**Artificial Intelligence: Policy and Regulation**

Prepared by David Giguere for the Atlanta Regional Commission, 3/10/2023

This Artificial Intelligence (AI) Policy and Regulation primer is in response to an internal ARC conversation about artificial intelligence regulation that was prompted by the Axios article titled “[AI Outraces Guardrails](https://www.axios.com/newsletters/axios-am-5b8ea5ac-aded-4f43-8935-1fa6002520b2.html?chunk=0&utm_term=emshare#story0)”. This document will attempt to provide:

* A foundational understanding of AI
* Thoughts on why AI needs regulation
* International Policy Response to AI
* AI Policy consideration at the Federal level
* An overview of AI legislation at the State level
* Historical context of AI at ARC
* Thoughts on ChatGPT and the use of AI at ARC
* Appendix: National Conference of State Legislatures’ Legislation Related to Artificial Intelligence

What this document will *not* provide:

* A discussion on how Artificial General Intelligence, or [AGI](https://openai.com/blog/planning-for-agi-and-beyond), may benefit or harm humankind.
* A *comprehensive* review of the major types or branches of artificial intelligence

**What is Artificial Intelligence?**

Let’s start with a short definition of AI [from IBM](https://www.ibm.com/topics/artificial-intelligence):

“At its simplest form, artificial intelligence is a field, which combines computer science and robust datasets, to enable problem-solving. It also encompasses sub-fields of machine learning and deep learning, which are frequently mentioned in conjunction with artificial intelligence. These disciplines are comprised of AI algorithms which seek to create expert systems which make predictions or classifications based on input data.”

In other words, artificial intelligence uses algorithms, which are simply “mathematical instructions”, that are “[used for calculations, data processing and automated reasoning](https://www.wired.com/insights/2014/09/artificial-intelligence-algorithms-2/).” An algorithm by itself is just steps a computer should follow. The goal of using algorithms, or automated instructions, in the field of artificial intelligence is “[is to enable computers to learn on their own and make a decision or find useful patterns. Artificial Intelligence algorithms learn from the data itself](https://www.educba.com/artificial-intelligence-algorithm/)”.

Broadly, there are two main types of artificial intelligence: Weak AI and Strong AI.

“Weak AI—also called Narrow AI or Artificial Narrow Intelligence (ANI)—is AI trained and focused to perform specific tasks. **Weak AI drives most of the AI that surrounds us today**. ‘Narrow’ might be a more accurate descriptor for this type of AI as it is anything but weak; it enables some very robust applications, such as Apple's Siri, Amazon's Alexa, IBM Watson, and autonomous vehicles.

Contrast Weak or Narrow AI with Strong artificial intelligence, which does not yet exist (or at least hasn’t been publicly acknowledged):

“Strong AI is made up of Artificial General Intelligence (AGI) and Artificial Super Intelligence (ASI). Artificial general intelligence (AGI), or general AI, is a *theoretical* form of AI where a machine would have an intelligence equaled to humans; it would have a self-aware consciousness that has the ability to solve problems, learn, and plan for the future. Artificial Super Intelligence (ASI)—also known as superintelligence—would surpass the intelligence and ability of the human brain. While strong AI is still entirely theoretical with no practical examples in use today, that doesn't mean AI researchers aren't also exploring its development. In the meantime, the best examples of ASI might be from science fiction, such as HAL, the superhuman, rogue computer assistant in 2001: A Space Odyssey.” -IBM, [What is artificial intelligence (AI)?](https://www.ibm.com/topics/artificial-intelligence) .

Artificial Intelligence dates to the middle of the 20th century, with Alan Turing’s “[Computing Machinery and Intelligence](https://academic.oup.com/mind/article/LIX/236/433/986238)” published in 1950. After seventy years of research and innovation in the field of AI, we now use artificial intelligence in our daily lives across a variety of products and applications. We use digital assistants like Siri and Alexa to request information and order products ([speech recognition and natural language processing](https://www.ibm.com/topics/speech-recognition)), we search for shows on Netflix and are presented content in our social media feeds ([recommendation engines](https://research.netflix.com/research-area/recommendations)), we move quickly through airport security after a brief scan of our face ([facial recognition](https://aws.amazon.com/what-is/facial-recognition/)), we receive suggestions when writing a document or email ([word, sentence and grammar completion](https://medium.com/geekculture/auto-detecting-languages-in-microsoft-word-58356a9e1649)), we use prompt-to-text products like OpenAI’s ChatGPT ([generative AI](https://www.visualcapitalist.com/generative-ai-explained-by-ai/)) to help with content creation and we receive directions to a restaurant ([traffic and routing](https://www.wazebelgium.be/how-navigation-app-waze-works/)) using Waze or Google Maps. Though we regularly interact with artificial intelligence systems, it is still considered a ‘new’ technology. Some analysts believe we are nearing what [Gartner’s Hype Cycle](https://www.gartner.com/en/articles/what-s-new-in-artificial-intelligence-from-the-2022-gartner-hype-cycle) describes as the *Peak of Inflated Expectations*, and that we will soon enter the *Trough of Disillusionment,* or what some call (yet another) [AI Winter](https://medium.com/codex/ai-winter-is-coming-2527e333df38), where funding and interest ebbs. Products like ChatGPT and the sudden explosion in interest in generative AI may postpone that ‘AI Winter’.

**Why Artificial Intelligence needs regulation**

[This Forbes article](https://www.forbes.com/sites/hecparis/2022/09/09/regulating-artificial-intelligence--is-global-consensus-possible/) from September 2022 provides context regarding the ubiquity of AI in our lives:

“Artificial Intelligence has become commonplace in the lives of billions of people globally. Research shows that [56% of companies have adopted AI in at least one function](https://www.mckinsey.com/business-functions/quantumblack/our-insights/global-survey-the-state-of-ai-in-2021), especially in emerging nations. That’s six percent more than in 2020. AI is used in everything from optimizing service operations through to recruiting talent. It can capture biometric data and it already helps in medical applications, judicial systems, and finance, thus making key decisions in people’s lives.”

