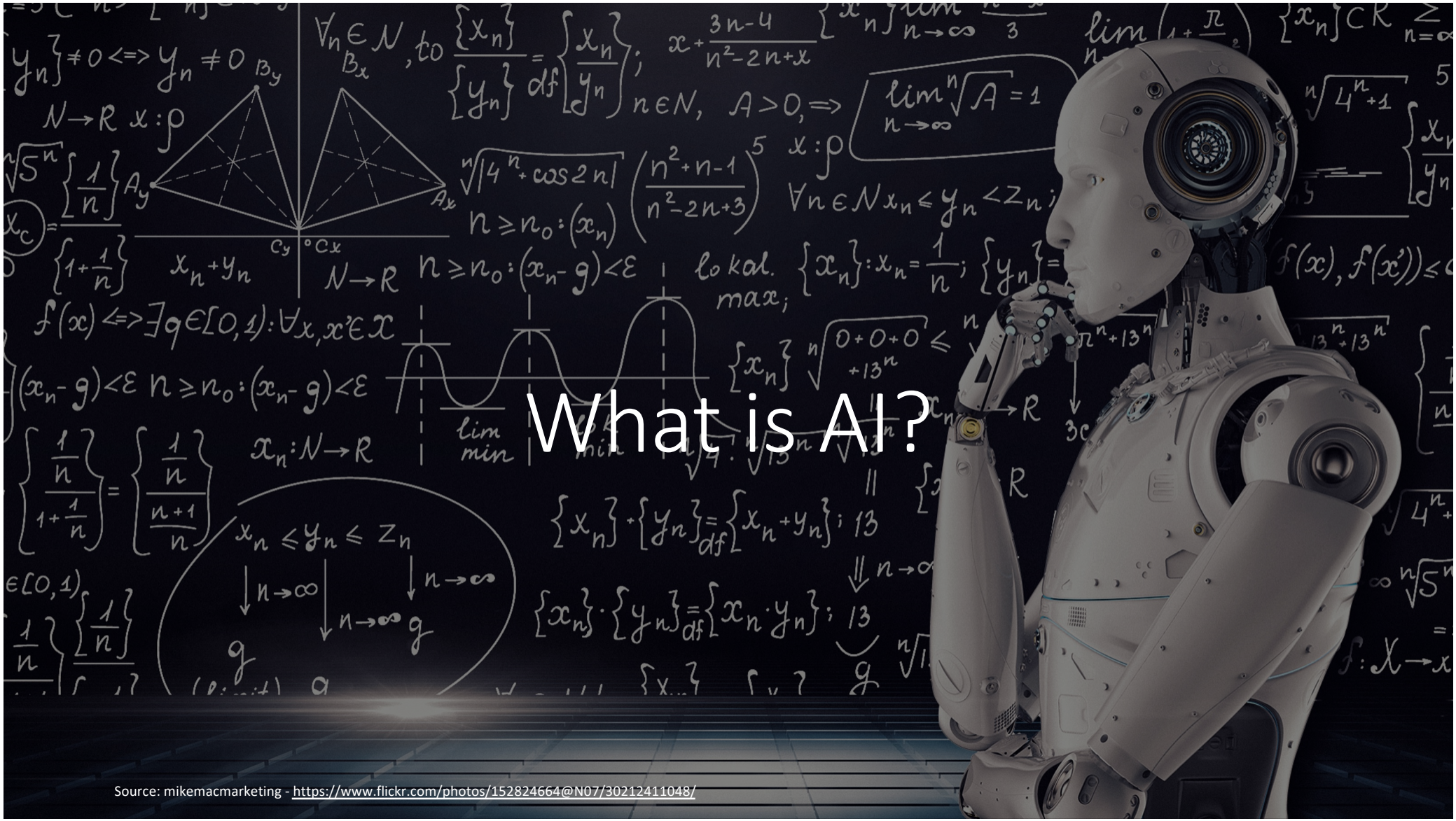
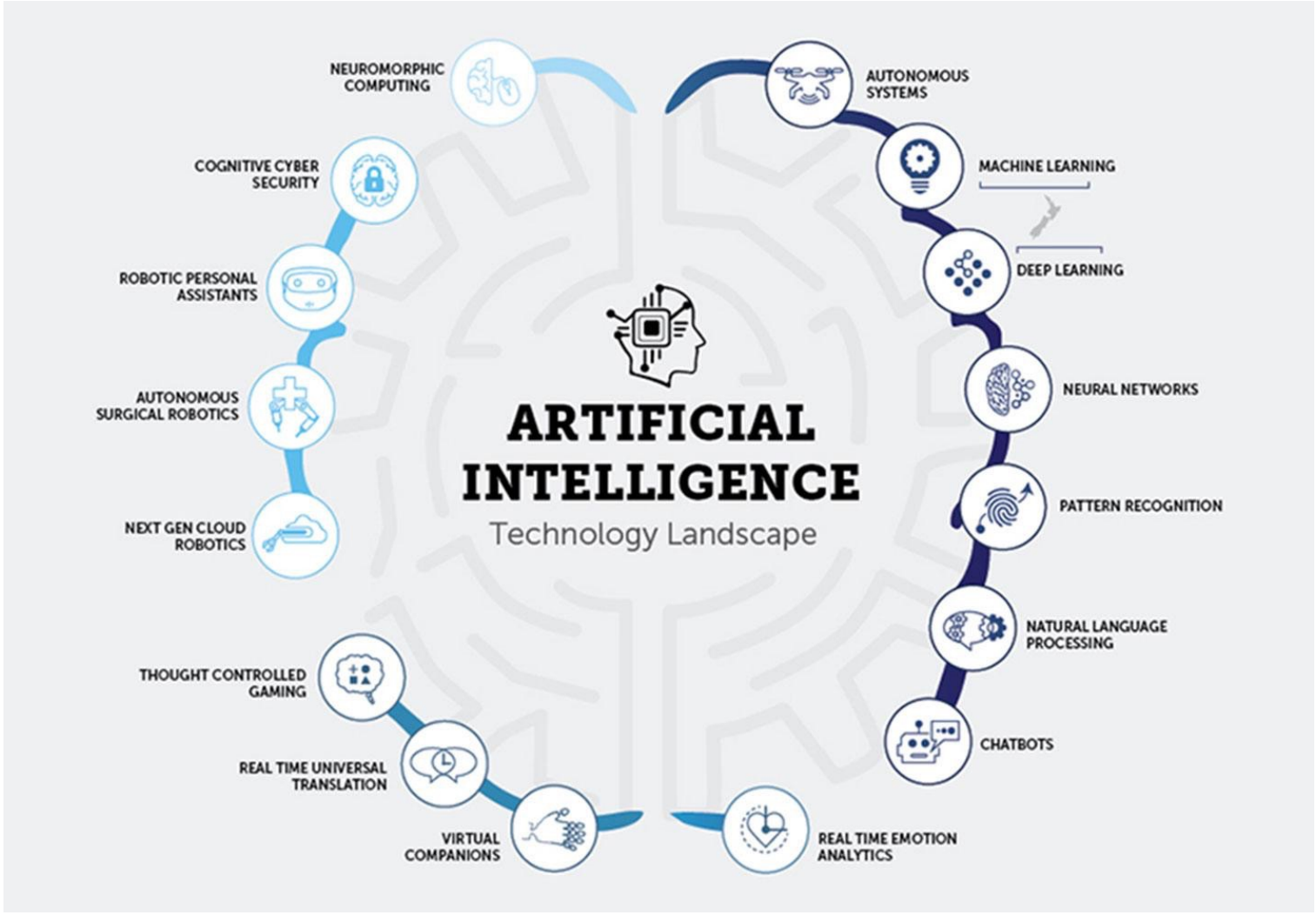
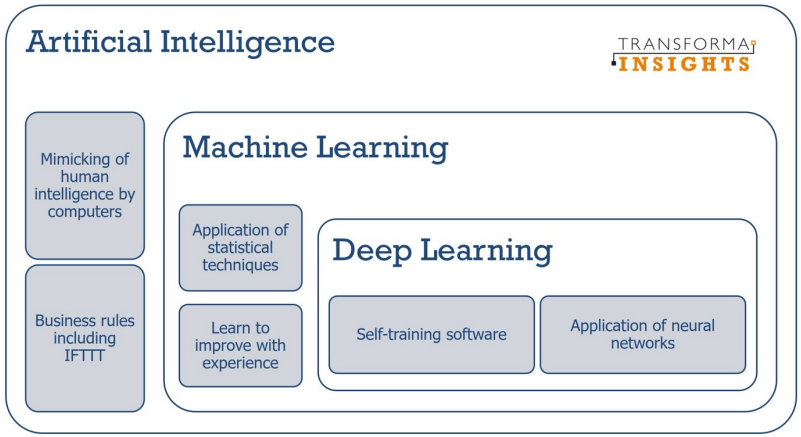
What is AI?

