-bias/)
  + [I Know Some Algorithms Are Biased — because I Created One — SciAm](https://blogs.scientificamerican.com/voices/i-know-some-algorithms-are-biased-because-i-created-one/)
  + [Biased Algorithms Learn From Biased Data: 3 Kinds Biases Found In AI Datasets](https://www.forbes.com/sites/cognitiveworld/2020/02/07/biased-algorithms/)
  + [Algorithmic bias detection and mitigation: Best practices and policies to reduce consumer harms — Brookings](https://www.brookings.edu/research/algorithmic-bias-detection-and-mitigation-best-practices-and-policies-to-reduce-consumer-harms/)
  + [Algorithmic Bias In Health Care: A Path Forward — Health Affairs](https://www.healthaffairs.org/do/10.1377/hblog20191031.373615/full/)
  + [The coming war on the hidden algorithms that trap people in poverty — MIT Technology Review](https://www.technologyreview.com/2020/12/04/1013068/algorithms-create-a-poverty-trap-lawyers-fight-back/)
  + [There's an Unsettling Racial Bias in How Well AI Faces Can Fool Us](https://www.sciencealert.com/theres-an-unsettling-racial-bias-in-how-well-ai-faces-can-fool-us)
  + [How AI bias happens – and how to eliminate it - Healthcare IT News](https://www.healthcareitnews.com/news/how-ai-bias-happens-and-how-eliminate-it)
  + [Scientists Built an AI to Give Ethical Advice, But It Turned Out Super Racist - Futurism](https://futurism.com/delphi-ai-ethics-racist)
  + [Should ChatGPT be Biased? Challenges and Risks of Bias in Large Language Models](https://arxiv.org/abs/2304.03738)
  + [Introducing the AI Equity Lab and the path toward more inclusive tech](https://www.brookings.edu/articles/introducing-the-ai-equity-lab-and-the-path-toward-more-inclusive-tech/)
* [Behavioral ethics -- Wikipedia](https://en.wikipedia.org/wiki/Behavioral_ethics)
  + [Behavioral Ethics: Toward a Deeper Understanding of Moral Judgment and Dishonesty - Bazerman](https://dash.harvard.edu/bitstream/handle/1/10996807/bazerman_gino_beh-ethics-toward_annual-review_dec2012.pdf)
  + [Teaching Behavioral Ethics - Robert Prentice [PDF]](https://ethicsunwrapped.utexas.edu/wp-content/uploads/2014/09/Teaching-Behavioral-Ethics-by-Robert-A.-Prentice.pdf)
  + [Behavioral Ethics - Herbert Gintis [PDF]](https://www.umass.edu/preferen/gintis/BehavioralEthics.pdf)
  + [Behavioral ethics for Homo economicus, Homo heuristicus, and Homo duplex - Kluver](https://www.sciencedirect.com/science/article/pii/S0749597813001271)
  + [Behavioral Ethics lab](https://www.behavioralethics.org/) (economics focus)
  + [What is behavioral ethics? Why is it important for all companies?](https://www.linkedin.com/pulse/what-behavioral-ethics-why-important-all-companies-di-miceli)
  + [The Ethics of Intracorporate Behavioral Ethics - California Law Review](https://www.californialawreview.org/the-ethics-of-intracorporate-behavioral-ethics/)
  + [Bounded Ethicality](https://ethicsunwrapped.utexas.edu/glossary/bounded-ethicality)
  + [Decision Making (& bounded ethicality)](https://www.ethicalsystems.org/decision-making/)

# Nation-state and pan-nation-state-level regulation

Nation-states and pan-nation-states (e.g. the EU) have been working towards developing regulatory frameworks individually and collectively to understand and regulate AI. These processes usually begin by forming a panel of experts. After some time, the panel of experts drafts a recommendation report. Laws and regulations are then enacted based on the report recommendations. Here’s progress so far:

### USA

* [FACT SHEET: President Biden Issues Executive Order on Safe, Secure, and Trustworthy Artificial Intelligence -- The White House](https://www.whitehouse.gov/briefing-room/statements-releases/2023/10/30/fact-sheet-president-biden-issues-executive-order-on-safe-secure-and-trustworthy-artificial-intelligence/)
  + [Biden-⁠Harris Administration Announces Key AI Actions 180 Days Following President Biden’s Landmark Executive Order](https://www.whitehouse.gov/briefing-room/statements-releases/2024/04/29/biden-harris-administration-announces-key-ai-actions-180-days-following-president-bidens-landmark-executive-order/)
* [NIST: Executive Order on Safe, Secure, and Trustworthy Artificial Intelligence](https://www.nist.gov/artificial-intelligence/executive-order-safe-secure-and-trustworthy-artificial-intelligence)
* [NSF Statement on White House’s Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence](https://new.nsf.gov/news/nsf-statement-wh-executive-order-safe-secure-trust)
* [NSF: NSF-led National Artificial Intelligence Research Resource Task Force Releases Final Report](https://new.nsf.gov/news/nsf-led-national-artificial-intelligence-research)
* [NSF: Strengthening and Democratizing the U.S. Artificial Intelligence Innovation Ecosystem: An Implementation Plan for a National Artificial Intelligence Research Resource [PDF]](https://www.ai.gov/wp-content/uploads/2023/01/NAIRR-TF-Final-Report-2023.pdf)
* [WH: National Artificial Intelligence Research Resource Task Force Releases Final Report](https://www.whitehouse.gov/ostp/news-updates/2023/01/24/national-artificial-intelligence-research-resource-task-force-releases-final-report/)
* [AI.GOV](https://ai.gov/) (U.S. government website for AI)
* [U.S. Government Will Support Domestic PCB Manufacturing {related to AI Act}](https://www.tomshardware.com/news/us-government-will-support-domestic-pcb-manufacturing)
* [The US Just Unveiled The Most Ambitious Attempt to Control AI to Date - Science Alert](https://www.sciencealert.com/the-us-just-unveiled-the-most-ambitious-attempt-to-control-ai-to-date) {Australian perspective}

#### **States**

* [The State of State AI Laws: 2023 -- EPIC.org](https://epic.org/the-state-of-state-ai-laws-2023/)
* [Enacts the New York artificial intelligence bill of rights](https://www.nysenate.gov/legislation/bills/2023/A8129)
* [New York State Senate: Requires disclosure of the use of artificial intelligence in political communications](https://www.nysenate.gov/legislation/bills/2023/S7592/amendment/A)

### **EU**

* [EU AI Act: first regulation on artificial intelligence](https://www.europarl.europa.eu/news/en/headlines/society/20230601STO93804/eu-ai-act-first-regulation-on-artificial-intelligence)
* [EU: The Artificial Intelligence Act](https://artificialintelligenceact.eu/)
* [EU: THE AI ACT](https://artificialintelligenceact.eu/the-act/)
* [The EU AI Act: A Primer](https://cset.georgetown.edu/article/the-eu-ai-act-a-primer/)

### UK

* [GOV.UK: Proposed principles to guide competitive AI markets and protect consumers](https://www.gov.uk/government/news/proposed-principles-to-guide-competitive-ai-markets-and-protect-consumers)
* [AI Foundation Models: Initial report](https://www.gov.uk/government/publications/ai-foundation-models-initial-report)
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**Commentary Resources**

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* <https://www.schneier.com/tag/artificial-intelligence/>
* <https://www.wbur.org/search?q=artificial%20intelligence&channel=onpoint>
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