As a citizen of the planet, we can agree that the adoption and impact of AI is now global in scope. AI use cases are broad and varied, from fraud detection, judicial decisions, credit scoring and diagnosing diseases to crime identification and self-driving vehicles. It is ever present, yet imperfect, and impacts each of our lives every day. However, global consensus about when it’s appropriate to use AI, how best to protect human rights, and what is and is not an ethical application of the technology is not without challenges given divergent cultural and governmental values. Transparency into how an algorithm arrives at a result or to what degree bias is present is difficult, just as it is to understand how the training data was created and who or what is represented in the data. Any technology that is ubiquitous and capable of making decisions that directly affect our lives should be scrutinized and not easily adopted without understanding the risks and developing reasonable safeguards to protect human rights.

“The overnight success of ChatGPT is kicking off a tech-industry race to bake AI into everyday products and decision-making with little oversight from government…ChatGPT's uncanny ability to spit out stories, articles and recipes is heating up AI awareness and concerns, yet there's almost no effective U.S. regulation of the technology in place, raising fears it could promote bias, misinformation, fraud and hate.” -Axios, [AI rockets ahead in vacuum of U.S. regulation](https://www.axios.com/2023/01/30/ai-chatgpt-regulation-laws), 1/30/2023

To underscore the ubiquity of AI and the risks of unregulated, imperfect, and opaque systems in our lives, this article from Forbes provides a few additional examples:

“The challenges with AI have been well documented in the risks that AI poses for high risk applications in health care scoring as to who will receive treatment first, to systems that are making health recommendations on insufficient data sets creating bias and risks in critical access to resources or services. We have seen major AI risks in recruiting and hiring practices to even loan credit decisions reproduce existing unwanted inequities or embed new harmful bias and discrimination. More rampant unchecked use of social media has also threatened citizen privacy, and often tracked personal activities without consent. These outcomes are deeply harmful—but they are not inevitable.

Automated systems have brought about extraordinary benefits, from technology that helps farmers grow food more efficiently and computers that predict storm paths - to algorithms that can identify diseases in patients. These tools now drive important decisions across sectors, while data is helping to revolutionize global industries. Fueled by the power of American innovation, AI tools hold the potential to redefine every part of our society and make life better for everyone or possibly worse - if we don’t get Ethical AI right.” -Forbes, [2023 Will Be The Year Of AI Ethics Legislation Acceleration](https://www.forbes.com/sites/cindygordon/2022/12/28/2023-will-be-the-year-of-ai-ethics-legislation-acceleration/?sh=64eacc70e855), December 2022.

There seems to be no end to the plausible, and not so plausible dystopian futures related to AI. One more balanced and interesting approach [is Holden Karnofsky’s January 13, 2023 article and podcast installment “How we could stumble into AI catastrophe”](https://www.cold-takes.com/how-we-could-stumble-into-ai-catastrophe/). Karnofsky offers several fascinating and plausible, but thankful fictional, stories to help us think about the ways that AI could go ‘wrong’. “How we could stumble into AI catastrophe” is worth the time.

It's easy to assume that if we are not negatively impacted in obvious, concrete ways that we can see and understand, that these systems are working properly. However, when [bias](https://www.lexalytics.com/blog/bias-in-ai-machine-learning/) accidentally (or intentionally) enters into the process of developing algorithms or in the datasets that are used to train the algorithms, the negative impact to populations (often underrepresented and/or vulnerable populations) is rarely visible to those affected and often not apparent to even the developers of the AI applications.

**International Response to AI**

Looking internationally for a formal response to artificial intelligence, we find the European Union’s [Artificial Intelligence Act](https://artificialintelligenceact.eu/) and their risk-based approach to regulating artificial intelligence.

“European Union regulators approved the Artificial Intelligence Regulation Act last December, with the European Parliament set to vote on it this spring and adoption by the end of 2023. The sweeping regulation will apply to companies outside of the EU as well, with fines for noncompliance of up to 30 million euro.” -Axios, [AI rockets ahead in vacuum of U.S. regulation](https://www.axios.com/2023/01/30/ai-chatgpt-regulation-laws), January 2023

“[The AI Act](https://artificialintelligenceact.eu/the-act/) is a proposed European law on artificial intelligence (AI) – the first law on AI by a major regulator anywhere. The EU Commission is drafting an Artificial Intelligence Act to regulate the use of AI and it divides the use of AI into four risk categories to the rights of citizens:

1. Unacceptable risks, such as the use of AI in social scoring by governments, like used in China.
2. High-risk uses, such as in educational or vocational training, employment, management of workers and remote biometric identification systems, high risk areas are like AI scanning tools that rank job applicants.
3. Limited-risk applications with specific transparency obligations (e.g., a requirement to inform users when interacting with AI such as chatbots).
4. Minimal-risk AI, such as spam filters.” Forbes, [2023 Will Be The Year Of AI Ethics Legislation Acceleration](https://www.forbes.com/sites/cindygordon/2022/12/28/2023-will-be-the-year-of-ai-ethics-legislation-acceleration/?sh=64eacc70e855), December 2022.

Related to the European Union’s response to artificial intelligence policy, the United States and EU [announced an agreement](https://www.reuters.com/technology/white-house-european-commission-launch-first-of-its-kind-ai-agreement-2023-01-27/) in January 2023that will allow the use of artificial intelligence in specific industries with protected data sharing used to build better models.