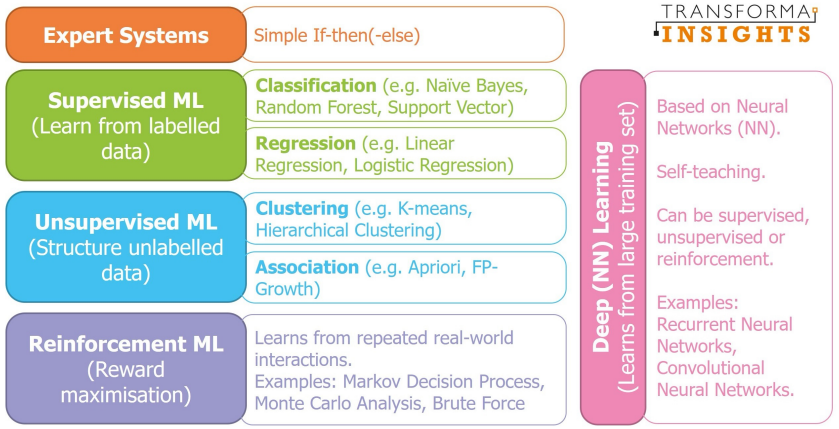


Source: mikemacmarketing - https://www.flickr.com/photos/152824664@N07/30212411048/



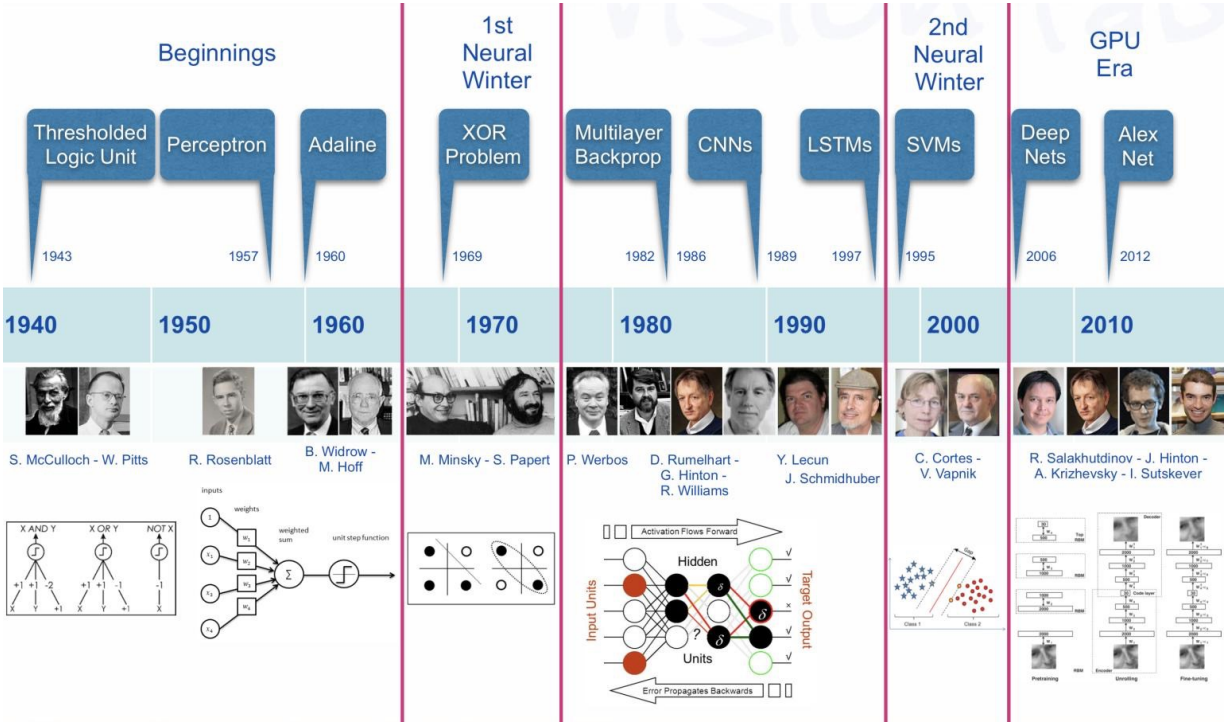
https://www.aitimejournal.com/what-is-artificial-intelligence-ai/29625/