The [United States Department of State](https://www.state.gov/artificial-intelligence/) works with the Organisation for Economic Co-operation and Development (OECD) to project our position and protect our interests by providing

“policy guidance to implement trustworthy AI through the Organization for Economic Cooperation and Development (OECD) AI Policy Observatory, a platform established in February 2020 to facilitate dialogue between stakeholders and provide evidence-based policy analysis in the areas where AI has the most impact.”

Regarding the OECD AI Policy Observatory (OECD.AI):

“…OECD.AI builds on the momentum of the OECD’s Recommendation on Artificial Intelligence (“OECD AI Principles”) – the first intergovernmental standard on AI – adopted in May 2019 by OECD countries and adhered to by range of partner economies. The OECD AI Principles provided the basis for the G20 AI Principles endorsed by Leaders in June 2019. OECD.AI combines resources from across the OECD, its partners and all stakeholder groups. OECD.AI facilitates dialogue between stakeholders while providing multidisciplinary, evidence-based policy analysis in the areas where AI has the most impact.” OECD.AI, [About OECD.AI.](https://oecd.ai/en/about)

Several other countries have begun developing their own frameworks and laws related to the “the design, use and deployment of automated systems. Brazil, Canada and the U.K. are working on the development of similar laws and frameworks, as well as other global jurisdictions.” (Forbes, [2023 Will Be The Year Of AI Ethics Legislation Acceleration](https://www.forbes.com/sites/cindygordon/2022/12/28/2023-will-be-the-year-of-ai-ethics-legislation-acceleration/?sh=64eacc70e855), December 2022) and Canada has attempted to enact a bill to regulate the AI, known as the [Artificial Intelligence and Data Act](https://www.justice.gc.ca/eng/csj-sjc/pl/charter-charte/c27_1.html#:~:text=The%20Artificial%20Intelligence%20and%20Data%20Act%20aims%20to%20protect%20individuals,with%20adverse%20impacts%20on%20individuals.) (AIDA), “in which risk management and information disclosure regarding high-impact AI systems will be made mandatory.”-CSIS, [Japan’s Approach to AI Regulation and Its Impact on the 2023 G7 Presidency](https://www.csis.org/analysis/japans-approach-ai-regulation-and-its-impact-2023-g7-presidency), February 2023.

From the Government of Canada’s [Bill C-27 summary: Digital Charter Implementation Act, 2022](https://ised-isde.canada.ca/site/innovation-better-canada/en/canadas-digital-charter/bill-summary-digital-charter-implementation-act-2020):

“The proposed Artificial Intelligence and Data Act will introduce new rules to strengthen Canadians’ trust in the development and deployment of AI systems, including:

* protecting Canadians by ensuring high-impact AI systems are developed and deployed in a way that identifies, assesses and mitigates the risks of harm and bias;
* establishing an AI and Data Commissioner to support the Minister of Innovation, Science and Industry in fulfilling ministerial responsibilities under the Act, including by monitoring company compliance, ordering third-party audits, and sharing information with other regulators and enforcers as appropriate; and
* outlining clear criminal prohibitions and penalties regarding the use of data obtained unlawfully for AI development or where the reckless deployment of AI poses serious harm and where there is fraudulent intent to cause substantial economic loss through its deployment. “

[Japan’s Approach to AI Regulation](https://www.csis.org/analysis/japans-approach-ai-regulation-and-its-impact-2023-g7-presidency) appears to be different, being built on social principles that aim to achieve their goals through promoting the use of AI *and* risk management designed to limit its use:

“In 2019, the Japanese government published the Social Principles of Human-Centric AI (Social Principles) as principles for implementing AI in society. The Social Principles set forth three basic philosophies: human dignity, diversity and inclusion, and sustainability. It is important to note that the goal of the Social Principles is not to restrict the use of AI in order to protect these principles but rather to realize them through AI. This corresponds to the structure of the Organization for Economic Cooperation and Development's (OECD) AI Principles, whose first principle is to achieve “inclusive growth, sustainable development, and well-being” through AI.

To achieve these goals, the Social Principles set forth seven principles surrounding AI: (1) human-centric; (2) education/literacy; (3) privacy protection; (4) ensuring security; (5) fair competition; (6) fairness, accountability, and transparency; and (7) innovation. It should be noted that the principles include not only the protective elements of privacy and security but also the principles that guide the active use of AI, such as education, fair competition, and innovation.

Japan’s AI regulatory policy is based on these Social Principles. Its AI regulations can be classified into two categories…:

* Regulation on AI: Regulations to manage risks associated with AI.
* Regulation for AI: Regulatory reform to promote the implementation of AI.”

**Artificial Intelligence at the Federal Level (2021-2023)**

In February 2021, Eric Schmidt (Former Google CEO) and Microsoft President, Brad Smith, provided testimony to the United States Senate Committee on Armed Forces on [Emerging Technologies and Their Impact on National Security](https://www.armed-services.senate.gov/hearings/21-02-23-emerging-technologies-and-their-impact-on-national-security)**.** The testimony touches on artificial intelligence, as well as several areas that connect to our Emerging Technologies Roundtable and our IIJA work. Here’s a quote from Eric Schmidt’s testimony that hits the high points:

“A national strategy should focus on fundamental technologies with broad impact on national competitiveness and security. A priority shortlist should include **AI**, 5G, microelectronics, biotechnology, and quantum computing. The importance of these areas is widely recognized. The shortlist should also include advanced production (which covers manufacture, agriculture, and assembly), as well as infrastructure augmented by machine intelligence (everything from roads to bridges to pipelines to electric networks).”

-Eric Schmidt

The [National Security Commission on Artificial Intelligence Final Report](https://www.nscai.gov/wp-content/uploads/2021/03/Full-Report-Digital-1.pdf) was published in March of 2021. The Commission was chaired by Eric Schmidt and I have not read all *756 pages* of the Final Report. Related, the U.S. Department of State published [this video](https://www.youtube.com/watch?v=EwHOtVvJcU0&t=11s) last year with Secretary Blinken's remarks at the National Security Commission on Artificial Intelligence’s (NSCAI) Global Emerging Technology Summit, in Washington, D.C. on July 13, 2021. Secretary Blinken outlined Six Pillars in this video:

* Reducing the national security risks posed by malicious cyber activities and emerging technologies.
* Ensuring that our leadership in the fierce strategic technology competition that’s now underway not only continues but grows and strengthens.
* Defending an open, secure, reliable, and interoperable internet.
* Setting technical standards and creating norms for emerging technologies. [see NIST section below]
* Making technology work for democracy.
* Promoting cooperation.

Artificial intelligence is embedded in his remarks, particularly (though ‘softly’) in remaining technologically competitive and growing our talent pipelines. The overall thrust of Secretary Blinken’s remarks and the National Security Commission on Artificial Intelligence Final Report mentioned above can be summed up with these points found [in this CNBC article](https://www.cnbc.com/2021/03/02/us-not-prepared-to-defend-or-compete-in-ai-era-says-eric-schmidt-group.html) from March 2021:

* The National Security Commission on AI believes that China could soon replace the U.S. as the world’s “AI superpower” and said there are serious military implications to consider.
* In a report, it warned that AI systems will be used in the “pursuit of power” and that “AI will not stay in the domain of superpowers or the realm of science fiction.”
* It also urges President Biden to reject calls for a global ban on highly controversial AI-powered autonomous weapons, saying that China and Russia are unlikely to keep to any treaty they sign.

Keep in mind, these remarks are now two years old and the A.I. landscape is evolving incredibly quickly. For instance, fears about autonomous weapons were front and center two years ago. Since that time, autonomous weapon platforms have been deployed in Ukraine and elsewhere.

Several other notable AI policy items include:

The introduction in February 2022 of the [Algorithmic Accountability Act of 2022](https://www.congress.gov/bill/117th-congress/senate-bill/3572/text) in both houses of Congress.

In October 2022, the Office of Science and Technology Policy published the [Blueprint for an AI Bill of Rights](https://www.whitehouse.gov/ostp/ai-bill-of-rights/), identifying five principles that should “guide the design, use, and deployment of automated systems to protect the American public in the age of artificial intelligence.” The five principles are:

* Safe and Effective Systems
* Algorithmic Discrimination Protections
* Data Privacy
* Notice and Explanation
* Human Alternatives, Consideration, and Fallback

The Blueprint for an AI Bill of Rights contains a section titled *From Principles to Practice* that “considers each principle in the Blueprint for an AI Bill of Rights and provides examples and concrete steps for communities, industry, governments, and others to take in order to build these protections into policy, practice, or the technological design process.” The *From Principles to Practice* section should be a useful reference if ARC develops a regional AI policy.

In January 2023, the National Institute of Standards and Technology (NIST) issued their [AI Risk Management Framework](https://nvlpubs.nist.gov/nistpubs/ai/NIST.AI.100-1.pdf), “a multi-tool for organizations to design and manage trustworthy and responsible artificial intelligence (AI)”. For reference, NIST is part of the Department of Commerce, which is charged with maintaining weights and measures. Referencing the AI Risk Management Framework, [Deputy Commerce Secretary Don Graves](https://www.axios.com/2023/01/30/ai-chatgpt-regulation-laws) stated that “The framework should ‘accelerate AI innovation and growth while advancing — rather than restricting or damaging — civil rights, civil liberties and equity for all’.

[This article from Brookings](https://www.brookings.edu/blog/techtank/2023/02/15/nists-ai-risk-management-framework-plants-a-flag-in-the-ai-debate/) provides a snapshot of how the AI Risk Management Framework may play a role in how we manage AI.

“AI, as a general-purpose technology, spans a wide range of technologies, data sources and applications. AI’s breadth makes it “uniquely challenging” for information technology risk management. The AI RMF thus introduces “socio-technical” dimensions to its risk management approach, yielding a wide aperture that encompasses “societal dynamics and human behavior” across a wide range of outcomes, actors, and stakeholders and actors to consider “People and Planet”

…Artificial intelligence has provoked wide discussions of AI risks and benefits, concerns about bias in AI training data and outputs, and questions as to what constitutes reliable and trustworthy AI as well as ideas for how to address these. The AI RMF provides two lenses through which to consider such questions. First, it provides a conceptual roadmap for identifying risk in the AI context – outlining general types and sources of risk relating to AI, and enumerating seven key characteristics of trustworthy AI (safe, secure and resilient, explainable and interpretable, privacy-enhanced, fair—with harmful bias managed, accountable and transparent, valid and reliable).

Second, it offers a set of organizational processes and activities to assess and manage risk linking AI’s socio-technical dimensions to stages in the lifecycle of an AI system and to the actors involved.”

**An overview of AI legislation at the state level**

National Conference of State Legislatures’ [Legislation Related to Artificial Intelligence](https://www.ncsl.org/technology-and-communication/legislation-related-to-artificial-intelligence) report published August 26, 2022summarizes that “General artificial intelligence bills or resolutions were introduced in at least 17 states in 2022, and were enacted in Colorado, Illinois, Vermont and Washington. Colorado, Illinois, and Vermont created task forces or commissions to study AI.” The appendix found at the end of this document contains a list of specific state legislation and state task forces or commissions (from 2019 through August 2022) found in the *Legislation Related to Artificial Intelligence* report. As of 8/2022, there appears to be one failed AI-related bill (Georgia [GA H.B. 1651](http://custom.statenet.com/public/resources.cgi?id=ID:bill:GA2021000H1651&ciq=ncsl&client_md=572b1163711ade3715688fa286593c6b&mode=current_text)) associated with Georgia that attempted to create a “Transparency and Fairness in Automated Decision Making Commission”.