Source: https://transformainsights.com/ai-machine-learning

Growth of AI

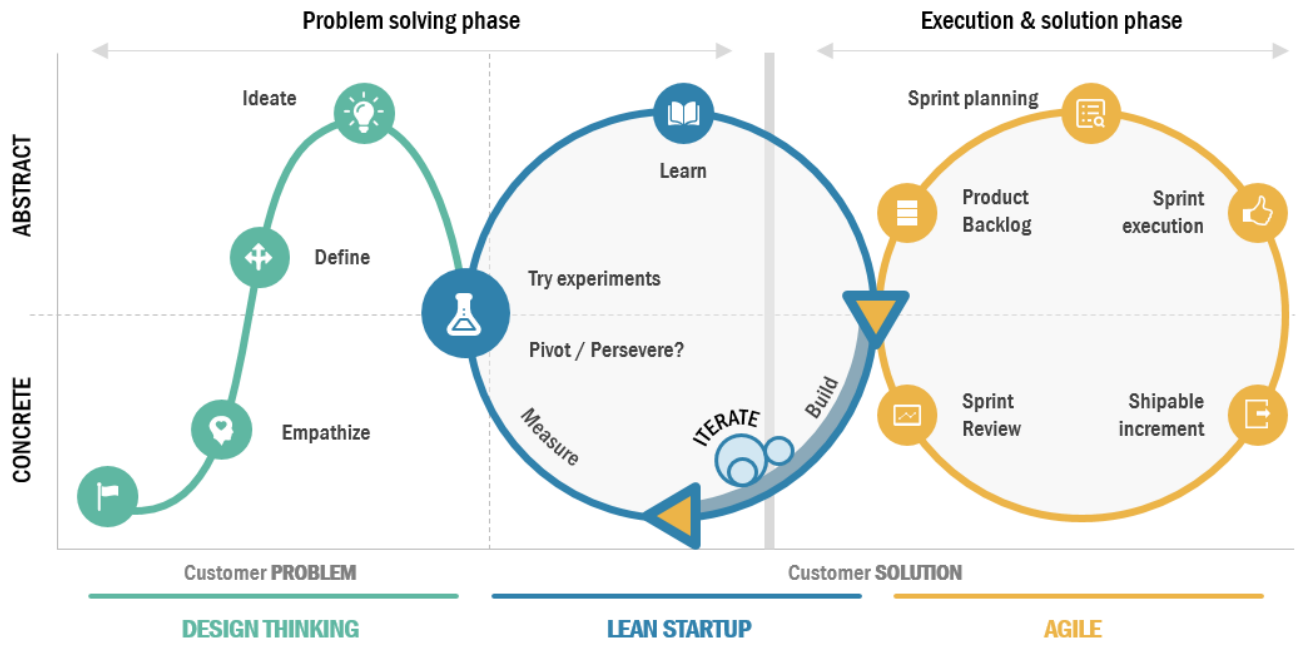


Source: https://www.reddit.com/media?url=https%3A%2F%2Fi.redd.it%2Ff9p9r69qctm31.jpg

AI Today

Deutsche Telekom Deepfake AI Ad

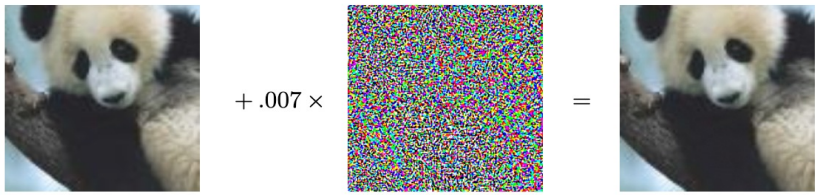
How Technology Innovation Happens



Adapted from Gartner https://www.linkedin.com/pulse/design-thinking-lean-startup-agile-pradeep-patel/

Ethics

	OECD AI Principle Addressed	US	EU	China
Values Based Principles	Inclusive growth, sustainable development and well-being	X	X	X
	Human-centred values and fairness	X	X	X
	Transparency and explainability	X	X	X
	Robustness, security and safety	X	X	X
	Accountability	X	X	
Recommendation for AI policies	Investing in AI R&D	X	X	
	Fostering a digital ecosystem for AI	X	X	X
	Providing an enabling policy environment for AI	X	X	
	Building human capacity and preparing for labour market transition	X	X	X
	International co-operation for trustworthy AI	X	X	



Panda

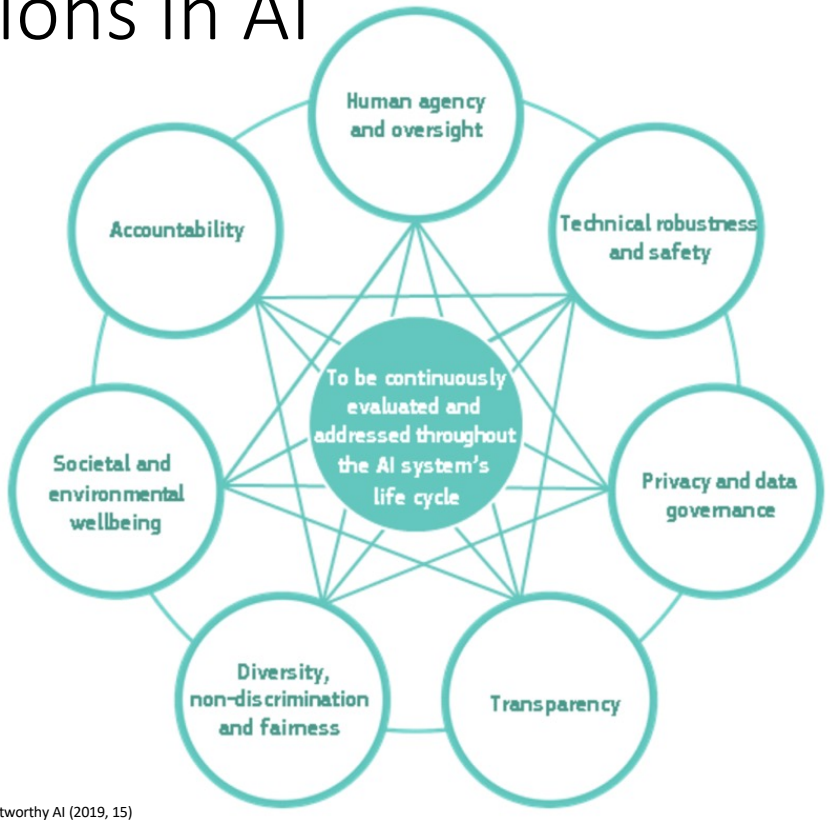
Gibbon

Sources:

Chart adapted from OECD AI Principles in Governmental Strategy (note spellings are those of OECD)

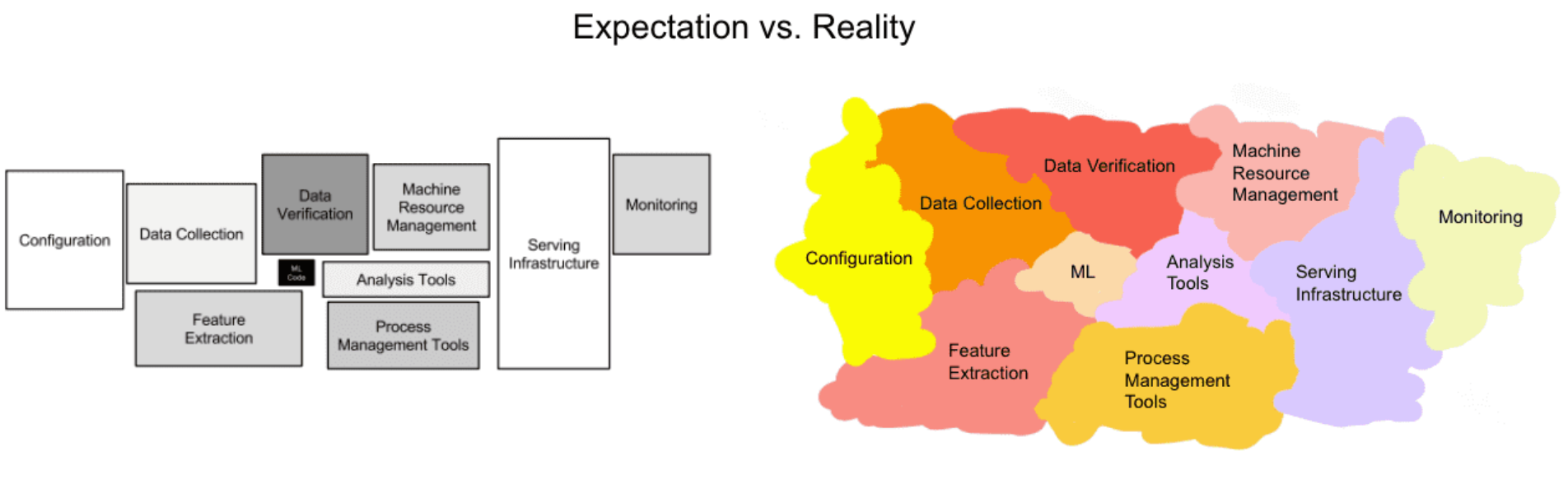
Panda: (Goodfellow, Shlens, and Szegedy 2015)

Ethical Considerations in AI



Model: European Union requirements for Ethics of Trustworthy AI (2019, 15)

Strategy Challenge



Source: ("MLOps Is a Mess But That's to Be Expected - Mihail Eric" n.d.)