**Artificial Intelligence at the Atlanta Regional Commission**

For context, I’m including a brief history of AI research and application within Research & Analytics at ARC. While it’s safe to assume conversations involving artificial intelligence were taking place at ARC in other departments, informal discussion on AI topics and articles are found going back at least seven years. In 2018/2019, we made the decision to develop a practical, AI-powered solution for a long-standing GIS challenge. Working with a temporary employee, we developed and tested a custom AI algorithm that automated imagery classification for our LandPro landuse/landcover project. Our AI proof-of-concept met with limited success, but it did help us understand the viability and shortcomings found in the technology at the time. The marketplace has rapidly advanced since our foray and Esri, our GIS software provider, now has several off-the-shelf tools available that may help us make progress. In 2020, I explored deepfake and self-driving technologies, Unreal Engine’s MetaHuman product and synthesized human platforms like *This Person Does Not Exist*. In 2021, I explored AI-powered voice and video platforms and, in 2022, I experimented with Generative AI image applications MidJourney and Dall-E to generate images for our Emerging Technologies Roundtable meetings and reports. Most recently, ChatGPT was used to generate sample text content for our Emerging Technologies Roundtable *Responsible Artificial Intelligence & The State of Digital Art in Atlanta* report.

**Thoughts on ChatGPT**

Given the popularity of ChatGPT across departments at ARC, it would be wise to develop an internal ‘rule of engagement’ for when it is and is not appropriate for ARC staff to use artificial intelligence tools. I’m including a few recent, relevant articles on ChatGPT:

* [OpenAI says ChatGPT must be regulated. Meanwhile, get ready for AI audits](https://venturebeat.com/ai/openai-says-chatgpt-must-be-regulated-meanwhile-get-ready-for-ai-audits-the-ai-beat/). OpenAI, the company/non-profit behind ChatGPT, calls for regulation.
* [Two frightening things before breakfast: We are living in the Wild AI West. Get used to it. By Gary Marcus](https://garymarcus.substack.com/p/two-frightening-things-before-breakfast). An AI post that suggests how Large Language Models, like those used in ChatGPT/Bing and Google Bard, could be weaponized or misdirected.
* [Why China Didn’t Invent ChatGPT](https://www.nytimes.com/2023/02/17/business/china-chatgpt-microsoft-openai.html). This New York Times article suggests the United States is winning the race for AI dominance with China now lagging behind.

There are several important shortcomings to OpenAI’s ChatGPT (which stands for Generative Pre-training Transformer 3) that articles often gloss over, though anyone using ChatGPT should be aware of:

1. ChatGPT has “limited knowledge of world events after 2021” and is “prone to filling in replies with incorrect data if there is not enough information available on a subject.”
2. ChatGPT isn’t connected to the internet and cannot access external information not found in the data that was used to train it. Despite the hyperbolic articles suggesting it will unseat Google as a search engine, ChatGPT is not (yet) a full-fledged search engine. Rather, it is a chatbot that can understand human writing and contextual nuances during a ‘chat’ and return well-written (from a grammar and flow perspective) content. If it understands a topic, you could receive a very impressive result. However, if ChatGPT doesn’t understand a topic it will often fabricate content that sounds great but is completely or partially inaccurate. ChatGPT does not know whether the response it provides is accurate or not. It’s up to us as users to confirm the accuracy of the response.
3. ChatGPT was trained on millions of documents, 300 billion words and over 570GB worth of data. Since it’s not connected to the internet, it is limited to the factual knowledge found within this training data. 570GB sounds like a lot but consider there are hundreds of exabytes of data generated globally every day: 570GB = 0.00000057 Exabytes. ChatGPT is ‘aware’ of a tiny fraction of the globally stored data.

To demonstrate the power of ChatGPT, I entered this prompt “Please write an executive summary of artificial intelligence legislation, policy and regulations at the federal, state and local levels in the United States.” The unedited response below is courtesy of ChatGPT:

*Artificial Intelligence (AI) legislation, policy, and regulations in the United States vary across the federal, state, and local levels. At the federal level, there is currently no comprehensive AI legislation, but various agencies have issued guidelines and recommendations for the development and use of AI. For example, the National Institute of Standards and Technology (NIST) released a framework for AI governance. At the state level, some states have enacted laws related to AI in specific industries, such as California's regulations on autonomous vehicles. However, there is currently no comprehensive state-level AI legislation. At the local level, cities and counties have begun to explore the use of AI in government services, such as in criminal justice and traffic management. However, there are currently no uniform regulations for the use of AI at the local level. Overall, the regulation of AI in the United States is in its early stages, with a patchwork of guidelines and recommendations at the federal, state, and local levels. As AI continues to play a larger role in various industries, it is likely that further regulations will be developed in the future.*

The ChatGPT response is curious. While it typically does not have knowledge of current events (2021+), OpenAI clearly updated the training model to include mention of the very recent NIST framework. I am cautiously optimistic that ChatGPT and similar applications *will* improve and evolve, opening new avenues of creativity as we co-create with them and effortlessly handling more mundane or repetitive tasks that allow us increased productivity focused on higher value work.