Regulating AI

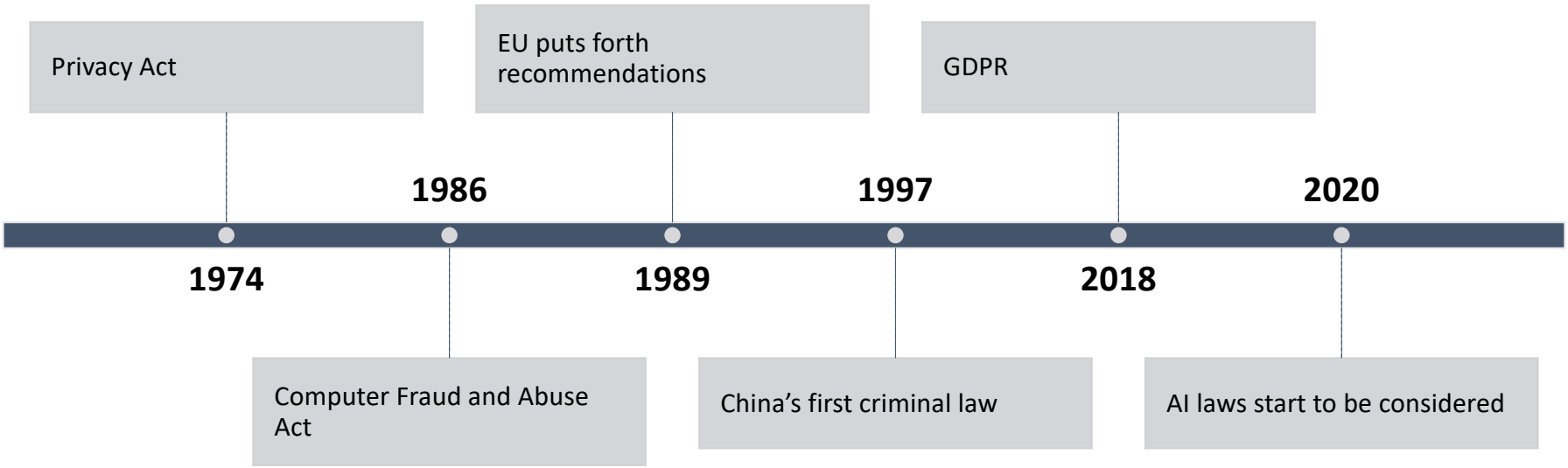


Table 3. Expected policy instrument mix of the four state types.

Dimensions	Entrepreneurial state	Market-oriented state	Regulatory state	Self-regulation-promoting state
Authority				
Direct regulations	neutral	low	high	low
Governmental strategies	high	neutral	neutral	low
Finance				
Public investments	high	low	neutral	low
Financial incentives	neutral	high	neutral	neutral
Organization				
Institutions	neutral	neutral	high	low
Networks	high	neutral	low	high
Information				
Data & Monitoring	neutral	neutral	high	neutral
Certificates & Labels	neutral	high	neutral	high
Outreach & Literacy	high	neutral	neutral	neutral

Notes: 'High' indicates that we expect a high number of policy instruments to be generic for the respective state concept; 'low' indicates that we expect a low number of policy instruments to be generic for the respective state concept; 'neutral' means that we do not have clear theoretical assumptions, i.e., it can be both high or low numbers of policy instruments.

Regulating Strategies

		41 USA	*48* EU	*224* CHN
Information	Outreach & Literacy	7.3%	2.1%	1.3%
	Certificates & Labels	4.9%	2.1%	3.6%
	Data & Monitoring	19.5%	14.6%	3.6%
Organization	Networks	2.4%	6.3%	2.7%
	Institutions	2.4%	12.5%	6.3%
Finance	Financial Incentives	4.9%	6.3%	5.4%
	Public Investment	31.7%	37.5%	67.0%
Authority	Governmental Strategies	17.1%	10.4%	4.9%
	Direct Regulations	7.3%	8.3%	4.9%

Outlier (+1.5 standard deviation)

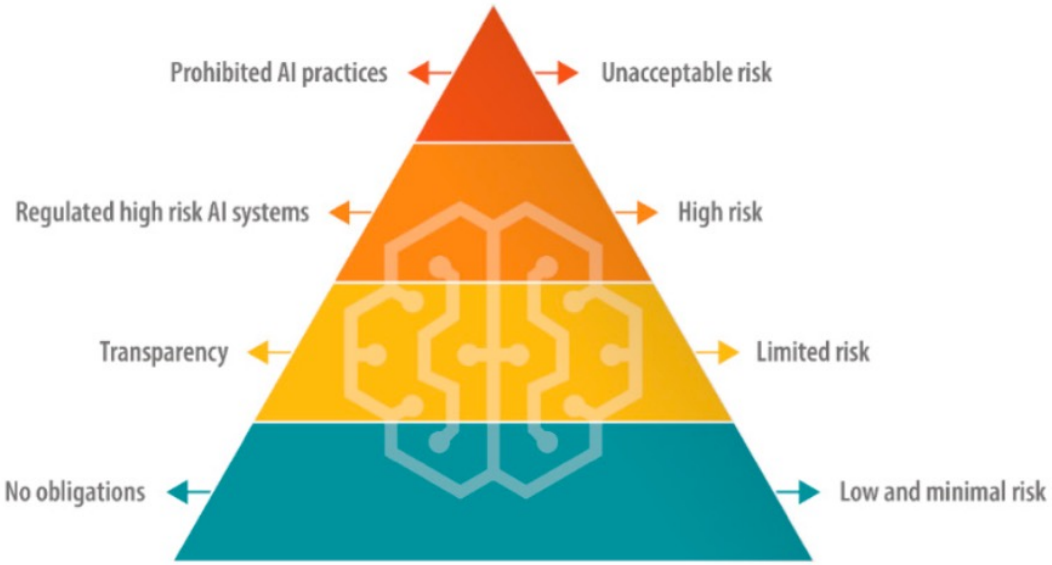
Minimum

Maximum

Source: AI governance policy toolkit modified (Djeffal, Siewert, and Wurster 2022)

Solutions

- Risk based
- Private Governance
- NIST AI Risk Management Framework
- The Artificial Intelligence Act
- Security and Privacy by Design



Crosswalk of NIST AI Risk Management Framework

NIST AI RMF	OECD Recommendation on AI	EU AI Act (Proposed)	EO 13960: Promoting the Use of Trustworthy AI in the Federal Government	Blueprint for an AI Bill of Rights
Valid and Reliable - includes accuracy and robustness	Robustness - "AI system lifecycle phases involve verification and validation"	Robustness; Validation; Accuracy	Accurate; reliable, and effective; Purposeful and performance driven	Validity; Accuracy; Reliability/reliable
Safe	Safe; Safety	Safety	Safe	Safe and effective
Secure and Resilient	Security	Security; Cybersecurity Resilient	Secure and resilient	Secure
Accountable and Transparent	Transparency; Transparency and responsible disclosure; accountability	Transparency; Accountability	Transparent; Accountable	Accountability reporting; Transparency
Explainable and Interpretable	Explainability	Explainable; Interpretability	Understandable by subject matter experts, users, and others, as appropriate	Notice and explanation; Explainable; Interpretable
Privacy-Enhanced	Privacy; Respect for human rights and privacy	Privacy- preserving measures	Lawful and respectful of our Nation's values "Ensure that the use of AI remains consistent with all applicable laws, including those related to privacy, civil rights, and civil liberties."	Privacy; Data privacy
Fair – with Harmful Bias Managed	Human-centered values and fairness	Non-discrimination	Lawful and respectful of our Nation's values; Responsible	Algorithmic discrimination protections; proactive assessment of equity in design Ensuring accessibility; Basic safeguards against abuse, bias, and discrimination to ensure all people are treated fairly

Breakdown of US AI Regulation

States

Arizona	1	New Mexico	1
California	8	New York	11
Colorado	1	North Carolina	1
Connecticut	2	North Dakota	1
Delaware	1	Oregon	1
Georgia	1	Pennsylvania	5
Hawaii	2	Rhode Island	7
Illinois	6	South Carolina	1
Maine	2	Tennessee	1
Maryland	3	Texas	4
Massachusetts	5	Utah	1
New Hampshire	1	Vermont	1
New Jersey	6	Washington	2

* New York City 1

What is Being Regulated

- Aspart of a privacy bill
- Preventing general harms
- Employment settings
- Healthcare
- Insurance
- Use by Government
- Generative AI
- Transparency and Understanding
- Other miscellaneous topics

Laws in Effect by End of 2022

State/City	Name	Date passed	Date in effect	Description
California	California Privacy Rights Act (CPRA)	3-Nov-20	1-Jan-23	CPRA amends the California Consumer Privacy Act, introducing provisions impacting AI like additional limitations on data retention, data sharing, and use of sensitive personal information.
Colorado	Colorado Privacy Act (CPA)	7-Jul-21	1-Jul-23	The CPA gives consumers the right to opt-out of profiling in furtherance of automated decisions. It also requires a data protection assessment for activities that pose a "heightened risk of harm," including targeted advertising and some types of profiling.
Connecticut	Connecticut Data Privacy Act (CTDPA)	10-May-22	1-Jul-23	The CTPA gives consumers the right to opt-out of profiling in furtherance of automated decisions. It also requires a data protection assessment for activities that pose a "heightened risk of harm," including targeted advertising and some types of profiling.
New York City	Automated Employment Decision Tools	11-Dec-21	1-Jan-23	AEDT regulates the use of AI in hiring. It requires employers to notify candidates about the use of such tools, allows candidates to request what data is used, and requires an annual audit to evaluate the tool for bias.
Virginia	Virginia Consumer Data Privacy Act (VCDPA)	2-Mar-21	1-Jan-23	The VCDPA gives consumers the right to opt-out of profiling in furtherance of automated decisions. It also requires a data protection assessment for activities that pose a "heightened risk of harm," including targeted advertising and some types of profiling.
Utah	Utah Consumer Privacy Act (UCPA)	24-Mar-22	31-Dec-23	The UCPA gives consumers the ability to opt-out of profiling using personal data. Notably, it does not require impact assessments for data controllers.

Laws Passed in 2023

State	Name	Date passed	Date in effect	Description
Arizona	Ballot Processing and Electronic Adjudication Limit (SB1565)	10-Apr-23	N/A (governor veto)	Ballot processing would not be able to use AI or learning software.
Connecticut	An Act Concerning Artificial Intelligence, Automated Decision-Making and Personal Data Privacy (S1103)	5-Jun-23	Starting from July 1, 2023	This law establishes an Office of Artificial Intelligence, protects children from targeted advertising, and establishes a task force to study AI and develop an AI Bill of Rights.
Delaware	Delaware Personal Data Privacy Act (HB154)	30-Jun-23	1-Jan-25	This law allows consumers to opt-out of profiling in furtherance of automated decisions and requires a data protection assessment for activities that pose a "heightened risk of harm."
Georgia	HB203	2-May-23	1-Jul-23	This law regulates automated eye assessments; among other things, automated eye assessments shouldn't replace eye exams that are done in "real time."
Hawaii	SR123/SCR179	Apr-23	Apr-23	This resolution warns against the unintended consequences of AI and urges Congress to discuss the benefits and risks of AI.
Indiana	Indiana Data Privacy Act (SB5)	1-May-23	1-Jan-26	This law allows consumers to opt-out of profiling in furtherance of automated decisions and requires a data protection assessment for activities that pose a "heightened risk of harm."
Maryland	HB622	8-May-23	1-Oct-23	This law establishes a grant program that funds small and medium-sized businesses that will implement "Industry 4.0 Technology," which includes AI.
Montana	Montana Consumer Data Privacy Act (SB 384)	21-Apr-23	1-Oct-24	This law allows consumers to opt-out of profiling in furtherance of automated decisions. It also requires a data protection assessment for activities that pose a "heightened risk of harm."
North Dakota	HB 1361	12-Apr-23	12-Apr-23	This act amends the North Dakota Code to clarify that AI is not a person.
Oregon	Oregon Consumer Privacy Act (SB619)	23-Jun-23	1-Jul-24	This act allows consumers to opt-out of profiling and requires a data protection assessment for some controllers that pose a "heightened risk of harm."
Tennessee	Tennessee Information Protection Act (SB0073)	11-May-23	1-Jul-25	This act allows consumers to opt-out of targeted advertising and profiling, and it requires data protection impact assessments for activities that pose a "heightened risk."
Texas	Texas Data Privacy and Security Act (HB4)	18-Jun-23	1-Jul-24	This act allows consumers to opt-out of targeted advertising and profiling, and requires data protection assessments for certain controllers.
Texas	Artificial Intelligence Advisory Council (HB 2060)	13-Jun-23	13-Jun-23	This act creates an advisory council to study the effects of AI and