**Thoughts on AI and our Region**

In addition to developing an [internal ARC policy that governs how we approach the use of ChatGPT and other AI systems](https://www.morganlewis.com/pubs/2023/01/thinking-about-implementing-ai-in-2023-what-organizations-need-to-know), we should also cultivate a better understanding of how AI could improve, or harm, the lives of our residents. Here are few questions that may warrant research:

* How may AI help our constituent governments improve the delivery of services to residents and what are the unintended, but potentially harmful, results we should consider?
* What are cyber and physical security considerations, particularly related to regional critical infrastructure?
* Can we repurpose the risk model approach found in the European Union AI Act and US NIST Risk Management Framework to craft our own regional framework?
* How do we educate ARC staff on AI’s limitations and potential biases?

We speculated on several AI themes in writing future looking scenario in the first Emerging Technologies Roundtable report ([Transportation Technology and Artificial Intelligence, January 2022](https://cdn.atlantaregional.org/wp-content/uploads/arc-etr-report-on-transportation-technology-and-artificial-intelligence-q4-2021.pdf)) and as our ETR membership grows to include additional subject matter experts with AI-related expertise, we improve our ability to develop policy and guide our stakeholders on matters related to artificial intelligence.

I mentioned in the opening that this document would not touch on artificial *general* intelligence (AGI), but if you are interested in how OpenAI (the makers of ChatGPT) is thinking about AGI, read this blog post from Sam Altman: [Planning for AGI and beyond](https://openai.com/blog/planning-for-agi-and-beyond). Given the rapid, seemingly daily, advances in artificial intelligence technologies, I found it challenging to arrive at a clean and logical conclusion in writing this primer. Each day brought along a technological update to include, framework to incorporate or policy to consider. As such, I anticipate this document will require a periodic refresh as our understanding of AI matures and the body of policy and legislation grows.

All the best,

David Giguere | Emerging Technologies

Atlanta Regional Commission

**Appendix**

National Conference of State Legislatures’ **Legislation Related to Artificial Intelligence** (published 8/26/2022) <https://www.ncsl.org/technology-and-communication/legislation-related-to-artificial-intelligence>

**State Task Forces or Commissions**

* Alabama Commission on Artificial Intelligence and Associated Technologies, created by [SJR 71](http://custom.statenet.com/public/resources.cgi?id=ID:bill:AL2019000SJR71&ciq=ncsl&client_md=610424f9b68f56669d259f71528bfc54&mode=current_text), 2019
* [California Future of Work Commission](https://www.labor.ca.gov/labor-and-workforce-development-agency/fowc/), created by executive order 2, 2020
* [Artificial Intelligence: A Roadmap for California](https://lhc.ca.gov/sites/lhc.ca.gov/files/Reports/245/Report245.pdf), Little Hoover Commission, Nov. 2018
* Hawaii Artificial Intelligence Advisory Committee, created by [SR 142](https://www.capitol.hawaii.gov/session2019/bills/SR142_.HTM), 2019
* [New Jersey Governor’s Future of Work Task Force](https://nj.gov/governor/news/news/562018/approved/20181105a.shtml), Nov. 2018
* New York Future of Work Commission, created by [S.B. 3971](http://custom.statenet.com/public/resources.cgi?id=ID:bill:NY2019000S3971&ciq=ncsl&client_md=2f7d69c27aee3b3970517293ccd2ccb4&mode=current_text), 2019
* Utah Deep Technology Talent Advisory Council, created by [S.B. 96](https://le.utah.gov/~2020/bills/static/SB0096.html), 2020
* [Vermont Artificial Intelligence Task Force](https://accd.vermont.gov/economic-development/artificial-intelligence-task-force), created by [H.B. 378](https://legislature.vermont.gov/bill/status/2018/H.378), 2018
* [Washington Automated Decision-Making Systems Workgroup Report](https://protect-us.mimecast.com/s/Kh0hCR6r7VTv1NXkc9LB0I), [S.B. 5092](https://lawfilesext.leg.wa.gov/biennium/2021-22/Pdf/Bills/Session%20Laws/Senate/5092-S.SL.pdf#page=116), 2021, Dec. 2021
* Washington Future of Work Task Force, created by [S.B. 6544](http://lawfilesext.leg.wa.gov/biennium/2017-18/Pdf/Bills/Session%20Laws/Senate/6544-S.SL.pdf?cite=2018%20c%20294%20%C2%A7%202.), 2017

**2023 Enacted State Legislation**

New York City [Local Law 144 (LL 144)](https://legistar.council.nyc.gov/LegislationDetail.aspx?ID=4344524&GUID=B051915D-A9AC-451E-81F8-6596032FA3F9&Options=Advanced&Search)

Status: **Enacted**

Effective January 1, 2023, and will require employers using automated employment decision tools in recruiting and promotions to satisfy a bias audit requirement and provide notices and disclosures regarding the audit results and the use of any automated AI tools. Other countries and states, within the U.S. and globally, are also putting forth legislative laws to address the employment-related use of AI and the risks and biases it poses to fair employment recruitment practices. Other states like CA, Illinois and Maryland are also considering legislation that could impact the use of AI in hiring and other employment decisions. Law 144 prohibits the use of an automated AI recruiting tools unless:

1. A bias audit is completed within one year of its use;
2. The results are made publicly available;
3. The notice is provided to job candidates regarding the use of AI recruiting tools; and
4. Candidates or employees are allowed to request an alternative evaluation process as an accommodation to the proposed AI methods.

- <https://www.forbes.com/sites/cindygordon/2022/12/28/2023-will-be-the-year-of-ai-ethics-legislation-acceleration/?sh=64eacc70e855>

**2022 Enacted State Legislation**

Colorado [CO S.B. 113](http://custom.statenet.com/public/resources.cgi?id=ID:bill:CO2022000S113&ciq=ncsl&client_md=c09fcddf2a99232aa515279f4b78cf84&mode=current_text)
Status: **Enacted**
Creates a task force for consideration of facial recognition services, which is directed, among other issues, to recommend whether the scope of the task force should be expanded to include consideration of artificial intelligence.