Introduced in 2023 as Part of a Privacy Bill

State	Name	Date introduced	Description
Hawaii	Hawaii Consumer Data Protection Act (SB974 or SB1110/HB1497)	20-Jan-23	This bill would allow users to opt-out of profiling that uses their personal data, and would require data protection assessments for processing activities posing a "heightened risk to consumers."
Illinois	Illinois Data Privacy and Protection Act (HB3385)	17-Feb-23	This bill would regulate collection and processing of personal information through algorithms.
Maine	Maine Data Privacy and Protection Act (HB1270)	19-May-23	This bill prohibits discrimination through data processing, regulates targeted advertising, and requires an impact assessment for "high risk" algorithms.
Massachusetts	Massachusetts Data Privacy Protection Act (MDPPA), Massachusetts Information Privacy Protection Act (MIPSA), and the Internet Bill of Rights (H.1555)	January 18- 20, 2023	Three competing consumer privacy bills all would consumers the right to know about or opt-out of automated profiling, and require impact assessments for controllers engaged in automated decision making.
Minnesota	Minnesota Consumer Data Privacy Act (HF2309/SF2915)	15-Mar-23	This bill would allow consumers to opt-out of profiling and would require data protection assessments.
New Hampshire	Consumer Data Privacy Act (SB255)	19-Jan-23	This bill would allow consumers to opt-out of profiling and would require data protection assessments.
New York	New York Privacy Act (SB365 or AB3593)	January 4 and February 3, 2023	These alternative versions of a New York comprehensive privacy law give consumers more control over automated decisions used for profiling and require impact assessments.
Pennsylvania	Consumer Data Protection Act (HB708)	27-Mar-23	This bill would allow consumers to opt-out of profiling and would require data protection assessments.
Rhode Island	Rhode Island Data Transparency and Privacy Protection Act (HB6236)	30-Mar-23	This bill would allow consumers to opt-out of profiling and would require data protection assessments.
Washington	People's Privacy Act (SB5643/HB1616)	31-Jan-23	This bill would restrict the use of AI profiling and facial recognition in public accomodations.

Regulation to Prevent Harms

State/District	Name	Date introduced	Description
California	Automated Decision Tools (AB 331)	30-Jan-23	This bill would require impact assessments for automated decision making tools, and it would give consumers the right to request manual review for consequential decisions. Specifically, it expressed concern for decisions made in employment, education, housing, healthcare, utilities, family planning, financial services, and the criminal justice system.
District of Columbia	Stop Discrimination by Algorithms Act (B25-0114)	2-Feb-23	This bill would stop algorithms from making decisions based on individuals' protected personal traits.
New Jersey	S1402	10-Feb-23	This bill would make it unlawful for an automated decision system to discriminate against members of a protected class in loans, insurance, or healthcare settings.
New York	Digital Fairness Act (S2277)	19-Jan-23	This bill would require automated decision system impact assessments, prevent discriminatory practices with targeted advertising, and regulate the use of biometric data, among other provisions.

Employment Settings

State	Name	Date introduced	Description
Illinois	HB 3773	17-Feb-23	This bill would restrict employers from using race, or zip code as a proxy for race, when making automated hiring decisions.
Massachusetts	An Act Preventing a Dystopian Work Environment (H.1873)	16-Feb-23	This bill would require employers to provide employees with notice about algorithmic decisions and monitoring. It would also give employees the right to request information processed through algorithms.
New Jersey	A4909	5-Dec-22	This bill would require bias audits for automated decision tools used for hiring and would require employers to notify candidates that they were screened using an automated tool.
New York	S5641/A567	10-Mar-23	This bill would amend labor law to include criteria for automated decision making tools. It would also require disparate impact analysis.
New York	A7858	7-Jul-23	This bill would require employers to give notice to candidates if they use automated decision tools to make employment decisions.
Vermont	H114	25-Jan-23	This bill would restrict the electronic monitoring of employees for employment-related decisions.

Healthcare

State	Name	Date introduced	Description
California	AB1502	17-Feb-23	This bill would prevent healthcare providers using automated decision systems from discriminating based on race, color, national origin, sex, age, or disability.
Illinois	HB1002	11-Jan-23	This bill would require that algorithms used to diagnose patients are certified and shown to achieve accurate results. It also would give patients the right to know that an algorithm diagnosed them, and opt-out of its use.
Illinois	HB3338	17-Feb-23	This bill would prevent hospitals from adopting policies that prevent nurses from substituting their judgment for the automated recommendations of AI systems.
Maine	SB656a	12-Apr-23	This bill would prevent hospitals from adopting policies that prevent nurses from substituting their judgment for the automated recommendations of AI systems.
Massachusetts	HB1974	16-Feb-23	This bill would require that AI used for mental health patients be pre-approved and monitored, and that patients would be informed about and must consent to AI use.
Rhode Island	HB6285	19-Apr-23	This bill would require that AI used for mental health services be pre-approved, and that patients are informed about AI use and can opt for mental health treatment from a professional instead.
Texas	HB4695	10-Mar-23	This bill would only allow mental health professionals to administer mental health care through AI, and requires that the mental health professional be available to monitor progress or communicate with the patient.

Insurance

State	Name	Date introduced	Description
New Jersey	A537	11-Jan-22	This bill would require automobile insurers using AI to provide documentation that shows a lack of discriminatory outcomes.
New York	AB843	11-Jan-23	This bill would prevent automobile insurers from using factors like age, sex, marital status, sexual orientation, income level, or employment and education status to determine insurance rates.
Rhode Island	H5734	21-Feb-23	This bill would prohibit unfair discrimination in the insurance context, requiring insurers using AI to provide data sources they use and conduct a risk management assessment.

Government

State	Name	Date introduced	Description
California	A302	26-Jan-23	This bill would require the Department of Technology to take inventory of all high-risk automated decision systems used by state agencies.
California	S398	9-Feb-23	This bill would require the Department of Technology to develop a research plan to investigate potential new uses of technology for the state, including "virtual assistants powered by AI."
California	California AI-ware Act (S313)	6-Feb-23	This bill would require any state agency using generative AI to communicate to disclose to that person that the communication is through generative AI.
Massachusetts	H64/S33	16-Feb-23	This bill would establish a State Commission on Automated Decision Making to investigate Massachusetts's AI use.
Missouri	H311	4-Jan-23	This bill would establish the Missouri State Technology Task Force which would investigate AI used by the state, among other technologies.
New Jersey	SB3876	22-May-23	This bill would appoint an Artificial Intelligence Officer to oversee state agencies' uses of AI.
New York	A5309	7-Mar-23	This bill would require state units purchased products that use automated decision making to adhere to responsible AI standards.
Rhode Island	S117	1-Feb-23	This bill would establish a commission to study and regulate the use of AI by the state government.
Rhode Island	H6423	19-May-23	This bill requests that the government review the extent of automated decision making used by the state of Rhode Island and its impacts.
Washington	S5356	12-Jan-23	This bill would require government agencies to follow responsible methods for procuring AI, assess the impacts of automated decision making systems they use, and conduct ongoing monitoring to uncover bias or discrimination.

Generative AI

State	Name	Date introduced	Description
Massachusetts	An Act drafted with the help of ChatGPT to regulate generative artificial intelligence models like ChatGPT (S.31)	16-Feb-23	This bill would prohibit bias in generative AI models, and would require safeguards against plagiarism and consumer privacy protections for those using generative AI, as well as registration with the attorney general.
New York	S6859/A216A	2-Jan-23	This bill would require advertisers to disclosure their use of "synthetic media."
New York	A7106/S7592	10-May-23	This bill would require political communications to disclose the use of synthetic media.
New York	A7634/S7422	25-May-23	This bill would prevent film production companies receiving production credit from using AI to replace actors in their productions.
Pennsylvania	H1063	28-Apr-23	This bill would criminalize disseminating AI-generated sexually explicit images of people without their consent.
Rhode Island	HB6286	19-Apr-23	This bill would hold generative AI models to certain operating standards, and it would require them to register with the attorney general.

Transparency and Understanding

State	Name	Date introduced	Description
California	S721	16-Feb-23	This bill would establish a California Interagency AI Working Group to deliver a report on AI.
California	AB1282	16-Feb-23	This bill would establish a commission to report on the mental health risks associated with children's use of social media and artificial intelligence.
Illinois	H3563	17-Feb-23	This bill would establish a Generative AI and Natural Language Processing Task Force.
Maryland	H1068	10-Feb-23	This bill would create a Commission on Responsible AI in Maryland.
Maryland	H1034	10-Feb-23	This bill would establish an AI Impact Advisory Board.
Nevada	S165	16-Feb-23	This bill would create an Emerging Technologies Task Force.
New Jersey	A168	11-Jan-22	This bill would require a report on AI's impact on the economy and workforce.
New Jersey	A5150	6-Feb-23	This bill would require those applying for unemployment benefits to designate whether their job loss was related to automation or other technological advances.
New Mexico	HM75/SM63	28-Feb-23	This bill requests that a task force convene to study automated decision making's impact on children when those tools are used to analyze child abuse and neglect.
New York	A4969/S6402	27-Feb-23	This bill would create a commission to study AI, robotics, and automation.
New York	A7501	25-May-23	This bill would create an office of algorithmic innovation, which would create policies and standards that ensure AI is fair.
New York	A7838	7-Jul-23	This bill would require a long-term study on the impacts of AI on the state's workforce, and would deter AI from replacing state employees' jobs.
North Carolina	S460	3-Apr-23	This bill would establish a committee on automation and the workforce.
Pennsylvania	HB49	7-Mar-23	This bill would create a registry of all businesses using AI in the state.
Pennsylvania	HR170/SR143	29-Jun-23	This resolution urges the state to establish an advisory committee to investigate AI's impacts on the state.
Texas	H3633	6-Mar-23	This bill would establish a committee to decide whether to establish a program that would train individuals in the workforce on the use of AI.

Other

State	Name	Date introduced	Description
Illinois	Anti-Click Gambling Data Analytics Collection Act (H2570)	15-Feb-23	This bill would prevent data collection on gambling platforms that would be used to predict how a player might gamble.
Pennsylvania	HB1380	12-Jun-23	Among other things, this bill would explicitly authorize using AI to determine eligibility or fraud for public benefits.
Rhode Island	S0146	1-Feb-23	This bill would prohibit the use of AI in sports betting applications.
South Carolina	SB404	18-Jan-23	This bill would prohibit targeted advertising using automated decision making for a user under 18. It would require the platform to perform age verification to ensure the user is 18 or older.

Sources for More Information

- International outlook (includes US on first 2)
  - OECD Policy Observation Center https://oecd.ai/en/
  - IAPP AI Resource Page https://iapp.org/resources/topics/artificial-intelligence-1/
  - EU Artificial Intelligence Act https://artificialintelligenceact.eu
  - Understanding China's regulations https://digichina.stanford.edu
  - Another China resource https://carnegieendowment.org/regions/251
- US Only Outlook
  - Epic State of AI Laws https://epic.org/the-state-of-state-ai-laws-2023/
  - US AI Outlook https://www.dlapiper.com/en-us/insights/publications/ai-outlook#policyresources
  - US Congress AI Legislation Tracker https://www.brennancenter.org/our-work/research-reports/artificial-intelligence-legislation-tracker