Illinois [IL H.B. 53](http://custom.statenet.com/public/resources.cgi?id=ID:bill:IL2021000H53&ciq=ncsl&client_md=cf812e17e7ae023eba694938c9628eea&mode=current_text)
Status**: Enacted**
Amends the Artificial Intelligence Video Interview Act, provides that employers that rely solely upon artificial intelligence to determine whether an applicant will qualify for an in-person interview must gather and report certain demographic information to the Department of Commerce and Economic Opportunity, requires the Department to analyze the data and report to the Governor and General Assembly whether the data discloses a racial bias in the use of artificial intelligence.

Illinois [IL H.B. 645](http://custom.statenet.com/public/resources.cgi?id=ID:bill:IL2021000H645&ciq=ncsl&client_md=d49cc5fd8ce6386c082c848a14eeb265&mode=current_text)
Status**: Enacted**
Creates the Future of Work Act, creates the Future of Work Task Force, provides for the duties and responsibilities of the Task Force, provides for the membership and meetings of the Task Force, provides that members of the Task Force shall serve without compensation, provides that the Department of Commerce and Economic Opportunity shall provide administrative support to the Task Force.

Vermont [VT H.B. 410](http://custom.statenet.com/public/resources.cgi?id=ID:bill:VT2021000H410&ciq=ncsl&client_md=d9744d8eb4dbb213bebb222c496a20a6&mode=current_text)
Status: **Enacted**
Proposes to create the Artificial Intelligence Commission to support the ethical use and development of artificial intelligence in the State, relates to the use and oversight of artificial intelligence in State government.

Washington [WA S.B. 5092](http://custom.statenet.com/public/resources.cgi?id=ID:bill:WA2021000S5092&ciq=ncsl&client_md=14ceb367ee008b936b42c28a9ff828d4&mode=current_text)
Status: **Enacted**
Makes 2021-2023 fiscal biennium operating appropriations, including appropriations solely for the office of the chief information officer who must convene a work group to examine how automated decision making systems can best be reviewed before adoption and while in operation and be periodically audited to ensure that such systems are fair, transparent, accountable and do not improperly advantage or disadvantage Washington residents.

Washington [WA S.B. 5693](http://custom.statenet.com/public/resources.cgi?id=ID:bill:WA2021000S5693&ciq=ncsl&client_md=06eee3bf1a7c3a1f44f82a57f3540239&mode=current_text)
Status: **Enacted**
Makes 2021-2023 fiscal biennium operating appropriations, including appropriations solely for the office of the chief information officer who must convene a work group to examine how automated decision making systems can best be reviewed before adoption and while in operation and be periodically audited to ensure that such systems are fair, transparent, accountable and do not improperly advantage or disadvantage Washington residents.

Georgia [GA H.B. 1651](http://custom.statenet.com/public/resources.cgi?id=ID:bill:GA2021000H1651&ciq=ncsl&client_md=572b1163711ade3715688fa286593c6b&mode=current_text)
Status: Failed
Relates to general provisions regarding state government, so as to create the Transparency and Fairness in Automated Decision Making Commission, provides for the composition and operation of same, provides for a survey and recommendations, provides for public notice and input, provides for reporting, provides for definitions, provides for related matters, repeals conflicting laws.

**2021 Enacted State Legislation**

Alabama [AL S.B. 78](http://custom.statenet.com/public/resources.cgi?id=ID:bill:AL2021000S78&ciq=ncsl&client_md=533f420a3d0e36079951ba1a55ee819d&mode=current_text)
Status: **Enacted**
Establishes the Alabama Council on Advanced Technology and Artificial Intelligence to review and advise the Governor, the Legislature, and other interested parties on the use and development of advanced technology and artificial intelligence in this state.

Colorado [CO S.B. 169](https://www.leg.colorado.gov/sites/default/files/2021a_169_signed.pdf)
Status: **Enacted**
Prohibits insurers from using any external consumer data and information sources, as well as any algorithms or predictive models that use external consumer data and information sources in a way that unfairly discriminates based on race, color, national or ethnic origin, religion, sex, sexual orientation, disability, gender identity or gender expression.

Illinois [IL H.B. 53](http://custom.statenet.com/public/resources.cgi?id=ID:bill:IL2021000H53&ciq=ncsl&client_md=cf812e17e7ae023eba694938c9628eea&mode=current_text)
Status: **Enacted**
Amends the Artificial Intelligence Video Interview Act, provides that employers that rely solely upon artificial intelligence to determine whether an applicant will qualify for an in-person interview must gather and report certain demographic information to the Department of Commerce and Economic Opportunity, requires the Department to analyze the data and report to the Governor and General Assembly whether the data discloses a racial bias in the use of artificial intelligence.

Illinois [IL H.B. 645](http://custom.statenet.com/public/resources.cgi?id=ID:bill:IL2021000H645&ciq=ncsl&client_md=d49cc5fd8ce6386c082c848a14eeb265&mode=current_text)
Status: **Enacted**
Creates the Future of Work Act, creates the Future of Work Task Force, provides for the duties and responsibilities of the Task Force, provides for the membership and meetings of the Task Force, provides that members of the Task Force shall serve without compensation, provides that the Department of Commerce and Economic Opportunity shall provide administrative support to the Task Force.

Mississippi [MS HB 633](http://www.legislature.ms.gov/legislation/measure-search/)
Status: **Enacted**
Directs the State Department of Education to implement K-12 computer science curriculum to include instruction in…robotics, artificial intelligence and machine learning.

New Jersey [NJ S.B. 2723](http://custom.statenet.com/public/resources.cgi?id=ID:bill:NJ2020000S2723&ciq=ncsl&client_md=ad36d8f1b0e8865874948f65eb323603&mode=current_text)
Status: **Enacted**
Concerns the modernization of State government websites; relates to 21st Century Integrated Digital Experience Act; adds definition; evaluates on an annual basis the feasibility of using artificial intelligence, machine learning, and commercial cloud computing services, as well as other emerging technologies, by State agencies to provide public services and the development of data analytics capabilities.

Washington [WA S.B. 5092](https://lawfilesext.leg.wa.gov/biennium/2021-22/Pdf/Bills/Session%20Laws/Senate/5092-S.SL.pdf#page=116)
Status: **Enacted**
Makes 2021-2023 fiscal biennium operating appropriations, including funding for the Washington Automated Decision-Making Systems Workgroup.

**2020 Enacted State Legislation**

Utah [UT S.B. 96](https://le.utah.gov/~2020/bills/static/SB0096.html)
**Status: Enacted**
Creates a deep technology talent initiative within higher education.

**2019 Enacted State Legislation**

Alabama [AL SJR 45](http://custom.statenet.com/public/resources.cgi?id=ID:bill:AL2019000SJR45&ciq=ncsl&client_md=bb713dbb453211342f79eed835dadc1c&mode=current_text)
**Status: Enacted**
Recognizes Alabama's technology and growing artificial intelligence job sectors' impact on the state's economy.

Alabama [AL SJR 71](http://custom.statenet.com/public/resources.cgi?id=ID:bill:AL2019000SJR71&ciq=ncsl&client_md=610424f9b68f56669d259f71528bfc54&mode=current_text)
**Status: Enacted**
Establishes the state Commission on Artificial Intelligence and Associated Technologies to review and advise on all aspects of the growth of artificial intelligence and associated technology in the state and the use of artificial intelligence in various fields.

California [CA A.B. 485](http://custom.statenet.com/public/resources.cgi?id=ID:bill:CA2019000A485&ciq=ncsl&client_md=04e7b31dafc05fbee86dcbe9ee2d5718&mode=current_text)
**Status: Enacted**
Requires each local agency to provide specified information to the public before approving an economic development subsidy for a warehouse distribution center, to hold hearings, and to report on those subsidies. Requires local agencies to submit a report to the Governor's Office of Business and Economic Development providing specified information, including any net job loss or replacement due to the use of automation, artificial intelligence, or other technologies, if known.

California [CA SJR 6](http://custom.statenet.com/public/resources.cgi?id=ID:bill:CA2019000SJR6&ciq=ncsl&client_md=3dfa1f700fc43c519c2a8b11a1e8baeb&mode=current_text)
**Status: Adopted**
Urges the President and the Congress of the United States to develop a comprehensive Artificial Intelligence Advisory Committee and to adopt a comprehensive artificial intelligence policy.

Delaware [DE HCR 7](http://custom.statenet.com/public/resources.cgi?id=ID:bill:DE2019000HCR7&ciq=ncsl&client_md=9439ebcacc40eb24cf42d5872ca013a5&mode=current_text)
**Status: Adopted**
Recognizes the possible life-changing impact the rise of robotics, automation and artificial intelligence will have on Delawareans and encourages all branches of state government to implement plans to minimize the adverse effects of the rise of such technology.

Hawaii [HI SR 142](https://www.capitol.hawaii.gov/session2019/bills/SR142_.HTM)
**Status: Adopted**
Requests the state to convene an Artificial Intelligence Advisory Committee to investigate how to implement, develop, and regulate artificial intelligence in the state.

Idaho ID HB 118
Status: **Enacted**
Promotes transparency and accountability in pre-trial risk assessment tools—algorithms— that help inform sentencing and bail decisions for defendants.

Illinois [IL H.B. 2557](http://custom.statenet.com/public/resources.cgi?id=ID:bill:IL2019000H2557&ciq=ncsl&client_md=dd210b2238e88954d6a509e50315f043&mode=current_text)
**Status: Enacted**
Creates the Artificial Intelligence Video Interview Act, provides that an employer that asks applicants to record video interviews and uses an artificial intelligence analysis of applicant submitted videos shall notify each applicant in writing before the interview that artificial intelligence may be used to analyze the applicant's facial expressions and consider the applicant's fitness for the position, provides each applicant with an information sheet before the interview.

New York [NY S.B. 3971](http://custom.statenet.com/public/resources.cgi?id=ID:bill:NY2019000S3971&ciq=ncsl&client_md=2f7d69c27aee3b3970517293ccd2ccb4&mode=current_text)
**Status: Enacted**
Creates a temporary state commission to study and investigate how to regulate artificial intelligence, robotics and automation, provides for the repeal after the expiration thereof.

Texas S.B. [64](http://www.legis.state.tx.us/tlodocs/86R/billtext/html/SB00064F.HTM)
Status: **Enacted**
Each state agency and local government shall, in the administration of the agency or local government, consider using next generation technologies, including cryptocurrency, blockchain technology, and artificial intelligence.

Vermont [VT H.B. 16](http://custom.statenet.com/public/resources.cgi?id=ID:bill:VT2019000H16&ciq=ncsl&client_md=032c16e14644158c2136a81d814fa574&mode=current_text)
**Status: Enacted**
Requires the Artificial Intelligence Task Force, created by 2018 Acts and Resolves No. 137, Sec. 1 ([H.B. 378](https://legislature.vermont.gov/bill/status/2018/H.378)), to submit a final report to the Senate Committee on Government Operations and the House Committee on Energy and Technology on or before Jan. 15, 2020.